

INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Overview of Performance of Mutual Funds



MUTUAL FUNDS

A way to invest in a diversified portfolio of stocks even if have a small amount to invest

Mutual funds can be both *actively managed* or *passively managed* (i.e., index fund)

MUTUAL FUNDS

Big trend in the U.S. with mutual funds holding an increasingly larger share of U.S. stock market

BIG TREND IN STOCK OWNERSHIP

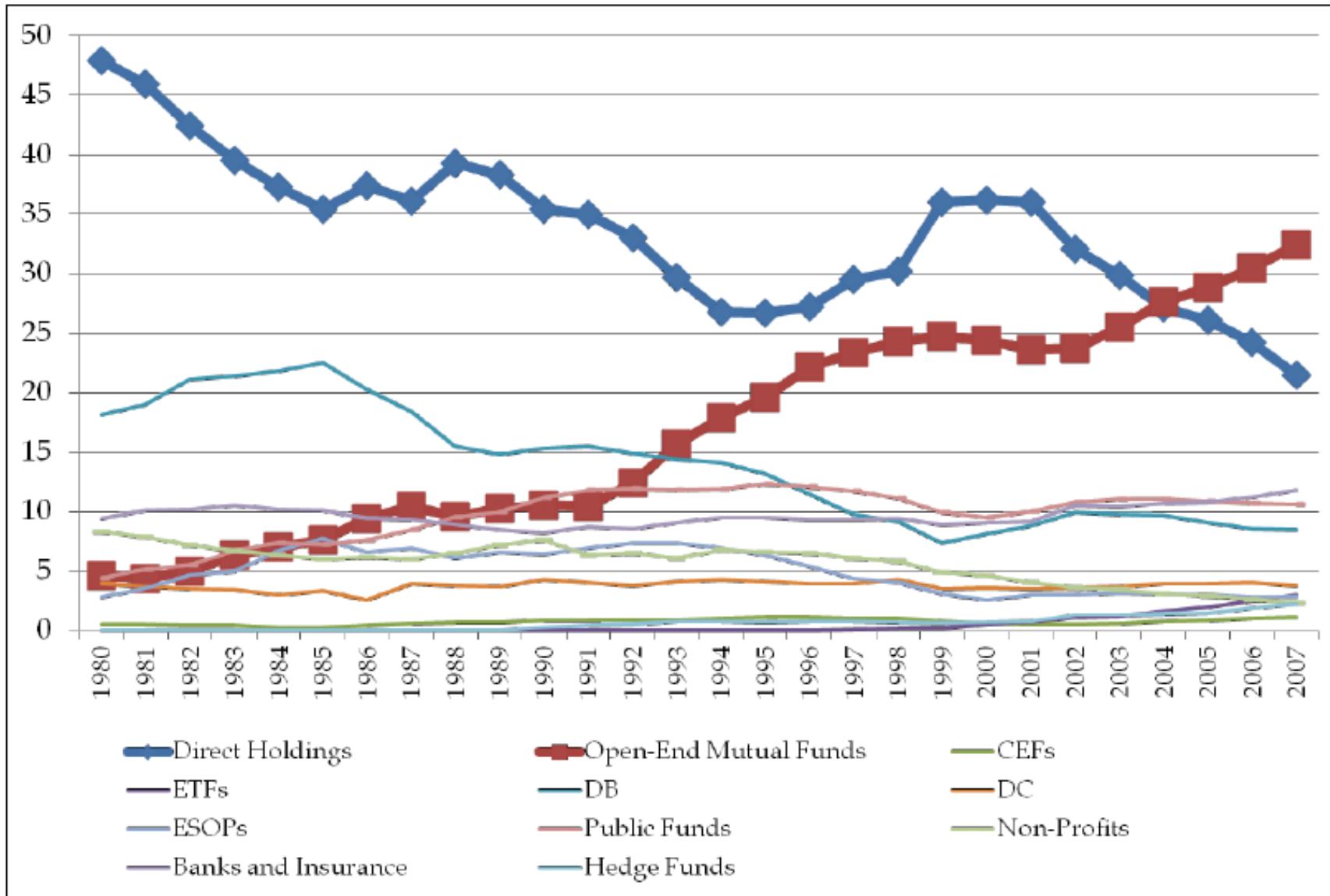


Figure 1: Rise in open-end mutual fund ownership in the U.S. (crimson line). Data come from French (2008), Table I.

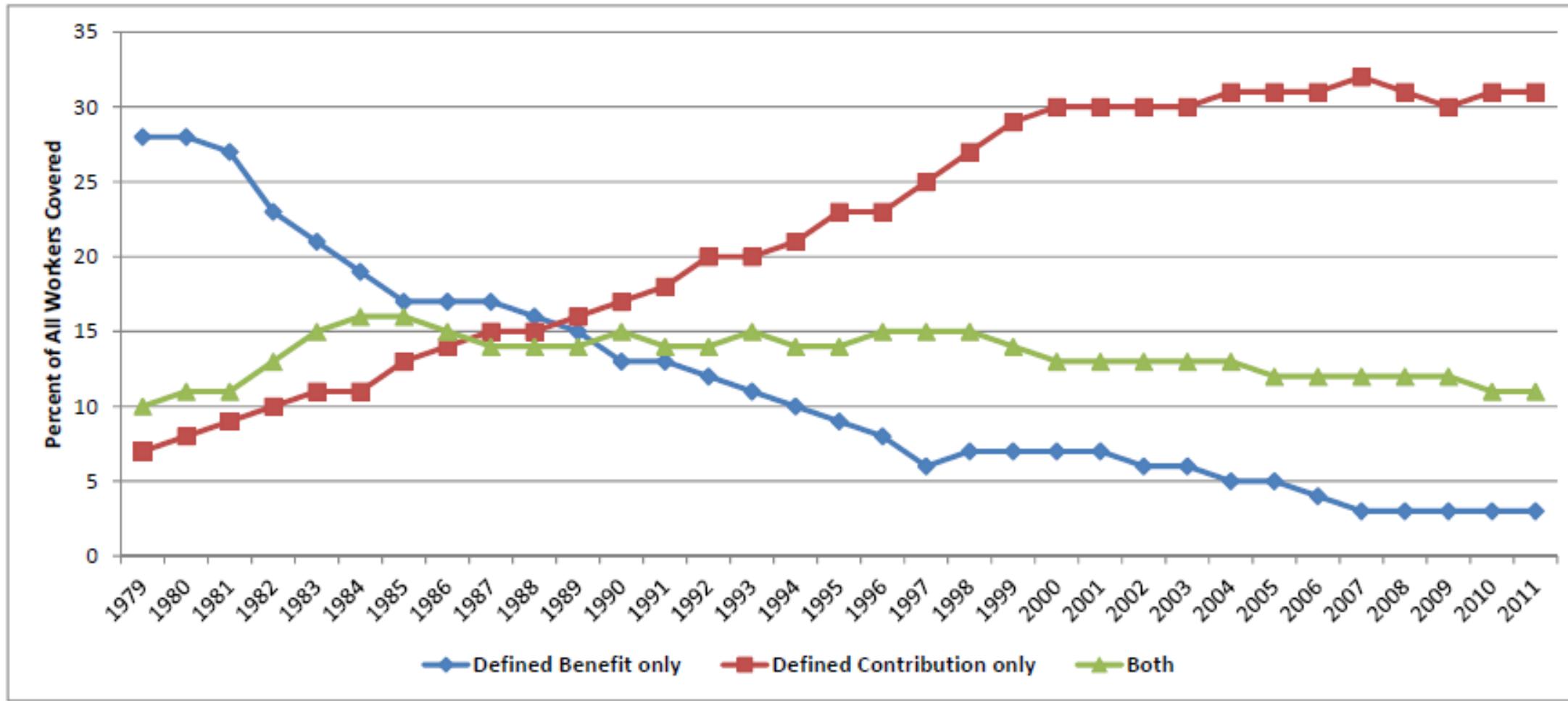
MUTUAL FUNDS

Big trend in the U.S. with mutual funds holding an increasingly larger share of U.S. stock market

Growth of DC pension plans over last 30 years also leads to more investments in mutual funds

BIG TREND IN PENSION COVERAGE

Percent of Private-Sector Workers Participating in an Employment-Based Retirement Plan,
by Plan Type, 1979-2011 (*Among All Workers*)



Source: Employee Benefit Research Institute (accessed 2012)

MUTUAL FUNDS

Investment Company Institute or ICI reports in its *2016 Fact Book* (p. 2) that U.S. mutual funds managed \$15.7 trillion in 2015

Individual Retirement Account and DC pension plan assets in mutual funds are \$7.1 trillion

ICI (2016, p. 2) also reports that 44% of U.S. households own funds and that the median mutual fund assets of mutual fund-owning households is \$120,000

ICI (2016, p. 172) further reports that there are over 8,000 different mutual funds as of 2015!

NATURAL QUESTION: HOW DO MUTUAL FUNDS PERFORM?

When investing in mutual funds, several factors to consider:

Asset allocation

Index vs. actively managed

Fees charged by the fund

NATURAL QUESTION: HOW DO MUTUAL FUNDS PERFORM?

What is the evidence regarding the performance of mutual funds?

Can measure performance both *net* of annual mutual fund fees (i.e., what goes in the investor's pocket) and *gross* of annual mutual fund fees (a way to measure skill of the manager)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS

Suppose a mutual fund is an index fund that tracks the performance of small-capitalization stocks. What should be its alpha in the 3-Factor Model?

Suppose a mutual fund is an index fund that tracks the performance of value stocks. What should be its alpha in the 3-Factor Model?

DISCUSSION OF QUESTIONS

Suppose a mutual fund is an index fund that tracks the performance of small-capitalization stocks. What should be its alpha in the 3-Factor Model?

Suppose a mutual fund is an index fund that tracks the performance of value stocks. What should be its alpha in the 3-Factor Model?

For index funds based on attributes included in the risk-return model employed (e.g., 3-Factor Model), the alpha for gross returns should be zero and for net returns should be slightly negative (reflecting the annual expense charged by the fund).

STUDY OF PERFORMANCE OF ACTIVE MUTUAL FUNDS

Fama and French (2010) study the performance of U.S. actively-managed equity mutual funds from 1984-2006

Evaluate the performance of all actively-managed mutual funds on both an equal-weighted and value-weighted basis using:

CAPM

3-Factor Model (add size and value controls)

4-Factor Model (add size, value, and momentum controls)

STUDY OF PERFORMANCE OF ACTIVE MUTUAL FUNDS

Fama and French (2010) study the performance of U.S. actively-managed equity mutual funds from 1984-2006

Analyze performance on both a *NET* (after annual fees) and *GROSS* basis (before annual fees), in annual percentage points

Coefficient estimates from a model are reported in one row (with the *t*-statistics of those estimates in the row below)

t-statistic with magnitude of at least 2 indicates statistical significance at a conventional 5% level

THE PERFORMANCE OF EQUITY MUTUAL FUNDS

$$R_{it} - R_{ft} = a_i + b_i(R_{Mt} - R_{ft}) + s_iSMB_t + h_iHML_t + m_iMOM_t + e_{it}$$

	$12 * a$						R^2
	Net	Gross	b	s	h	m	
EW Returns							
<i>Coef</i>	-1.11	0.18	1.01				0.96
<i>t(Coef)</i>	-1.80	0.31	1.12				
<i>Coef</i>	-0.93	0.36	0.98	0.18	-0.00		0.98
<i>t(Coef)</i>	-2.13	0.85	-1.78	16.09	-0.24		
<i>Coef</i>	-0.92	0.39	0.98	0.18	-0.00	-0.00	0.98
<i>t(Coef)</i>	-2.05	0.90	-1.78	16.01	-0.25	-0.14	
VW Returns							
<i>Coef</i>	-1.13	-0.18	0.99				0.99
<i>t(Coef)</i>	-3.03	-0.49	-2.10				
<i>Coef</i>	-0.81	0.13	0.96	0.07	-0.03		0.99
<i>t(Coef)</i>	-2.50	0.40	-5.42	7.96	-3.22		
<i>Coef</i>	-1.00	-0.05	0.97	0.07	-0.03	0.02	0.99
<i>t(Coef)</i>	-3.02	-0.15	-5.03	7.78	-3.03	2.60	

Source: Fama & French (2010, Table 2)

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Source: Fama & French (2010, Table 2)

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Fees and Fund Performance



IS BIGGER BETTER WHEN IT COMES TO MUTUAL FUND FEES?



Source: Wags05 (2008)

REMEMBER “WEISBENNER SON FUNDS”? HE CHARGED 1.5% MANAGEMENT FEE



Source: Image from Scott Weisbennner

“WEISBENNER SON FUNDS” IS NOW “WEISBENNER SONS ASSET MANAGEMENT”!



Source: Image from Scott Weisbennner

ANNUAL MANAGEMENT FEE IS NOW 2%!



Source: Image from Scott Weisbennner

ARE THEY EARNING THE EXTRA FEE THEY CHARGE?



Source: Image from Scott Weisbennner

ARE THEY EARNING THE EXTRA FEE THEY CHARGE?



Source: Image from Scott Weisbennner

IS BIGGER BETTER WHEN IT COMES TO MUTUAL FUND FEES?

Gil-Bazo and Ruiz-Verdú (2009) study the relation between fees charged by an actively-managed equity mutual fund and the *before-fee* performance of that fund

Use data on U.S. mutual funds from 1962-2005

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS



In equilibrium, what is the predicted relation between mutual fund fees and before-fee alpha (i.e., gross alpha)?

Specifically, in equilibrium, should we expect funds with high fees to have higher, the same, or lower alphas than funds with lower fees?

DISCUSSION OF QUESTIONS

In equilibrium, what is the predicted relation between mutual fund fees and before-fee alpha (i.e., gross alpha)?

Specifically, in equilibrium, should we expect funds with high fees to have higher, the same, or lower alphas than funds with lower fees?

IS BIGGER BETTER WHEN IT COMES TO MUTUAL FUND FEES?

For each month t , estimate a 4-Factor Model (or 3-Factor Model) of a fund's performance over the past five years

Apply the estimated betas from this model to the realized factor returns (e.g., MKT_RF, SMB, HML, etc.) in month t to calculate a benchmark return for a fund in month t

Subtract this benchmark return from the fund's actual *before-expense* return in month t to calculate the fund's alpha for that month

IS BIGGER BETTER WHEN IT COMES TO MUTUAL FUND FEES?

Pool data across all funds and months

Rgress monthly fund alphas on monthly fund expense ratios

Key Question: Does the coefficient on the expense ratio equal ONE?

DO HIGHER EXPENSES MEAN HIGHER RETURNS?

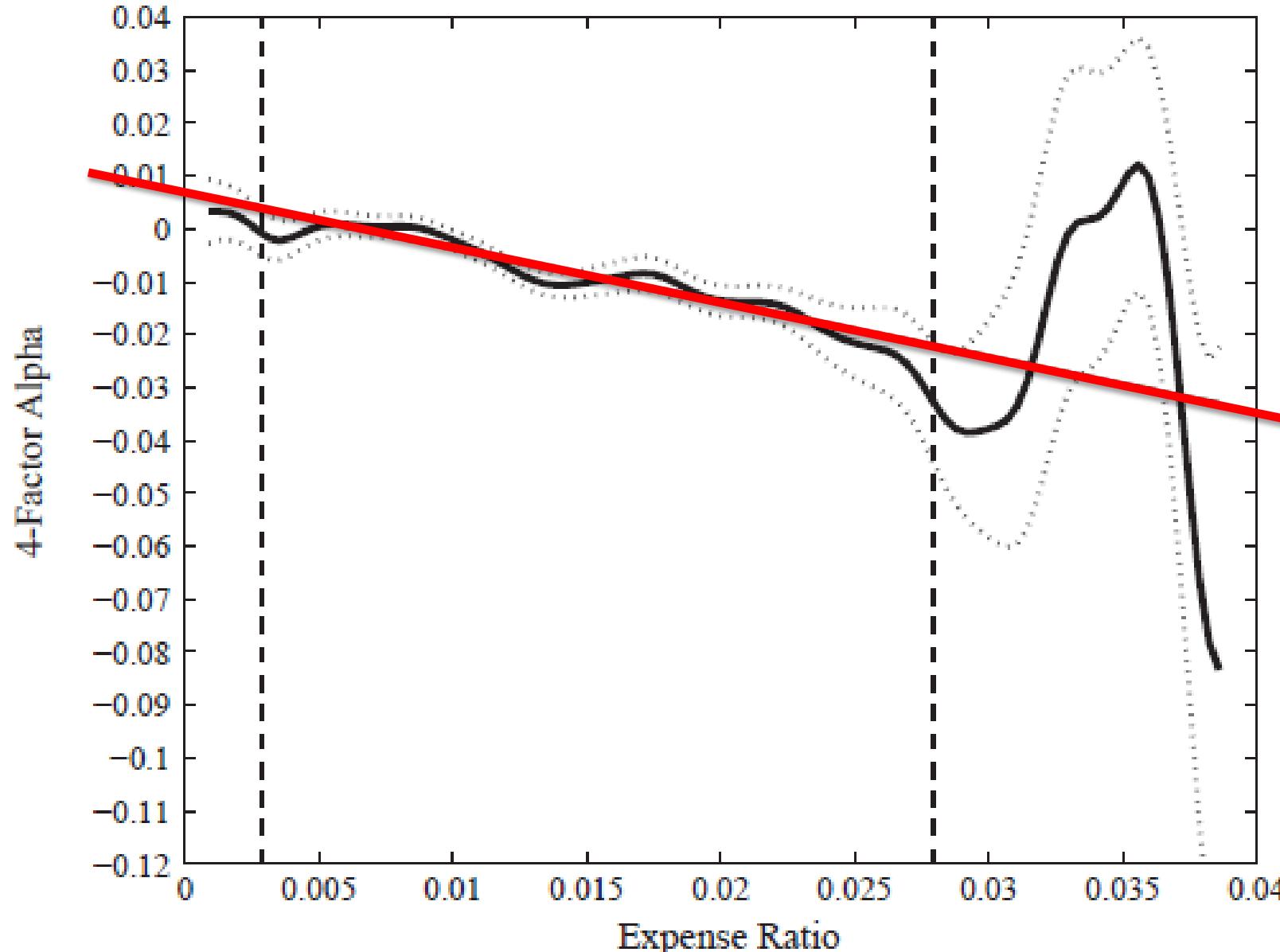
Table II
Before-Fee Risk-Adjusted Performance and Expense Ratios

Risk-adjusted Performance	Standard Errors	Coefficient	Adj. R^2
Carhart	Clustered by Time	−0.6284 ^{**,c} (0.2529)	10.07
Fama–French	Clustered by Time	−0.2076 ^c (0.2599)	9.43

“Carhart” = 4-Factor Model used to evaluated performance

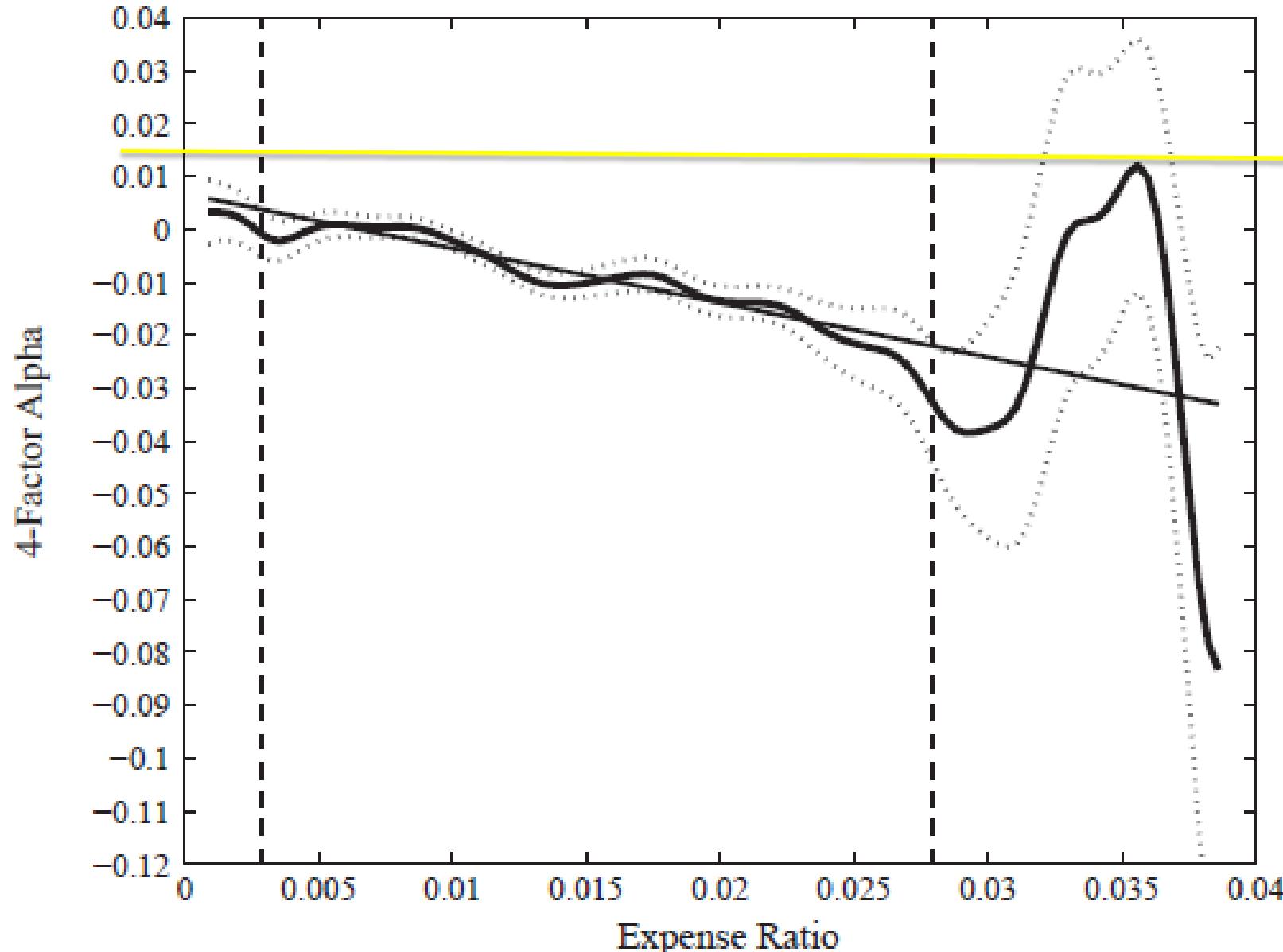
“Fama-French” = 3-Factor Model used to evaluate performance

PRE-FEE PERFORMANCE & EXPENSES (ANNUAL)



Source: Gil-Bazo & Ruiz-Verdú (2009, Figure 1)

PRE-FEE PERFORMANCE & EXPENSES (ANNUAL)



Source: Gil-Bazo & Ruiz-Verdú (2009, Figure 1)

ARE THEY EARNING THE EXTRA FEE THEY CHARGE?



Source: Image from Scott Weisbennner

**UNFORTUNATELY, NO, NOT ON AVERAGE!
SORRY GUYS, IT'S NOT PERSONAL, IT'S RESEARCH!**



Source: Image from Scott Weisbennner

REFERENCES

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Brokers and Fund Performance



MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS

Individuals invest in mutual funds through their DC pension plans

Individuals also invest in funds outside of these DC pension plans

Can purchase funds through brokers/advisors or directly from the fund company

Is there any difference in the gross and net performance of funds offered through the ***broker-channel*** vs. the ***direct-channel***?

MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS



Source: Moz (2009)

MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS



Source: US Geological Survey (2015)

FEES AND MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS

Investors pay various fees for investing in a mutual fund

There can be front-end or back-end loads (a distribution charge typically not present for directly-bought funds)

Annual fees as a percent of holdings

FEES AND MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS

Front- and back-end loads are a distribution-related charge that is typically not present for directly-sold funds

Annual fees are composed of both management fees and fees to compensate for marketing and distribution costs (i.e., **12b-1 fees**)

FEES AND MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS

Bergstresser, Chalmers, and Tufano (2009)
examine differences in the fees and
performance of directly-sold mutual funds
and broker-sold funds

Use data on mutual funds from 1996-2004

FUND PERFORMANCE & DISTRIBUTION CHANNEL



Table 3
Average annual fund performance by distribution channel

	All sample funds			
	Direct (D)	Broker (B)	Diff (D – B)	Test B = D
Panel A: Broad equity funds annual returns, asset-weighted and equal-weighted by share class, 1996–2004				
Asset-weighted				
Net Returns + 12b-1 Fees	6.542	6.116	0.426	[0.16]
Benchmark-Adj. + 12b-1	0.479	0.210	0.269	[0.02]
1-Factor Alpha + 12b-1	-0.241	-0.570	0.329	[0.06]
3-Factor Alpha + 12b-1	-0.013	-0.893	0.880	[0.00]
4-Factor Alpha + 12b-1	-0.997	-1.764	0.767	[0.00]
Equal-weighted				
Net Returns + 12b-1 Fees	10.541	8.042	2.499	[0.00]
Benchmark-Adj. + 12b-1	0.908	-0.031	0.939	[0.00]
1-Factor Alpha + 12b-1	1.073	-0.200	1.273	[0.00]
3-Factor Alpha + 12b-1	-0.388	-1.402	1.014	[0.00]
4-Factor Alpha + 12b-1	-1.656	-2.588	0.932	[0.00]

Source: Bergstresser, Chalmers, & Tufano (2009, Table 3)

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	Excluding index funds			
	Direct (D)	Broker (B)	Diff (D - B)	Test B = D
Panel A: Broad equity funds annual return				
Asset-weighted				
Net Returns + 12b-1 Fees	6.805	6.147	0.658	[0.03]
Benchmark-Adj. + 12b-1	0.442	0.212	0.230	[0.06]
1-Factor Alpha + 12b-1	-0.213	-0.575	0.362	[0.05]
3-Factor Alpha + 12b-1	-0.040	-0.905	0.865	[0.00]
4-Factor Alpha + 12b-1	-1.253	-1.787	0.534	[0.00]
Equal-weighted				
Net Returns + 12b-1 Fees	10.633	8.081	2.552	[0.00]
Benchmark-Adj. + 12b-1	0.831	-0.056	0.887	[0.00]
1-Factor Alpha + 12b-1	1.170	-0.209	1.379	[0.00]
3-Factor Alpha + 12b-1	-0.339	-1.443	1.104	[0.00]
4-Factor Alpha + 12b-1	-1.693	-2.649	0.956	[0.00]

Source: Bergstresser, Chalmers, & Tufano (2009, Table 3)

FEES/EXPENSES AND DISTRIBUTION CHANNEL

Table 5

Average fund expense ratios, sales charges and back-end loads

	Asset-weighted				Equal-weighted by fund share class			
	Direct (D)	Broker (B)	Diff (D – B)	Test (B = D)	Direct (D)	Broker (B)	Diff (D – B)	Test (B = D)
Annual distribution expenses (12b-1 fees)								
Broad equity	0.018	0.461	-0.443	[0.00]	0.088	0.610	-0.522	[0.00]
Bonds	0.008	0.443	-0.435	[0.00]	0.055	0.560	-0.505	[0.00]
Foreign equity	0.007	0.389	-0.382	[0.00]	0.064	0.629	-0.565	[0.00]
Money market	0.053	0.125	-0.072	[0.00]	0.088	0.235	-0.147	[0.00]
Annual nondistribution expenses (Expense ratio 12b-1)								
Broad equity	0.712	0.737	-0.024	[0.00]	1.085	1.062	0.023	[0.00]
Bonds	0.486	0.746	-0.260	[0.00]	0.706	0.834	-0.128	[0.00]
Foreign equity	1.023	0.921	0.102	[0.00]	1.354	1.470	-0.116	[0.00]
Money market	0.479	0.531	-0.052	[0.00]	0.607	0.603	0.004	[0.00]

Source: Bergstresser, Chalmers, & Tufano (2009, Table 5)

FEES/EXPENSES AND DISTRIBUTION CHANNEL

Table 5

Average fund expense ratios, sales charges and back-end loads

	Asset-weighted				Equal-weighted by fund share class			
	Direct (D)	Broker (B)	Diff (D – B)	Test (B = D)	Direct (D)	Broker (B)	Diff (D – B)	Test (B = D)
Front end loads								
Broad equity	0.436	3.627	-3.191	[0.00]	0.220	2.016	-1.796	[0.00]
Bonds	0.021	2.521	-2.501	[0.00]	0.056	1.691	-1.635	[0.00]
Foreign equity	0.087	4.258	-4.170	[0.00]	0.319	2.022	-1.704	[0.00]
Money market	0.008	0.020	-0.011	[0.00]	0.021	0.050	-0.029	[0.00]
Back end loads								
Broad equity	0.003	1.117	-1.114	[0.00]	0.037	1.595	-1.558	[0.00]
Bonds	0.000	1.287	-1.286	[0.00]	0.024	1.450	-1.426	[0.00]
Foreign equity	0.004	0.703	-0.699	[0.00]	0.018	1.591	-1.573	[0.00]
Money market	0.009	0.024	-0.015	[0.00]	0.050	0.376	-0.326	[0.00]

Source: Bergstresser, Chalmers, & Tufano (2009, Table 5)

FEES AND MUTUAL FUNDS OFFERED THROUGH DIFFERENT CHANNELS

Del Guercio and Reuter (2014) also find a big difference between the after-fee performance of directly-sold mutual funds and broker-sold funds (actively-managed stock funds)

After-fee fund returns are on average 1.4% worse (on an annual basis) for broker-sold funds relative to directly-sold funds

This difference is 1.2% (on an annual basis) after accounting for differences in risk across the two types of funds with a 4-Factor Model

COSTS AND BENEFITS OF FINANCIAL ADVISORS

Broker-sold funds charge considerably higher fees than funds you can purchase directly from the fund company (particularly in annual 12b-1 distribution fees and potential front-end loads)

Since broker-sold funds do not perform better than directly-sold funds BEFORE fees, on average, they underperform when analyzing performance AFTER fees

HOPE AN ANGRY MOB OF FINANCIAL ADVISORS IS NOT WAITING FOR ME!



Source: Asar (2015)



COSTS AND BENEFITS OF FINANCIAL ADVISORS

Financial advisors may offer benefits to households such as:

Starting to think about financial planning

Getting people to save regularly

Encouraging diversification

Thinking about asset allocation

Considering tax efficiency

COSTS AND BENEFITS OF FINANCIAL ADVISORS

Households should weigh these **costs** and **benefits**



Source: Asar (2015)

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Trends in Mutual Fund Industry



TRENDS IN MUTUAL FUNDS

Investment Company Institute or ICI reports in its *2016 Fact Book* on several trends in the U.S. mutual fund market:

Number of mutual funds

Indexation of mutual fund assets

Mutual fund expenses

TRENDS IN MUTUAL FUNDS

ICI (2016, p. 176) reports there are over **8,000 mutual funds** in the U.S.

Of the 8,116 mutual funds: 4,764 are equity funds and 2,871 are hybrid or bond funds

Of these 8,000+ mutual funds, ICI (2016, p. 95) reports that only **406 are index funds!**

TRENDS IN MUTUAL FUNDS

However, on an *asset-weighted* basis, the share of equity mutual investments in index funds has grown from **11% in 2002** to **22% in 2015**, as reported by ICI (2016, p. 46)

Asset-weighted index shares are 3% in 2002 and 9% in 2015 for hybrid and bond funds

What are trends in U.S. mutual fund expenses?

EXPENSE RATIO, *EQUITY* MUTUAL FUNDS

	2000	2015
ALL Equity Mutual Funds <i>(equally weighted)</i>	1.60%	1.31%

Source: Investment Company Institute (2016, Figure 5.3, p. 93)

EXPENSE RATIO, *EQUITY* MUTUAL FUNDS

	2000	2015
ALL Equity Mutual Funds <i>(equally weighted)</i>	1.60%	1.31%
ALL Equity Mutual Funds <i>(asset weighted)</i>	0.99%	0.68%

Source: Investment Company Institute (2016, Figure 5.3 on p. 93)

EXPENSE RATIO, BY TYPE OF *EQUITY MFUND*

	2000	2015
ALL EQUITY Mutual Funds (asset weighted)	0.99%	0.68%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

EXPENSE RATIO, BY TYPE OF *EQUITY MFUND*

	2000	2015
ALL EQUITY Mutual Funds (asset weighted)	0.99%	0.68%
<i>Actively-Managed Funds</i> (asset weighted)	1.06%	0.84%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

EXPENSE RATIO, BY TYPE OF *EQUITY MFUND*

	2000	2015
ALL EQUITY Mutual Funds (asset weighted)	0.99%	0.68%
<i>Actively-Managed</i> Funds (asset weighted)	1.06%	0.84%
<i>Index</i> Funds (asset weighted)	0.27%	0.11%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

EXPENSE RATIO, BY TYPE OF *BOND* MFUND

	2000	2015
ALL BOND Mutual Funds (asset weighted)	0.76%	0.54%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

EXPENSE RATIO, BY TYPE OF *BOND* MFUND

	2000	2015
ALL BOND Mutual Funds (asset weighted)	0.76%	0.54%
<i>Actively-Managed</i> Funds (asset weighted)	0.78%	0.60%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

EXPENSE RATIO, BY TYPE OF *BOND MFUND*

	2000	2015
ALL BOND Mutual Funds (asset weighted)	0.76%	0.54%
<i>Actively-Managed</i> Funds (asset weighted)	0.78%	0.60%
<i>Index</i> Funds (asset weighted)	0.21%	0.10%

Source: Investment Company Institute (2016, Figures 5.1 on p. 91 and Figure 5.6 on p. 97)

TRENDS IN MUTUAL FUNDS

ICI (2016, p. 103-104) reports that less money is being invested in funds with front-end loads over the period 2006-2015

Also, the front-end load *actually paid* relative to the maximum that *could be charged* (which is typically 5% of the initial investment) has fallen from 1990-2015

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Introduction to Search for Alpha



SEARCH FOR ALPHA

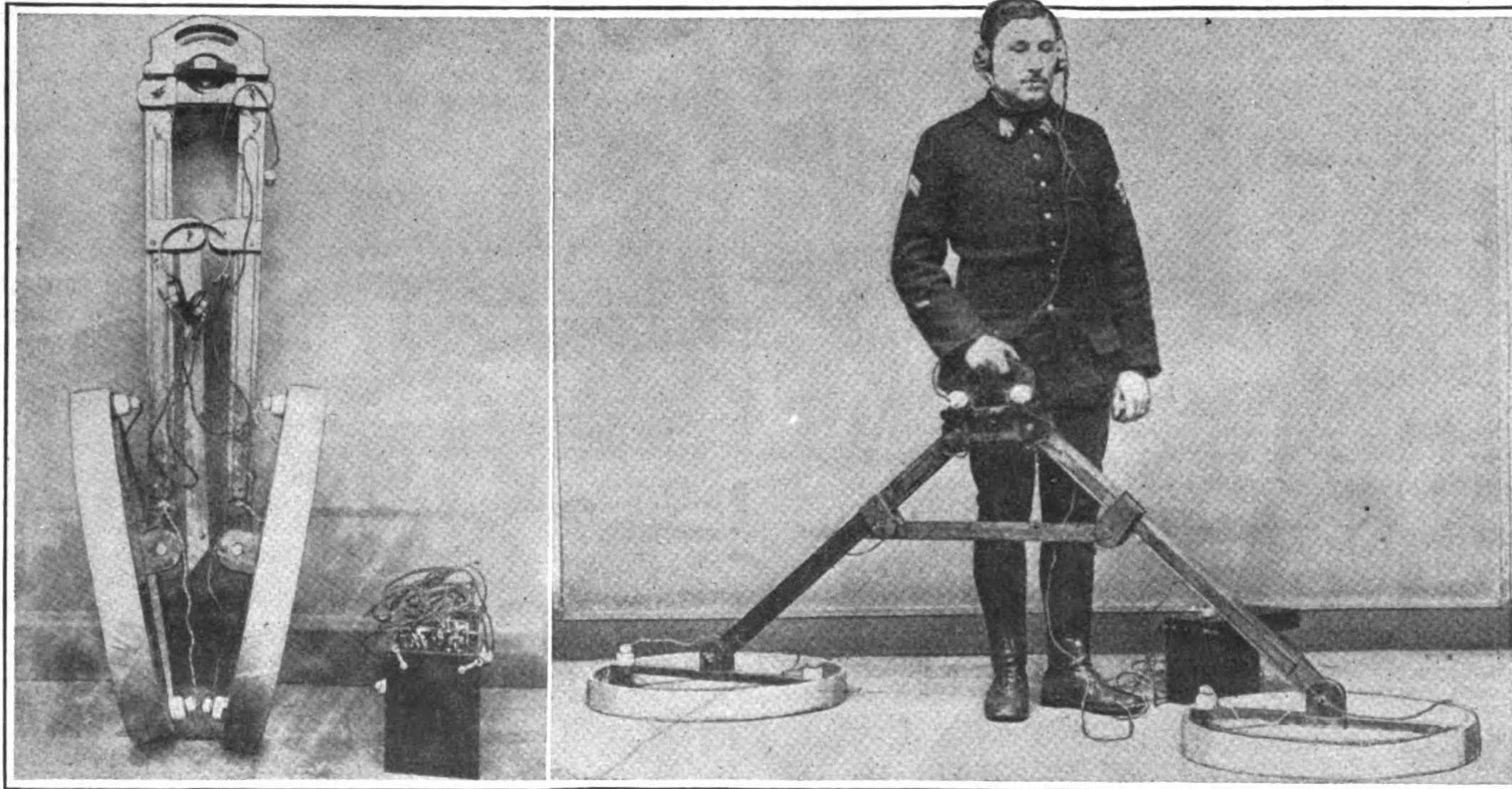
Are there any parts of mutual fund portfolios that *a priori* could be more likely to reflect good information (and *ex post* seem to yield positive ALPHA)?

Are there any types of mutual funds that might perform better than others?

Are there any firms that are complicated enough so that information is fully processed with a bit of a lag?

Are there modern sources of information that may help when “searching for ALPHA”?

SEARCH FOR ALPHA



Source: Honoré (1919)

SEARCH FOR ALPHA



Source: Doepler (1905)

SEARCH FOR ALPHA

Mutual Fund Disclosure

Mutual Funds and Local Investments

Information Networks and Performance

Closet Indexing & Performance Persistence

Valuing Complicated Firms and Exploiting
Inattention

Potential Modern Sources of Information

SEARCH FOR ALPHA

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**Valuing Complicated Firms and Exploiting
Inattention**

Potential Modern Sources of Information

SEARCH FOR ALPHA

Mutual Fund Disclosure

Mutual Funds and Local Investments

Information Networks and Performance

Closet Indexing & Performance Persistence

Valuing Complicated Firms and Exploiting
Inattention

Potential Modern Sources of Information

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Mutual Fund Disclosure



MUTUAL FUNDS: ANY GOOD INFO?

Strong evidence that actively-managed equity mutual funds, on average, underperform their benchmark after fees

Do not seem to outperform their benchmark before fees

This does NOT imply that there are not any parts of mutual fund holdings that perform well on average

MUTUAL FUNDS: ANY GOOD INFO?

Key question: Can you identify *a priori* any parts of the mutual fund manager's portfolio that are more likely to be based on good information than the typical holding?

DATA ON MUTUAL FUND HOLDINGS

Mutual funds disclose holdings on a quarterly basis to the SEC

These reports are required to be filed with the SEC within 60 days of the end of the quarter

Thus, a little more than 2 months after the end of the prior quarter, the public is aware what a mutual fund was holding at the end of the prior quarter

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION

Based on the empirical research presented earlier in Module 4, is a strategy that mimics ALL of the holdings reported by mutual funds in their quarterly report likely to yield positive ALPHA to these copy-cat investors?

DISCUSSION OF QUESTION

Based on the empirical research presented earlier in Module 4, is a strategy that mimics ALL of the holdings reported by mutual funds in their quarterly report likely to yield positive ALPHA to these copy-cat investors?

NO!

EXAMPLE OF MUTUAL FUND HOLDINGS REPORT

Form N-Q - Quarterly Schedule of portfolio holdings of management investment companies

Filing Date

2016-02-26

Period of Report

2015-12-31

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-1193

Fidelity Magellan Fund

(Exact name of registrant as specified in charter)

Quarterly Holdings Report
for

Fidelity® Magellan® Fund

December 31, 2015

Sources: US Securities and Exchange Commission (2016a)
US Securities and Exchange Commission (2016b)

EXAMPLE OF MUTUAL FUND HOLDINGS REPORT

Investments December 31, 2015 (Unaudited)

Showing Percentage of Net Assets

Common Stocks - 97.8%

	Shares	Value (000s)
CONSUMER DISCRETIONARY - 14.4%		
Automobiles - 1.0%		
General Motors Co.	3,104,500	\$105,584
Tesla Motors, Inc. (a)	198,300	47,594
		<hr/> 153,178
Diversified Consumer Services - 1.2%		
2U, Inc. (a)(b)	580,865	16,253
Service Corp. International	3,619,532	94,180
ServiceMaster Global Holdings, Inc. (a)	2,031,300	79,708
		<hr/> 190,141
Hotels, Restaurants & Leisure - 2.1%		
Domino's Pizza, Inc.	376,500	41,886
Hilton Worldwide Holdings, Inc.	1,789,500	38,295
Papa John's International, Inc.	763,332	42,647
Starbucks Corp.	2,618,100	157,165
Wyndham Worldwide Corp.	656,600	47,702

Source: US Securities and Exchange Commission (2016b)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS

Suppose you have downloaded all of these end-of-quarter reports for all actively-managed mutual funds.

What holdings would you especially wish to copy going forward?

In other words, which holdings are most likely to reflect good information on the part of the mutual fund manager?

DISCUSSION OF QUESTIONS



Source: Pixabay/Peggy Marco (n.d.)

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Mutual Funds and Local Investments



SEARCHING FOR ALPHA!



Source: Pixabay/Peggy Marco (n.d.)

MUTUAL FUNDS AND LOCAL INVESTMENTS

Are mutual fund investors more informed about the stocks of companies located in their backyard than those located farther away?

For some types of firm information, investors nearby the firm may have an informational edge

Or maybe local investments don't outperform if they are motivated by familiarity bias

MUTUAL FUNDS AND LOCAL INVESTMENTS

Coval and Moscovitz (2001) study the geography of mutual fund investments

Examine quarterly mutual fund holdings from 1975-1994

Define a holding as local if the firm's headquarters is located within 100 kilometers of the firm's headquarters

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS

Suppose some firm-relevant information is first available locally. Is there any useful information to be had from observing what stocks are NOT held by local mutual funds?

If one exists, are mutual funds more likely to have a local informational edge on the stocks of small firms or large firms?

DISCUSSION OF QUESTIONS

Suppose some firm-relevant information is first available locally. Is there any useful information to be had from observing what stocks are NOT held by local mutual funds?

If one exists, are mutual funds more likely to have a local informational edge on the stocks of small firms or large firms?

MUTUAL FUNDS AND LOCAL INVESTMENTS

Coval and Moscovitz (2001) study the geography of mutual fund investments

Examine the performance of a mutual fund's ***local*** stock holdings relative to more ***distant*** holdings

Examine the performance of local stocks ***not held*** by a mutual fund

Examine the performance of local stock holdings that have ***increased*** in size versus those that have ***fallen*** in size (as measured by number of shares)

MUTUAL FUNDS AND LOCAL INVESTMENTS

Coval and Moscovitz (2001) study the geography of mutual fund investments

Measure performance of the holding starting from the ***quarter-end date*** as well as starting ***3 months after*** the quarter-end date

Consider how the performance of stocks held by local mutual funds ***varies by firm size***

t-statistics are presented in parentheses below the various annual returns (look for *t*-statistics with magnitude of at least 2)

MUTUAL FUNDS AND LOCAL INVESTMENTS

TABLE I
PERFORMANCE OF LOCAL FUND POSITIONS (Percentage Annualized Returns)
A. LOCAL BIAS AND RAW RETURNS OF LOCAL vs. DISTANT HOLDINGS

ASSETS RESIDING LOCALLY			RAW EXCESS RETURNS		
% Held ≤ 100 km	% Market ≤ 100 km	Difference (3)	Local: \tilde{R}^L (4)	Distant: \tilde{R}^D (5)	$\tilde{R}^L - \tilde{R}^D$ (6)
1975–94	6.95	6.16	.79 (10.60)	8.71 [.36]	6.04 [.42] 2.67 (3.26)

B. RISK-ADJUSTED RETURNS OF LOCAL FUND HOLDINGS

	Local: \tilde{R}^L (1)	Distant: \tilde{R}^D (2)	$\tilde{R}^L - \tilde{R}^D$ (3)	Local, Not Held:		
				\tilde{R}^{LN} (4)	$\tilde{R}^L - \tilde{R}^{LN}$ (5)	$\tilde{R}^{L+} - \tilde{R}^{L-}$ (6)
1975–94	1.84 [.33]	.66 [.22]	1.18 (3.49)	-1.17 [-.29]	3.01 (7.55)	1.24 (2.87)

Source: Coval & Moskowitz (2001, Table 1)

MUTUAL FUNDS AND LOCAL INVESTMENTS

TABLE I

PERFORMANCE OF LOCAL FUND POSITIONS (Percentage Annualized Returns)

A. LOCAL BIAS AND RAW RETURNS OF LOCAL vs. DISTANT HOLDINGS

ASSETS RESIDING LOCALLY			RAW EXCESS RETURNS		
% Held ≤100 km (1)	% Market ≤100 km (2)	Difference (3)	Local: \tilde{R}^L (4)	Distant: \tilde{R}^D (5)	$\tilde{R}^L - \tilde{R}^D$ (6)
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B. RISK-ADJUSTED RETURNS OF LOCAL FUND HOLDINGS

	Local: \tilde{R}^L (1)	Distant: \tilde{R}^D (2)	$\tilde{R}^L - \tilde{R}^D$ (3)	Local, Not Held:		
				\tilde{R}^{LN} (4)	$\tilde{R}^L - \tilde{R}^{LN}$ (5)	$\tilde{R}^{L+} - \tilde{R}^{L-}$ (6)
1975–94	1.84 [.33]	.66 [.22]	1.18 (3.49)	-1.17 [-.29]	3.01 (7.55)	1.24 (2.87)

Source: Coval & Moskowitz (2001, Table 1)

MUTUAL FUNDS AND LOCAL INVESTMENTS

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ASSETS RESIDING LOCALLY			RAW EXCESS RETURNS		
% Held ≤ 100 km	% Market ≤ 100 km	Difference	Local: \tilde{R}^L	Distant: \tilde{R}^D	$\tilde{R}^L - \tilde{R}^D$
(1)	(2)	(3)	(4)	(5)	(6)
1975–94	6.95	6.16	.79 (10.60)	8.71 [.36]	6.04 [.42] 2.67 (3.26)

B. RISK-ADJUSTED RETURNS OF LOCAL FUND HOLDINGS

	Local: \tilde{R}^L	Distant: \tilde{R}^D	$\tilde{R}^L - \tilde{R}^D$	Local, Not Held: \tilde{R}^{LN}	$\tilde{R}^L - \tilde{R}^{LN}$	$\tilde{R}^{L+} - \tilde{R}^{L-}$
	(1)	(2)	(3)	(4)	(5)	(6)
1975–94	1.84 [.33]	.66 [.22]	1.18 (3.49)	-1.17 [-.29]	3.01 (7.55)	1.24 (2.87)

Source: Coval & Moskowitz (2001, Table 1)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION 1 OF 2

Suppose, like the Fidelity Magellan example, a mutual fund reports its holdings for December 31, 2015 on February 26, 2016.

On January 1, 2016, only Fidelity Magellan knows its 12/31/2015 holdings.

On April 1, 2016, the Fidelity Magellan holdings on 12/31/2015 are public information.

Suppose the Magellan holdings as of 12/31/2015 predict stock returns from **January to March 2016**. Is this a violation of market efficiency?

QUESTION 2 OF 2

Suppose, like the Fidelity Magellan example, a mutual fund reports its holdings for December 31, 2015 on February 26, 2016.

On January 1, 2016, only Fidelity Magellan knows its 12/31/2015 holdings.

On April 1, 2016, the Fidelity Magellan holdings on 12/31/2015 are public information.

Suppose the Magellan holdings as of 12/31/2015 predict stock returns from **April to June 2016**. Is this a violation of market efficiency?

MUTUAL FUNDS AND LOCAL INVESTMENTS

TABLE I
PERFORMANCE OF LOCAL FUND POSITIONS (Percentage Annualized Returns)
A. LOCAL BIAS AND RAW RETURNS OF LOCAL vs. DISTANT HOLDINGS

ASSETS RESIDING LOCALLY			RAW EXCESS RETURNS		
% Held ≤ 100 km	% Market ≤ 100 km	Difference (3)	Local: \tilde{R}^L (4)	Distant: \tilde{R}^D (5)	$\tilde{R}^L - \tilde{R}^D$ (6)
1975–94	6.95	6.16	.79 (10.60)	8.71 [.36]	6.04 [.42] 2.67 (3.26)
B. RISK-ADJUSTED RETURNS OF LOCAL FUND HOLDINGS					
Local: \tilde{R}^L (1)	Distant: \tilde{R}^D (2)	$\tilde{R}^L - \tilde{R}^D$ (3)	Local, Not Held: \tilde{R}^{LN} (4)	$\tilde{R}^L - \tilde{R}^{LN}$ (5)	$\tilde{R}^{L+} - \tilde{R}^{L-}$ (6)
1975–94	1.84 [.33]	.66 [.22]	1.18 (3.49)	-1.17 [-.29]	3.01 (7.55) 1.24 (2.87)

Source: Coval & Moskowitz (2001, Table 1)

TEST OF SKILL VS. MARKET EFFICIENCY

TABLE 2
REPORTING LAGS AND LOCAL FUND PERFORMANCE (Percentage Annualized Returns)

	LAGS BETWEEN REPORTED HOLDINGS AND RISK-ADJUSTED RETURNS			
	1 Month	3 Months	6 Months	12 Months
$\tilde{R}^L - \tilde{R}^D$	1.06 (3.13)	1.01 (2.41)	.01 (.04)	-.50 (-1.94)
$\tilde{R}^L - \tilde{R}^{LN}$	3.05 (7.55)	2.86 (6.23)	1.51 (2.22)	.60 (.91)
$\tilde{R}^{L+} - \tilde{R}^{L-}$	1.01 (2.11)	.90 (1.88)	.13 (.15)	-.20 (-.54)

NOTE.—Risk-adjusted returns of the difference between local and distant fund portions, the difference between local stocks being held and local stocks not being held by funds, and the difference between the local buy and local sell portfolios are reported using various lags between the reported fund holdings and returns over the January 1975 to December 1994 sample period. *t*-statistics are in parentheses. Reported returns are expressed in annual percentage rates.

DIGGING DEEPER INTO LOCAL MFUND HOLDINGS

TABLE 3
LOCAL FUND PERFORMANCE FOR VARIOUS DEGREES OF LOCAL BIAS (Percentage Annualized Returns)

QUINTILE	Assets Residing Locally				Risk-Adjusted Returns				
	% Held	% Market	Difference		\tilde{R}^L	\tilde{R}^P	$\tilde{R}^L - \tilde{R}^P$	\tilde{R}^{LN}	$\tilde{R}^L - \tilde{R}^{LN}$
Q1	1.69	10.47	-8.78		1.07	.98	.09	-1.23	2.29
			(-64.74)		[.15]	[.17]	(.02)	[-.27]	(3.99)
Q2	1.33	4.09	-2.76		-.28	1.23	-1.50	-.01	-.27
			(-65.48)		[-.06]	[.25]	(-3.53)	[-.00]	(-.57)
Q3	1.83	3.13	-1.30		.92	.65	.27	.11	.81
			(-56.10)		[-.19]	[.14]	(.53)	[.02]	(1.35)
Q4	5.81	4.62	1.19		3.54	.36	3.18	-1.87	5.41
			(14.71)		[.40]	[.10]	(5.71)	[-.27]	(8.49)
Q5	22.54	8.67	13.86		1.66	.37	1.28	-2.48	4.14
			(53.81)		[.19]	[.09]	(2.27)	[-.26]	(5.26)
Q5 - Q1	20.85	-1.79	22.04		.59	-.01	1.19	-1.20	1.89
			(77.98)		[.05]	[-.08]	(2.16)	[-.14]	(1.86)

Source: Coval & Moskowitz (2001, Table 3)

STOCK RETURNS AND MFUND LOCAL BIAS

TABLE 6
LOCAL OWNERSHIP SORTED PORTFOLIOS (Percentage Annualized Returns)

	RAW RETURNS			RISK-ADJUSTED RETURNS	
	LO Q1		LO Q5	Daniel et al.	Four-Factor α
	Q5-Q1	Q5-Q1	Q5-Q1	Q5-Q1	Q5-Q1
Unconditional	7.03 (3.43)	9.59 (4.52)	2.56 (2.24)	1.10 (1.74)	1.12 (1.86)
	Size (Market Capitalization)				
Small	13.62 (3.77)	17.80 (4.59)	4.18 (2.22)	3.00 (2.18)	3.56 (3.23)
Medium	10.57 (3.46)	12.86 (4.05)	2.29 (1.74)	-1.14 (-1.05)	1.90 (1.32)
Large	8.22 (3.56)	8.25 (4.06)	.03 (.09)	-.58 (-1.09)	-.61 (-1.11)

Source: Coval & Moskowitz (2001, Table 6)

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Source: Coval & Moskowitz (2001, Table 6)

FURTHER WORK ON GEOGRAPHY OF INVESTMENT

Baik, Kang, and Kim (2010) also study the role and performance of geographically-close institutional investors in the stock market

They focus on all institutional investors that disclose their quarterly holdings with the SEC (not just mutual funds)

Institutions managing more than \$100M in U.S. equities have to file a quarterly report of holdings with the SEC

Baik, Kang, and Kim (2010) find that both the level and change of local institutional ownership in a firm's stock predict positive movements in the firm's stock

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Information Networks and Performance

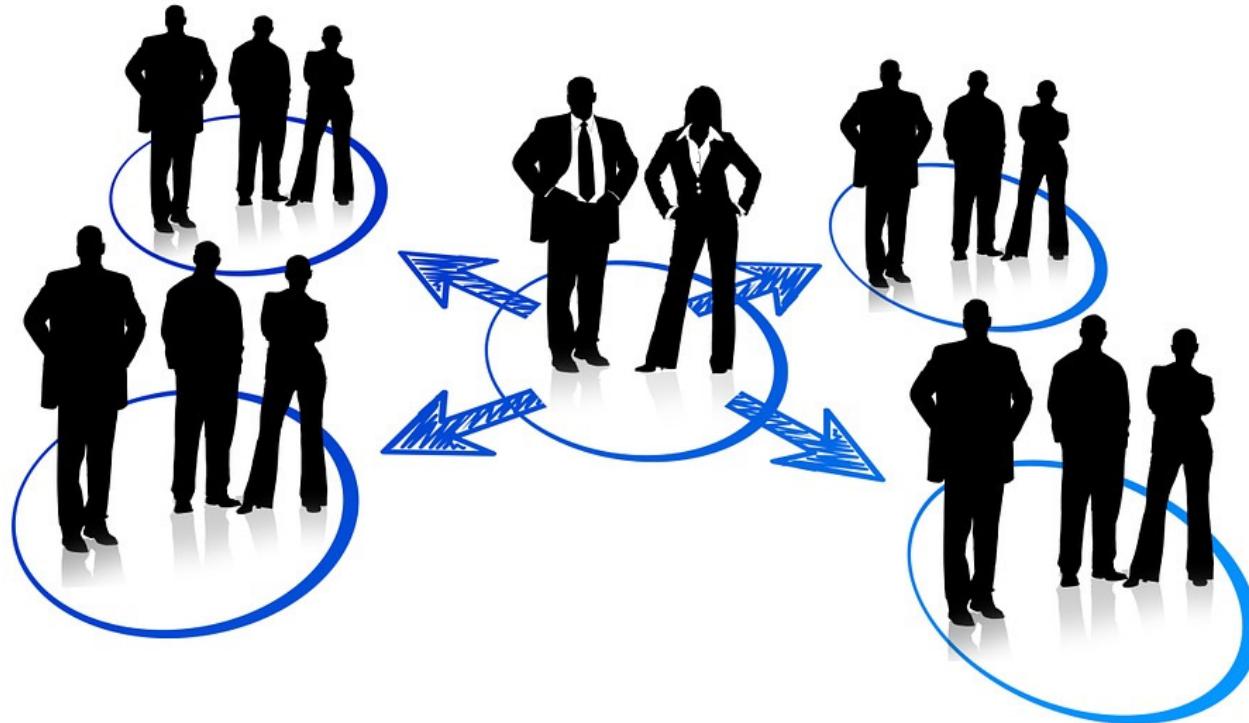


SEARCHING FOR ALPHA!



Source: Pixabay/Peggy Marco (n.d.)

CONNECTIONS ... HOW IMPORTANT?



Source: Pixabay/geralt (n.d.)

MUTUAL FUNDS AND NETWORK CONNECTIONS

How does information get transferred in security markets?

In particular, how important are connections in the asset-management industry?

Cohen, Frazzini, and Malloy (2008) tackle these questions

Examine the performance of mutual fund holdings that represent a connection between the fund manager and a corporation relative to those holdings that do not

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION

How would you measure a potential connection between a mutual fund manager and the top leadership of a publicly-traded firm?

DISCUSSION OF QUESTION

How would you measure a potential connection between a mutual fund manager and the top leadership of a publicly-traded firm?

MUTUAL FUNDS AND CONNECTIONS

Check educational background of mutual fund manager

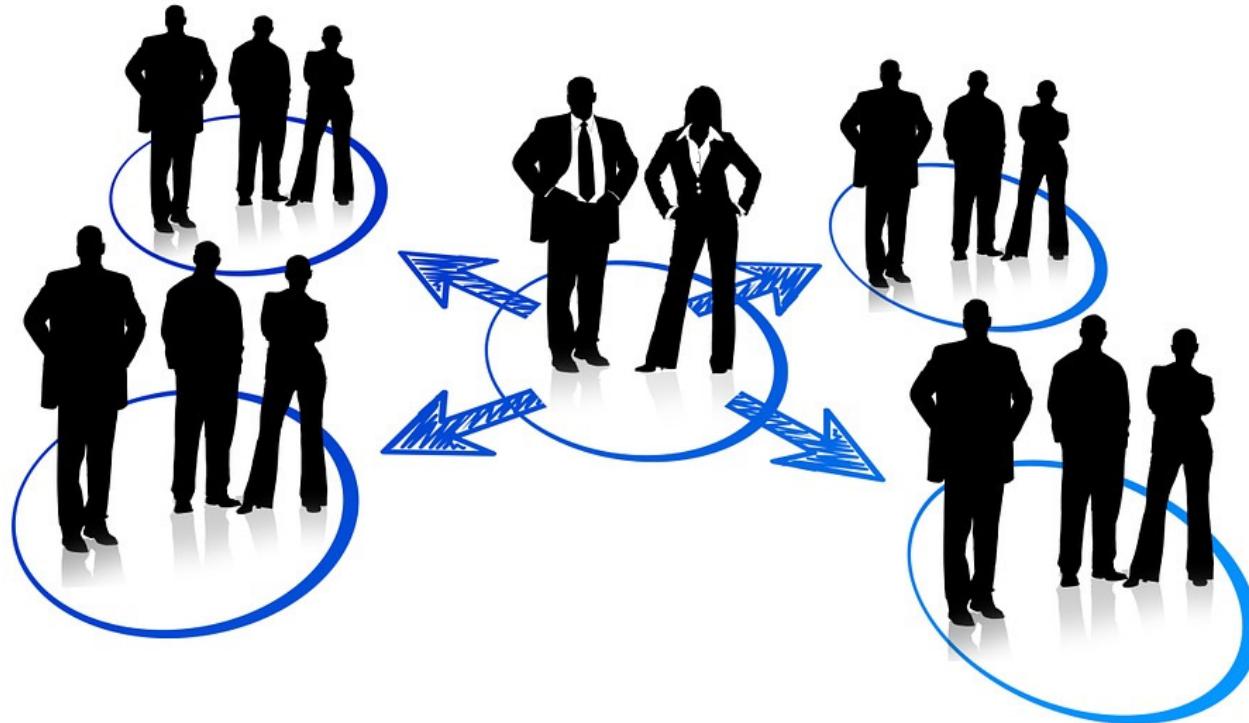
Check educational background of top executives at firms (CEO, CFO, and Chairman of Board)

MUTUAL FUNDS AND CONNECTIONS

Do mutual fund managers get good information through their educational network?

Simple strategy – don't follow all stock picks of mutual fund manager, just those driven by an educational network!

CONNECTIONS ... HOW IMPORTANT?



Source: Pixabay/geralt (n.d.)

MUTUAL FUNDS AND CONNECTIONS

Mutual fund holdings are reported on a quarterly basis, and are required to be filed with the SEC within 60 days of the end of the quarter

At the beginning of each calendar quarter, stocks in each mutual fund portfolio (based on the most recent SEC filing) are categorized by whether there is an educational connection between the mutual fund manager and the firm's leadership

MUTUAL FUNDS AND CONNECTIONS

Measure the return on these holdings over the next quarter (3 months)

Repeat the procedure next quarter using the latest SEC filings, etc.

MUTUAL FUNDS AND CONNECTIONS

Cohen, Frazzini, and Malloy (2008) do this by examining mutual fund holdings from 1990-2006 for actively-managed stock funds

An example of timing:

Fund holdings as of 12/31/2005 are reported to SEC by end of February 2006

Examine return to the 12/31/2005 holdings over the period 4/1/2006 to 6/30/2006

MUTUAL FUNDS AND CONNECTIONS

Tables report returns on an ***annual basis*** in percentage points for various types of portfolios of mutual fund holdings, with the *t*-statistic of the return in parentheses

Conventionally, look for *t*-statistic greater than 2 to indicate a significant result

MUTUAL FUND CONNECTIONS, PERFORMANCE



Value-weighted annual return

Panel A

Connected holdings versus non-connected holdings

	% of Assets	Raw return		DGTW-adjusted		4-factor alpha	
All holdings	100.00	12.77 (2.90)		0.22 (0.36)		-0.40 -(0.76)	
Not connected holdings	93.72	12.69 (2.89)		0.22 (0.37)		-0.47 -(0.87)	
		Connected holdings	L/S	Connected holdings	L/S	Connected holdings	L/S
CONNECTED1	6.28	15.33 (3.22)	2.64 (2.60)	1.82 (1.89)	1.61 (1.92)	2.01 (2.26)	2.49 (3.06)
<i>Same School</i>							
CONNECTED2	2.86	15.49 (3.28)	2.80 (2.62)	1.89 (2.01)	1.67 (1.97)	2.07 (2.24)	2.54 (2.97)
<i>Same School, same degree</i>							
CONNECTED3	0.46	18.37 (3.71)	5.69 (3.74)	4.21 (2.52)	4.00 (2.74)	5.39 (3.28)	5.87 (3.74)
<i>Same School, year overlap</i>							
CONNECTED4	0.22	20.53 (4.26)	7.84 (4.07)	5.91 (2.83)	5.69 (2.92)	8.00 (3.51)	8.47 (3.83)
<i>Same School, same degree, year overlap</i>							

Source: Cohen, Frazzini, & Malloy (2008, Table 3)

MUTUAL FUND CONNECTIONS, PERFORMANCE



Value-weighted annual return

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Not connected holdings	93.72	12.69 (2.89)	0.22 (0.37)		-0.47 -(0.87)	
		Connected holdings	L/S	Connected holdings	L/S	Connected holdings
CONNECTED1	6.28	15.33 (3.22)	2.64 (2.60)	1.82 (1.89)	1.61 (1.92)	2.01 (2.26)
<i>Same School</i>						2.49 (3.06)
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<i>Same School</i>		(3.22)	(2.60)	(1.89)	(1.92)	(2.26)	(3.06)
CONNECTED2	2.86	15.49	2.80	1.89	1.67	2.07	2.54
<i>Same School, same degree</i>		(3.28)	(2.62)	(2.01)	(1.97)	(2.24)	(2.97)
CONNECTED3	0.46	18.37	5.69	4.21	4.00	5.39	5.87
<i>Same School, year overlap</i>		(3.71)	(3.74)	(2.52)	(2.74)	(3.28)	(3.74)
CONNECTED4	0.22	20.53	7.84	5.91	5.69	8.00	8.47
<i>Same School, same degree, year overlap</i>		(4.26)	(4.07)	(2.83)	(2.92)	(3.51)	(3.83)

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MUTUAL FUND CONNECTIONS, PERFORMANCE



Value-weighted annual return

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MUTUAL FUND CONNECTIONS, ROBUSTNESS

Baseline difference in performance of CONNECTED4 and Non-CONNECTED holdings is 7.8% per year

Look at this differential for various subsamples:

Panel A: sub periods and firm characteristics		Panel B: Academic institutions	
Large cap stocks	7.27	Top 5 most connected	7.77
Above NYSE median	(3.66)		(4.11)
Small cap stocks	8.92	Not Top 5 most connected	7.74
Below NYSE median	(0.88)		(4.03)
Top 500 largest firms	6.06	Top 25 highest SAT score	7.82
	(3.13)		(3.95)
1990 – 1997	4.78	Not top 25 highest SAT score	7.83
	(2.10)		(4.22)
1998 – 2006	10.56	School-adjusted return	5.11
	(3.73)		(3.42)
Pre-Reg FD (through 2000)	8.51	Non-ivy league	7.04
	(3.16)		(4.12)
Post-Reg FD (2001-onwards)	6.61	Ivy league	7.79
	(2.58)		(4.15)
Only CEO connections	6.48	Only MBA degrees	9.90
	(1.99)		(4.47)

Source: Cohen, Frazzini, & Malloy (2008, Table 6)

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MUTUAL FUND CONNECTIONS, ROBUSTNESS

*Baseline difference in performance of CONNECTED4 and Non-CONNECTED holdings is 7.8% per year
Look at this differential for various subsamples:*

Panel C: fund characteristics

Aggressive growth funds	7.49 (1.56)	Single portfolio manager	6.80 (3.55)
Growth funds	6.14 (2.41)	Multiple portfolio manager	11.06 (4.23)
Growth and income funds	8.14 (3.80)	High performing fund Above median returns	7.19 (3.27)
Large cap funds	7.91 (4.09)	Low performing fund Below median returns	8.36 (2.66)
Small cap funds	2.94 (1.06)	Distant holdings >100Km, 1994 – 2006	8.80 (3.77)

EVALUATING RETURN TO CONNECTIONS

Let's consider the annual **Sharpe Ratio** of mutual funds and their holdings, 1990-2006

The average Sharpe Ratio across *mutual funds in the sample (including all their holdings)* is **0.52**, very similar to that for the whole market

The average Sharpe Ratio across *funds if only invested in CONNECTED4 stocks* is **0.41**
(because of the risk of investing in 1 or 2 stocks)

EVALUATING RETURN TO CONNECTIONS

Let's consider the annual **Sharpe Ratio** of mutual funds and their holdings, 1990-2006

The average Sharpe Ratio across *mutual funds in the sample (including all their holdings)* is **0.52**, very similar to that for the whole market

However, the Sharpe Ratio of the **aggregated portfolio of CONNECTED 4 stocks** is **0.83** (because this is a diversified portfolio)

JUST REMEMBER ...



Source: Flickr/bluefieldphotos bp (2014)

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Closet Indexing and Performance Persistence



SOMETIMES, LOOKING FOR GOOD MUTUAL FUND ...



Source: Imperial War Museum (1942)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION

I

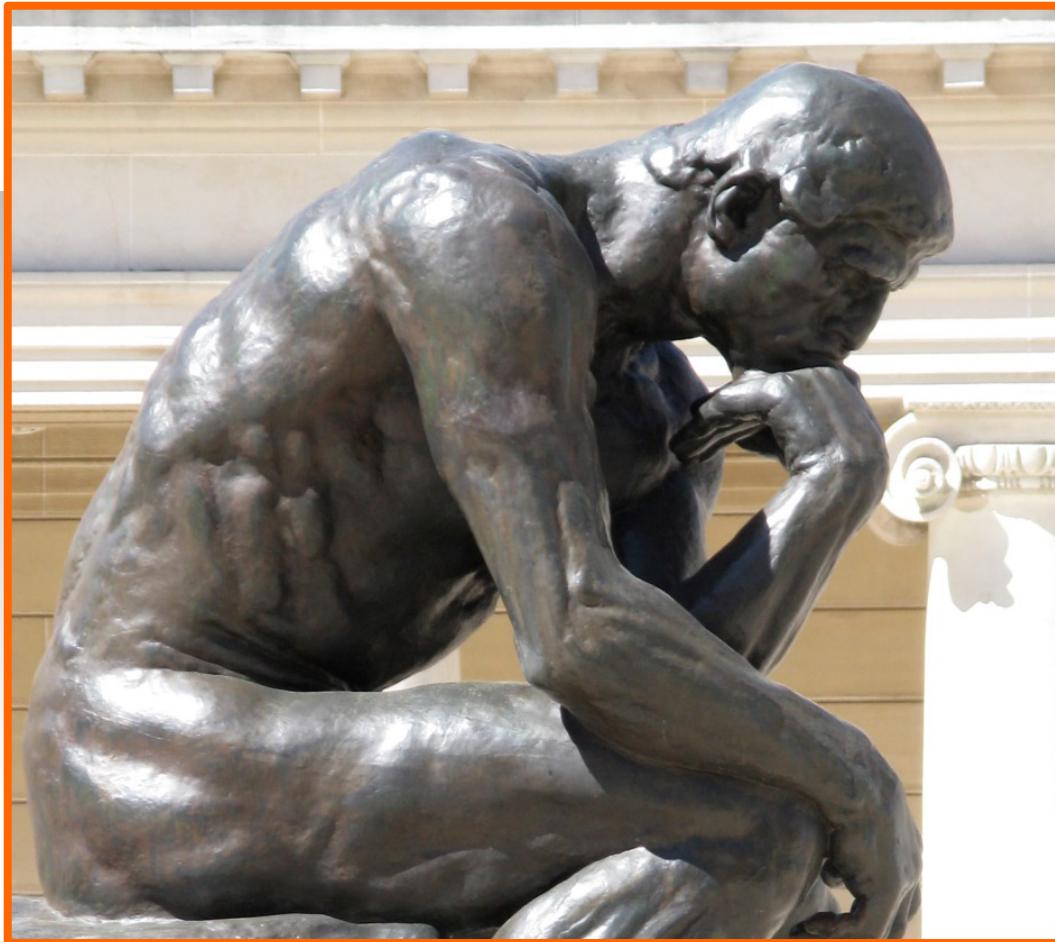
What is this guy doing?

SOMETIMES, LOOKING FOR GOOD MUTUAL FUND ...



Source: Imperial War Museum (1942)

PAUSE, THINK, AND ANSWER!



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QUESTION

Suppose you are paying a 1.5% fee for your mutual fund.

The R-squared of this mutual fund is 98% in a 3-Factor Model.

What should your reaction be?

DISCUSSION OF QUESTION

Suppose you are paying a 1.5% fee for your mutual fund.

The R-squared of this mutual fund is 98% in a 3-Factor Model.

What should your reaction be?

MUTUAL FUNDS AND R-SQUARED

Can think of $(1 - R^2)$ as representing how active your fund manager is

If your supposedly actively-managed fund has an R^2 very close to one, then it is really a “closet indexer”

And you don't want to pay high fees for an index fund!

Can we learn anything about future fund performance by its recent **R-squared**?

MUTUAL FUNDS AND R-SQUARED

Amihud and Goyenko (2013) study this over period 1990-2010

For each mutual fund for each month, estimate a 4-Factor model of performance over the past 24 months

From this regression, get a **R-squared** and an **alpha** for the fund

One can then rank funds by their estimated R-squared (or alpha) over the past 24 months, and see how these funds perform over the next month

MUTUAL FUNDS AND R-SQUARED

Is there any predictability of fund performance by the past **ALPHA** of the fund?

Is there any predictability of fund performance by the past **R-squared** of the fund?

Report returns on an annualized basis.

ONLY EXAMINE ACTIVELY-MANGED STOCK FUNDS!

MUTUAL FUNDS AND R-SQUARED

Table 2

Fund portfolio *alpha*, based on sorting on lagged R^2 and *alpha*

Panel A: Results using net returns

<i>Alpha</i> _{t-1}	R^2_{t-1}						
	Low	2	3	4	High	All	Low-high
Low	-1.548 (1.57)	-1.606* (1.78)	-2.319*** (2.95)	-2.625*** (3.83)	-2.451*** (4.17)	-2.164*** (3.02)	0.903 (0.93)
2	-0.453 (0.51)	-0.867 (1.10)	-1.455** (2.40)	-1.273** (2.32)	-1.623*** (3.54)	-1.228** (2.44)	1.170 (1.36)
3	-0.472 (0.63)	-0.679 (0.91)	-0.471 (0.85)	-1.223** (2.54)	-1.019** (2.41)	-0.786* (1.78)	0.547 (0.68)
4	1.697** (2.18)	-0.213 (0.35)	-0.448 (0.60)	-1.051* (1.86)	-1.012** (2.47)	-0.527 (1.09)	2.710*** (3.24)
High	3.804*** (3.87)	0.720 (0.96)	-1.014 (1.21)	-0.716 (0.77)	-1.186 (1.52)	0.776 (1.11)	4.990*** (4.02)
All	0.595 (0.85)	-0.533 (0.87)	-1.137** (2.13)	-1.387*** (2.78)	-1.461*** (3.36)	-0.785* (1.70)	2.052*** (2.68)
High-low	5.352*** (4.49)	2.326** (2.28)	1.305 (1.25)	1.909* (1.92)	1.265* (1.70)	2.940*** (3.28)	

Source: Amihud & Goyenko (2013, Table 2)

MUTUAL FUNDS AND R-SQUARED

Table 2

Fund portfolio *alpha*, based on sorting on lagged R^2 and *alpha*

Panel A: Results using *net* returns

		R_{t-1}^2					
		Low	2	3	4	High	All
Alpha_{t-1}	Low						
	2					*	-2.164*** (3.02)
	3					*	-1.228** (2.44)
	4						-0.786* (1.78)
	High						-0.527 (1.09)
	All	0.595 (0.85)	-0.533 (0.87)	-1.137** (2.13)	-1.387*** (2.78)	-1.461*** (3.36)	-0.785* (1.70)

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MUTUAL FUNDS AND R-SQUARED

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High							0.776 (1.11)
All	0.595 (0.85)	-0.533 (0.87)	-1.137** (2.13)	-1.387*** (2.78)	-1.461*** (3.36)	-0.785* (1.70)	*

Source: Amihud & Goyenko (2013, Table 2)

MUTUAL FUNDS AND R-SQUARED

Table 2

Fund portfolio *alpha*, based on sorting on lagged R^2 and *alpha*

Panel A: Results using *net* returns

Alpha_{t-1}	Low	2	3	4	R^2_{t-1}	High	All
Low	-1.548 (1.57)					-2.164*** (3.02)	
2	-0.453 (0.51)					-1.228** (2.44)	
3	-0.472 (0.63)					-0.786* (1.78)	
4	1.697** (2.18)					-0.527 (1.09)	
High	3.804*** (3.87)					0.776 (1.11)	
All	0.595 (0.85)	-0.533 (0.87)	-1.137** (2.13)	-1.387*** (2.78)	-1.461*** (3.36)	-0.785* (1.70)	*

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Source: Amihud & Goyenko (2013, Table 2)

DIRECTOR OF UIUC EMBA PROGRAM!



Source: Frey (n.d.)

SHOULD ALSO BE MY FINANCIAL ADVISOR!



Source: Frey (n.d.)

FIDELITY CONTRAFUND (LARGE GROWTH)

Fidelity® Contrafund® Fund FCNTX

MPT Statistics FCNTX

3-Year	5-Year	10-Year	15-Year
--------	--------	---------	---------

15-Year Trailing vs. Standard Index	Index	R-Squared	Beta	Alpha
FCNTX	S&P 500 TR USD	82.17	0.81	3.43
Category: LG	S&P 500 TR USD	86.53	1.04	-0.69
06/30/2016				

Source: Morningstar (accessed 2016)

FIDELITY CONTRAFUND (LARGE GROWTH)

Fidelity® Contrafund® Fund FCNTX

MPT Statistics FCNTX

3-Year 5-Year

10-Year

15-Year

10-Year Trailing
vs. Standard Index

Index

R-Squared

Beta

Alpha

FCNTX

S&P 500 TR USD

89.41

0.89

1.36

Category: LG

S&P 500 TR USD

88.31

1.02

-0.15

06/30/2016

FIDELITY CONTRAFUND (LARGE GROWTH)



Fidelity® Contrafund® Fund FCNTX

MPT Statistics FCNTX

3-Year	5-Year	10-Year	15-Year
--------	--------	---------	---------

3-Year Trailing vs. Best-Fit Index	Index	R-Squared	Beta	Alpha
FCNTX	Russell 3000 Growth TR USD	95.20	0.92	-0.12
vs. Standard Index				
FCNTX	S&P 500 TR USD	86.79	0.93	0.66
Category: LG	S&P 500 TR USD	85.16	1.04	-1.25

06/30/2016

Source: Morningstar (accessed 2016)

KEY TAKEAWAYS FROM THIS RESEARCH

Negative ALPHA predicts negative ALPHA
(mainly through continued high fees)

If your supposedly actively-managed fund has R^2 close to one, then it is really a “closet indexer”

And you don't want to pay high fees for an index fund! Results in negative ALPHA!

A screen on both recent success and relatively low R-squared does seem to predict good future mutual fund performance (even after expenses)

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Valuing Complicated Firms and Exploiting Inattention

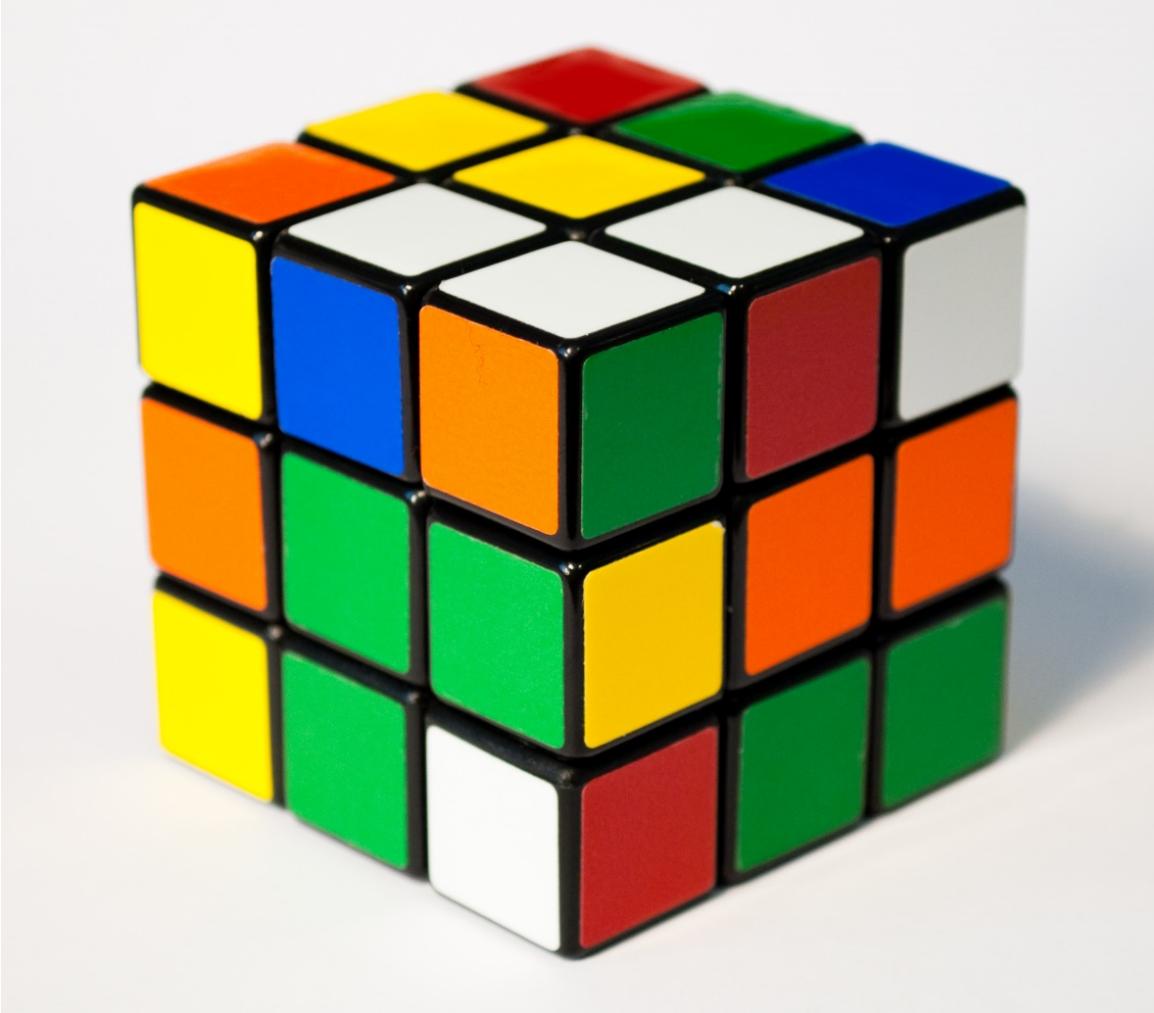


COMPLICATED FIRMS AND INATTENTION

Idea is that some group of investors takes a longer time to process relevant, complicated information to value a firm (or does not pay immediate attention to all relevant information)

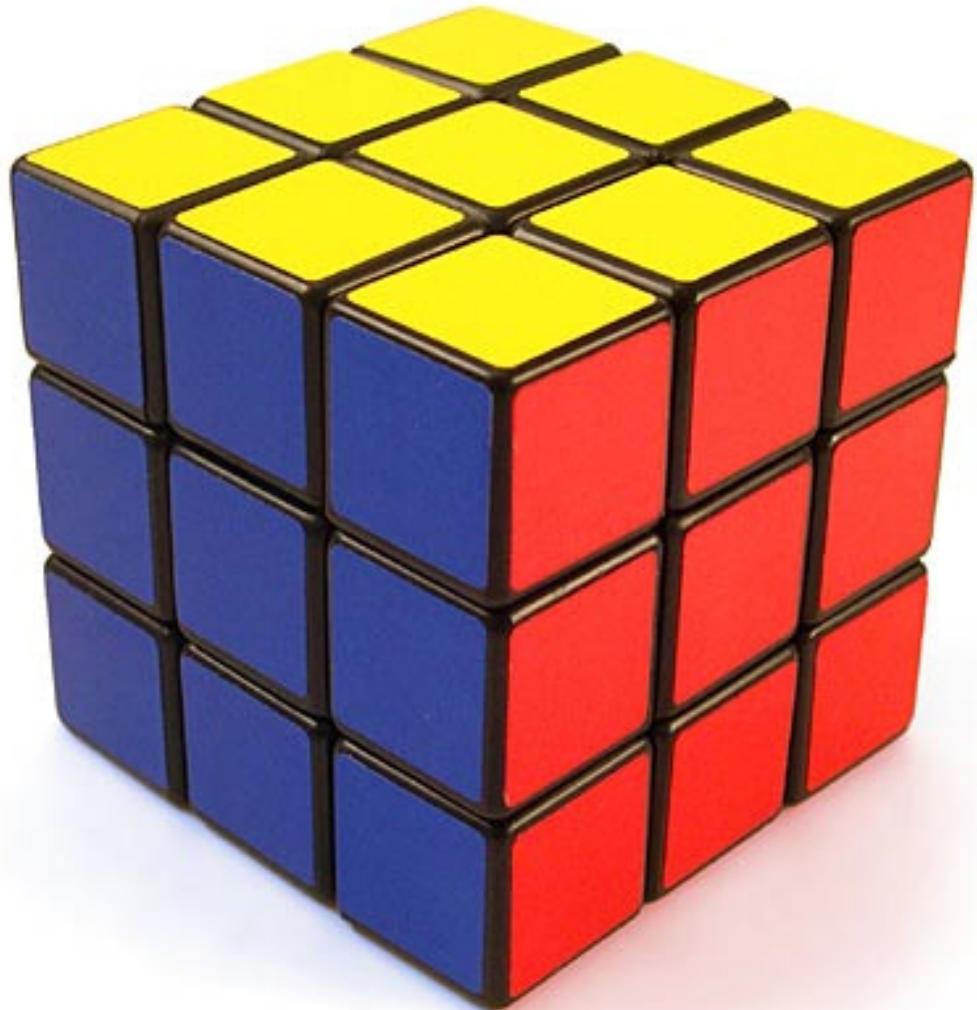
Suggests potential profit opportunity for the group of investors that has the ability to process complicated information (or is simply paying immediate attention)

IDEA ... FIND THINGS THAT ARE COMPLICATED FOR MANY



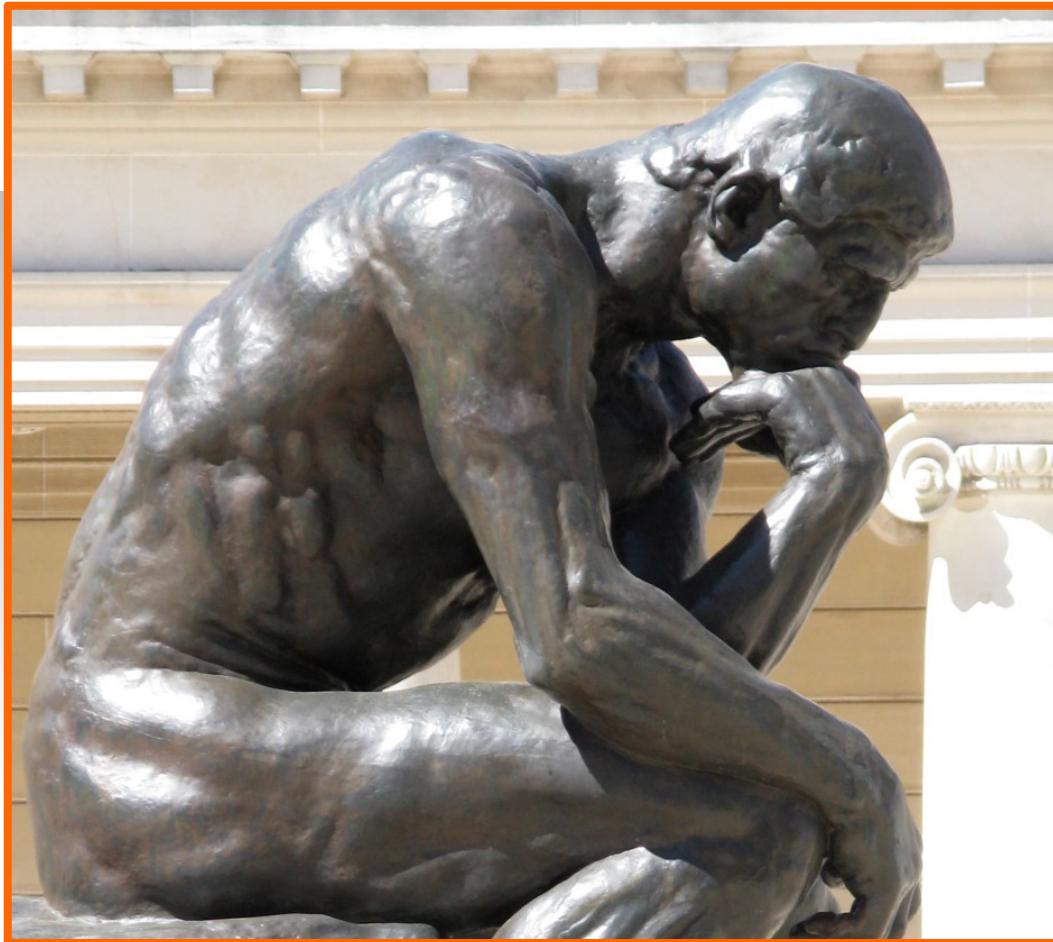
Source: Wikimedia/Acdx (2009)

BUT THAT YOU CAN
FIGURE OUT QUICKLY!



Source: Wikimedia/Andromorfo (2007)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS



What type of firms are “complicated”?

What is a portfolio strategy one could construct assuming you have an edge in processing information about these “complicated” firms?

DISCUSSION OF QUESTIONS

What type of firms are “complicated”?

What is a portfolio strategy one could construct assuming you have an edge in processing information about these “complicated” firms?

DOES ATTENTION STOP AT WATER'S EDGE?

U.S. firms increasingly have more sales
overseas

Are investors keeping track of how these
overseas economies are performing, and
thus the effect on sales of the U.S. firms?

Perhaps takes a little time for overseas
shocks to economy to be fully reflected in
firm price

This research reported in Nguyen (2012)
(Huang (2015) reports similar results)

DOES ATTENTION STOP AT WATER'S EDGE?

For each month from 1999-2010, rank firms by a weighted-average geographic return (weight is share of sales in that country, return is stock market return in that country)

Rank firms by this geographic return

Form portfolios for the next month based on this ranking

Repeat each month

Report monthly returns in percentage points

DOES ATTENTION STOP AT WATER'S EDGE?



	Panel B: Value-Weighted Returns					
	1 (Low)	2	3	4	5 (High)	High-Low
Excess Return	-0.13 (-0.17)	0.16 (0.25)	0.28 (0.47)	0.28 (0.46)	1.35* (1.81)	1.48*** (3.22)
CAPM Alpha	-0.12 (-0.30)	0.17 (0.58)	0.29 (1.08)	0.29 (0.90)	1.36*** (2.84)	1.48*** (3.24)
FF-3 Alpha	-0.48 (-1.39)	-0.15 (-0.68)	-0.11 (-0.56)	-0.10 (-0.37)	0.88** (2.14)	1.36*** (2.97)
Car-4 Alpha	-0.42 (-1.25)	-0.10 (-0.47)	-0.06 (-0.35)	-0.04 (-0.17)	0.95** (2.38)	1.37*** (2.97)
PS-5 Alpha	-0.52 (-1.42)	-0.26 (-1.32)	-0.13 (-0.77)	-0.17 (-0.74)	0.87** (2.09)	1.39*** (2.96)

Source: Nguyen (2012, Table 2)

DOES ATTENTION STOP AT WATER'S EDGE?

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Source: Nguyen (2012, Table 2)

HOW EVALUATE THIS STRATEGY?

How does payoff from “geographic momentum” vary with state of economy and performance of other investment strategies?

Report “High – Low” (i.e., top quintile minus bottom quintile):

Panel B: Value-Weighted Returns

	Ex. Ret	CAPM	FF-3	Car-4	PS-5
<i>Alpha</i>	1.48*** (3.22)	1.48*** (3.24)	1.36*** (2.97)	1.37*** (2.97)	1.39*** (2.96)
<i>Mkt – R_f</i>		-0.16 (-1.44)	-0.15 (-1.33)	-0.16 (-1.30)	-0.15 (-1.27)
<i>SMB</i>			0.07 (0.52)	0.07 (0.55)	0.07 (0.54)
<i>HML</i>			0.16 (1.10)	0.15 (1.06)	0.15 (1.03)
<i>UMD</i>				-0.02 (-0.23)	-0.01 (-0.21)
<i>LIQ</i>					-0.03 (-0.25)
p-value of F-test		0.30	0.43	0.53	0.61
<i>R</i> ²	0.00	0.01	0.02	0.03	0.04
N	126	126	126	126	126

Source: Nguyen (2012, Table 3)

HOW EVALUATE THIS STRATEGY?

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Report “High – Low” (i.e., top quintile minus bottom quintile):

Panel B: Value-Weighted Returns

	Ex. Ret	CAPM	FF-3	Car-4	PS-5
<i>Alpha</i>	1.48*** (3.22)	1.48*** (3.24)	1.36*** (2.97)	1.37*** (2.97)	1.39*** (2.96)
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<i>R</i> ²	0.00	0.01	0.02	0.03	0.04
N	126	126	126	126	126

Source: Nguyen (2012, Table 3)

A “PLACEBO” TEST!

How many months in future should one be able to earn returns on this “geographic-momentum” strategy?

Rank stocks by their weighted-average geographic return (i.e., return of stock market in countries where have sales, weighted by percent of total firm sales in that country) at time 0.

Examine return for next month, then month after that, then month after that, etc.

A “PLACEBO” TEST!

Panel B: Value-Weighted Returns

	Excess Return	CAPM Alpha	FF-3 Alpha	Car-4 Alpha	PS-5 Alpha
$r_{0,1}$	1.48*** (3.22)	1.48*** (3.24)	1.36*** (2.97)	1.37*** (2.97)	1.39*** (2.96)
$r_{1,2}$	0.20 (0.43)	0.20 (0.44)	0.15 (0.32)	0.13 (0.27)	0.05 (0.12)
$r_{2,3}$	0.19 (0.42)	0.19 (0.42)	0.32 (0.70)	0.27 (0.59)	-0.14 (-0.30)
$r_{3,4}$	0.30 (0.58)	0.30 (0.58)	0.27 (0.53)	0.27 (0.53)	0.49 (0.99)
$r_{4,5}$	-0.31 (-0.71)	-0.31 (-0.71)	-0.18 (-0.41)	-0.12 (-0.26)	-0.32 (-0.71)
$r_{5,6}$	0.29 (0.67)	0.29 (0.66)	0.36 (0.88)	0.33 (0.81)	0.42 (1.01)

Source: Nguyen (2012, Table 4)

WHAT IF USE GDP GROWTH INSTEAD?

What if instead of ranking firms each month by geographic stock returns, rank firms once a quarter by weighted average of GDP growth in country of firm's segments?

Report monthly returns in percentage points.

Report difference between top and bottom quintile (High – Low):

	Ex. Ret	CAPM	FF-3	Car-4	PS-5
<i>Alpha</i>	0.65* (1.70)	0.65* (1.69)	0.85* (1.96)	0.89** (2.05)	0.91** (1.99)
<i>Mkt – R_f</i>		0.01 (0.07)	0.06 (0.53)	-0.03 (-0.31)	-0.03 (-0.27)
<i>SMB</i>			-0.28 (-1.30)	-0.24 (-1.53)	-0.24 (-1.53)
<i>HML</i>			-0.08 (-0.64)	-0.12 (-1.04)	-0.13 (-1.05)
<i>UMD</i>				-0.13* (-1.71)	-0.13 (-1.50)
<i>LIQ</i>					-0.02 (-0.17)
p-value of F-test		0.16	0.25	0.39	0.53
R ²	0.00	0.00	0.05	0.07	0.07
N	126	126	126	126	126

Source: Nguyen (2012, Table 6)

ANOTHER EXAMPLE: VALUATION OF COMPLICATED FIRMS

Can one use the performance of easy-to-analyze firms to predict the performance of their more complicated peers?

Research by Cohen and Lou (2012)

Can you predict the return of conglomerate firms (have multiple divisions) by paying attention to the performance of stand-alone firms?

PREDICTABILITY IN CONGLOMERATE RETURNS

Table 2

Complicated processing portfolios, abnormal returns 1977–2009.

Decile	Excess returns	1-Factor alpha	3-Factor alpha	4-Factor alpha	5-Factor alpha
<i>Panel A: Equal weights</i>					
1 (Low)	0.14% (0.43)	-0.47% (-2.83)	-0.71% (-4.80)	-0.61% (-4.01)	-0.65% (-4.39)
10 (High)	1.31% (4.34)	0.74% (4.63)	0.48% (3.63)	0.47% (3.30)	0.47% (3.09)
L/S	1.18% (5.51)	1.21% (5.52)	1.18% (5.30)	1.08% (4.48)	1.12% (4.50)

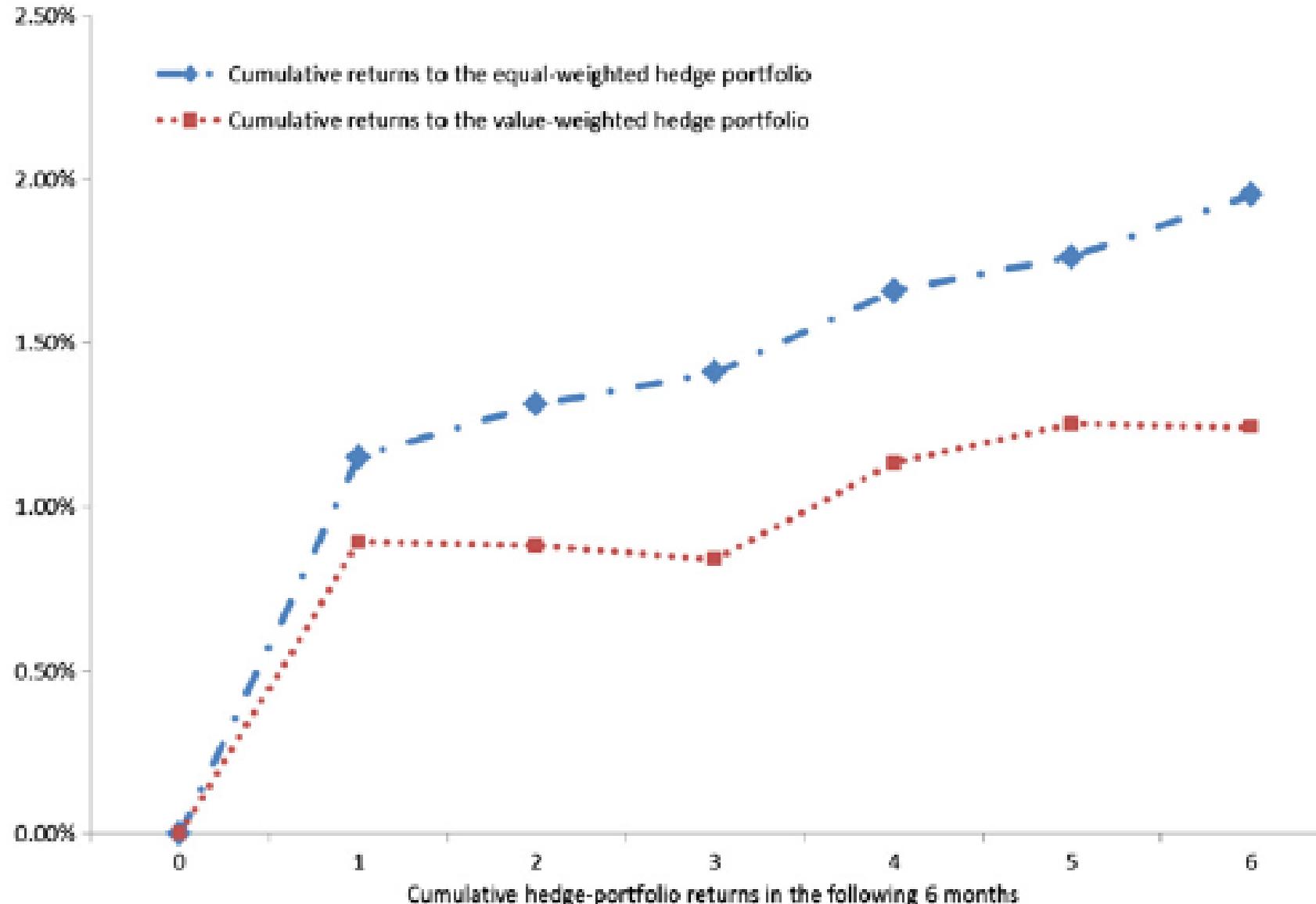
PREDICTABILITY IN CONGLOMERATE RETURNS

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10 (High)	1.31% (4.34)	0.74% (4.63)	0.48% (3.63)	0.47% (3.30)	0.47% (3.09)
L/S	1.18% (5.51)	1.21% (5.52)	1.18% (5.30)	1.08% (4.48)	1.12% (4.50)

CUMULATIVE RETURN NEXT 6 MONTHS



Source: Cohen & Lou (2012, Figure 2)

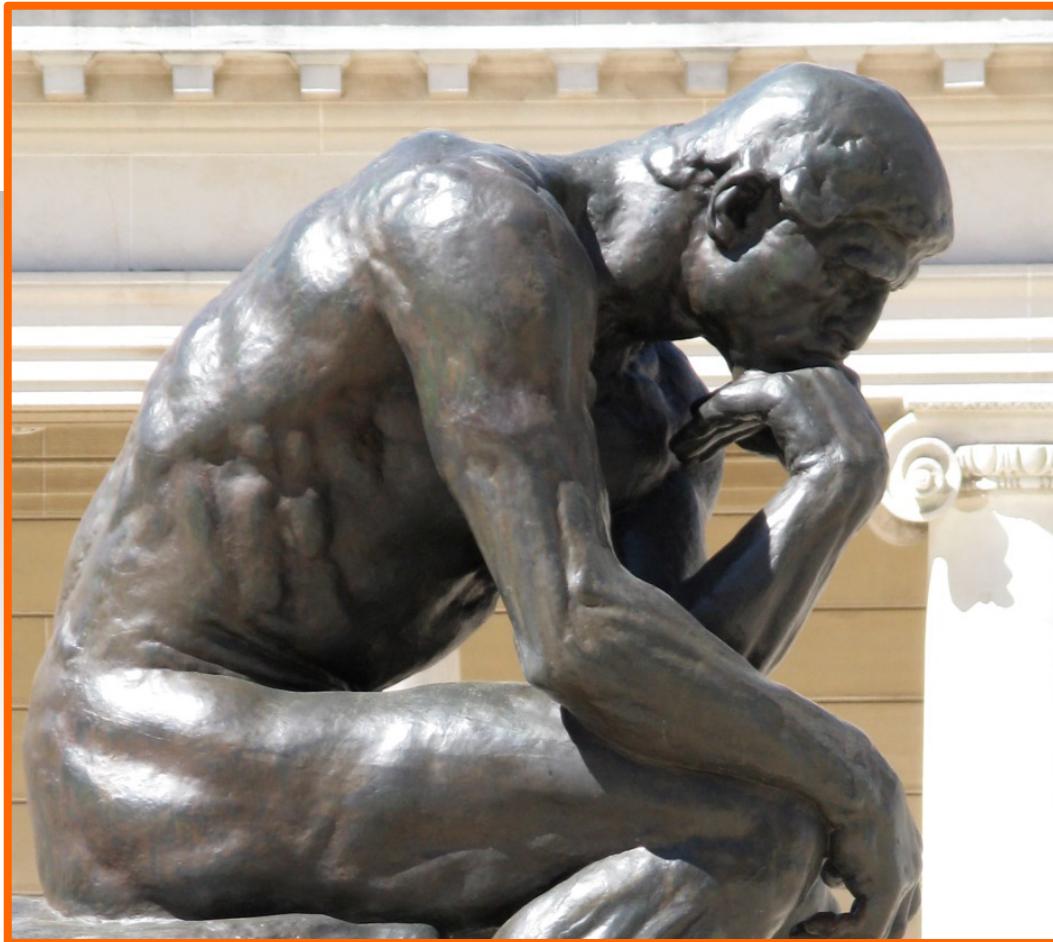
ANOTHER EXAMPLE: DRIFT STRATEGY BASED ON EARNINGS

A classic drift strategy based on under-reaction to accounting news is called Post-Earnings Announcement Drift (PEAD)

Invest in companies that had a positive reaction to most-recent earnings report for 3 months (they continue to do well)

Short companies that had a negative reaction to most recent-earnings report for 3 months (they continue to do poorly)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTIONS

What should be the returns from this Post Earnings Announcement Drift (PEAD) strategy in a fully efficient market?

What should be the returns from this Post Earnings Announcement Drift (PEAD) if there is some under-reaction to this accounting news?

DISCUSSION OF QUESTIONS

What should be the returns from this Post Earnings Announcement Drift (PEAD) strategy in a fully efficient market?

What should be the returns from this Post Earnings Announcement Drift (PEAD) if there is some under-reaction to this accounting news?

RETURN TO PEAD, REPORTED IN FRAZZINI (2006)

Post-Earnings Announcement Drift, Monthly Alphas 1980–2002

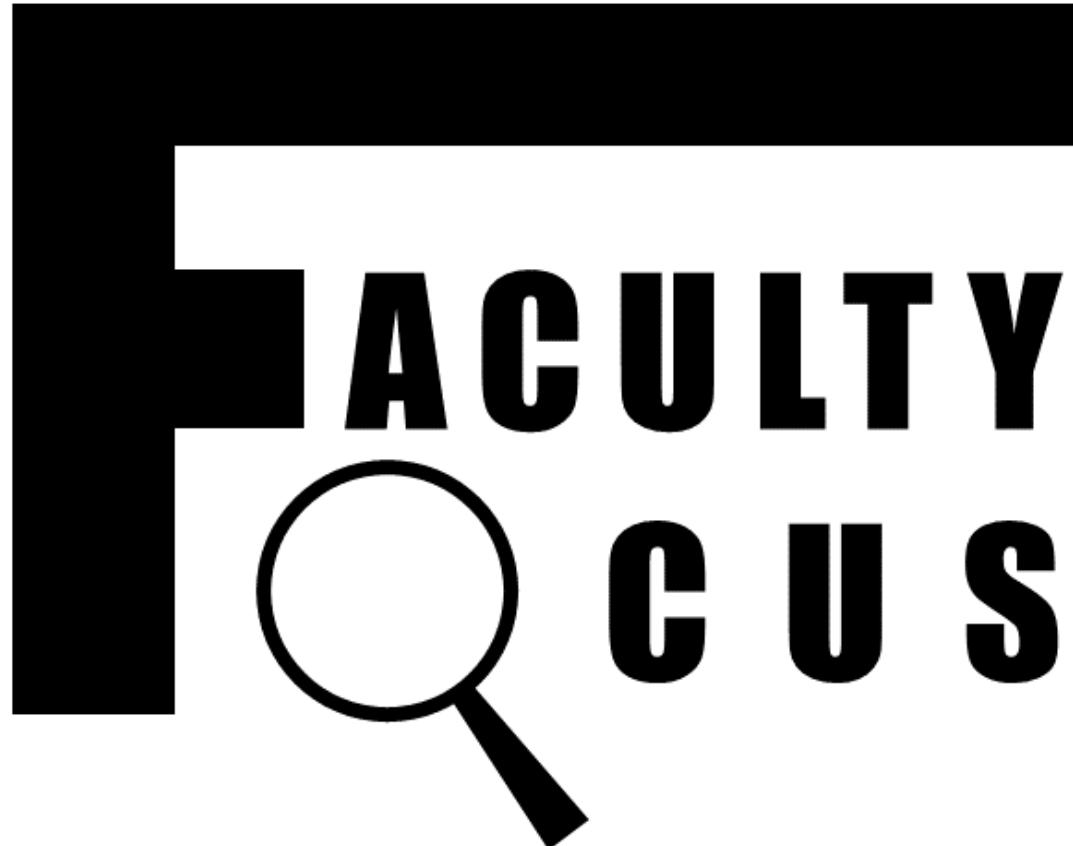
At the beginning of every calendar month, stocks are ranked in ascending order on the basis of their cumulative abnormal returns on the most recent earnings announcement date. The daily abnormal returns are cumulated from the 2 days preceding the event date to 1 day after. Stocks are assigned to one of five equally weighted quintile portfolios. This table includes all available stocks and reports Fama and French (1993) three-factor alphas. The dependent variable is the monthly excess return of the Treasury bill rate from the rolling strategy. The explanatory variables are the monthly returns from Fama and French (1993) mimicking portfolios. L/S is the alpha of a zero-cost portfolio that holds the top 20% good news stocks and sells short the bottom 20% bad news stocks. Alphas are in monthly percent, *t*-statistics are shown below the coefficient estimates, and 5% statistical significance is indicated in bold. “Rolling period” is the holding period of the rolling strategy, in months.

Rolling Period	Earnings News Quintile					L/S
	1 (Bad)	2	3	4	5 (Good)	
+1	-0.558 (-2.69)	-0.253 (-1.84)	0.014 (0.11)	0.232 (1.82)	0.595 (3.20)	1.152 (8.17)

Source: Frazzini (2006, Table 4)

**STAY TUNED ...
FACULTY FOCUS EPISODE!**

w / Scott Weisbennner



STAY TUNED ... FACULTY FOCUS EPISODE!



Source: Image from College of Business,
University of Illinois at Urbana-Champaign/Grant Czadzeck

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Potential Modern Sources of Information



HARDER AND HARDER TO GET INFO EDGE?

In 1800s and early 1900s, could think of monitoring number of fully-packed trains passing through a depot to get a “heads up” as to current economic conditions

Pace of information transmission certainly has increased over time

Any sources of info that others may overlook or that may be useful in forecasting trends?

SEE WHAT PEOPLE ARE THINKING ABOUT

 Search Trends

Tip: Use commas to compare multiple search terms.

Examples

[rss, web 2.0](#)

[baseball, soccer, basketball](#)

[papillomavirus](#)

[ytmnd.com, 4chan.org, ebaumsworld.com](#)

[kexp.org, kuow.org, kplu.org, kbcs.fm](#)

[evite.com](#)

Hot Searches (USA)

- Tom Cruise Jun 29
- NBA draft 2012 Jun 28
- Don Grady Jun 28
- Ann Curry Jun 28
- ObamaCare Jun 28
- Nexus 7 Jun 27
- Euro 2012 Jun 27
- ESPN3 Jun 27
- Colorado Springs Jun 26
- Nora Ephron Jun 26

Source: Google Trends (accessed 2012)

capm

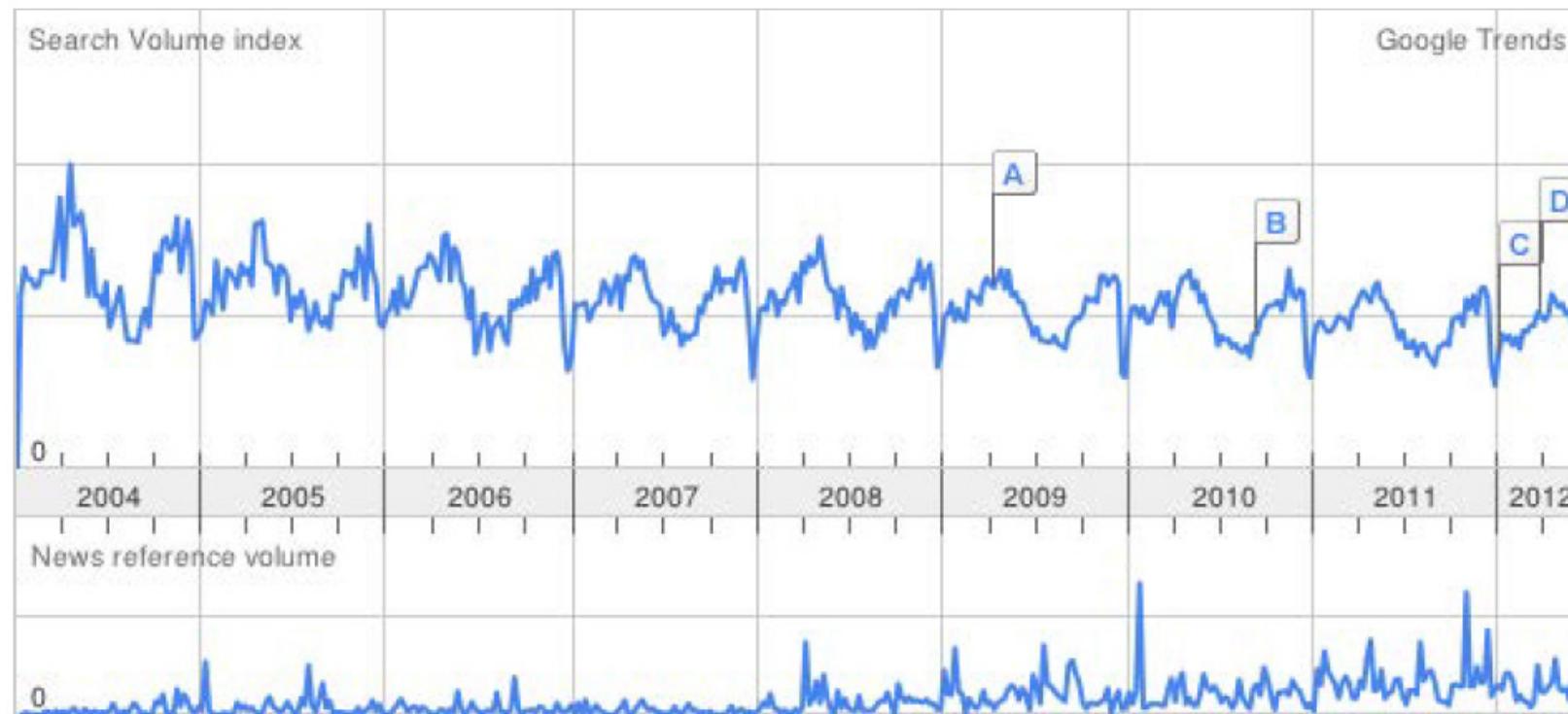
Search Trends

Tip: Use commas to compare multiple search terms.

Searches [Websites](#)

All regions

- Scale is based on the average worldwide traffic of **capm** in all years. [Learn more](#)
- An improvement to our geographical assignment was applied retroactively from 1/1/2011. [Learn more](#)

capm — 1.00

Source: Google Trends (accessed 2012)

PAUSE, THINK, AND ANSWER!



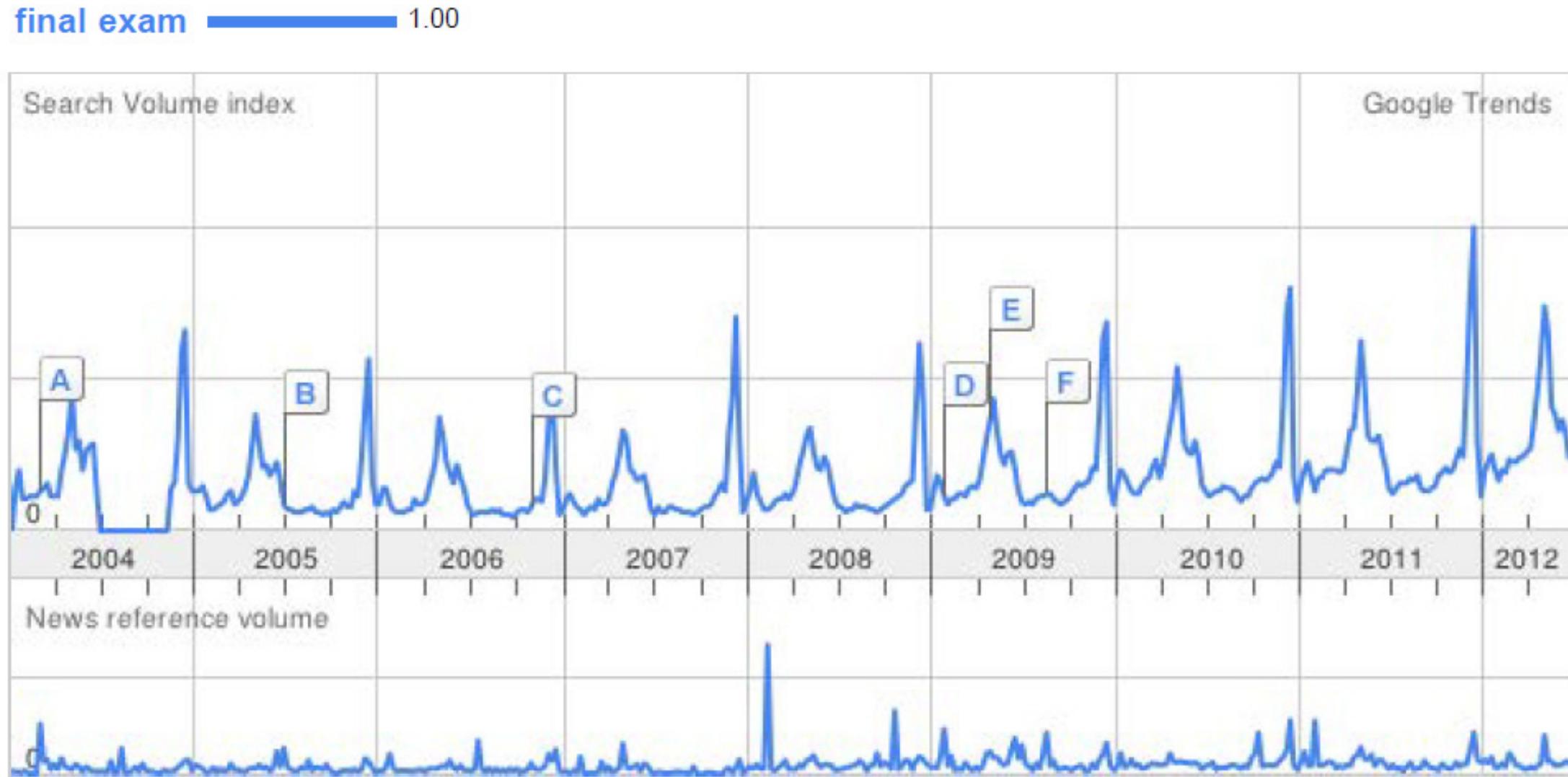
Source: Haklai (2012)

QUESTION

I

What explains the robust seasonal patterns
in Google searches for “CAPM”?

SEARCH FOR “CAPM” LOOKS SIMILAR TO ...



Source: Google Trends (accessed 2012)

GET EARLY INDICATOR OF ECONOMIC ACTIVITY?



coach purse  1.00



Source: Google Trends (accessed 2012)

GET INDICATOR OF INVESTOR SENTIMENT?



housing bubble ————— 1.00



Source: Google Trends (accessed 2012)

ALSO CAN TELL WHERE NO INTEREST!

Google Trends

scott weisbenner

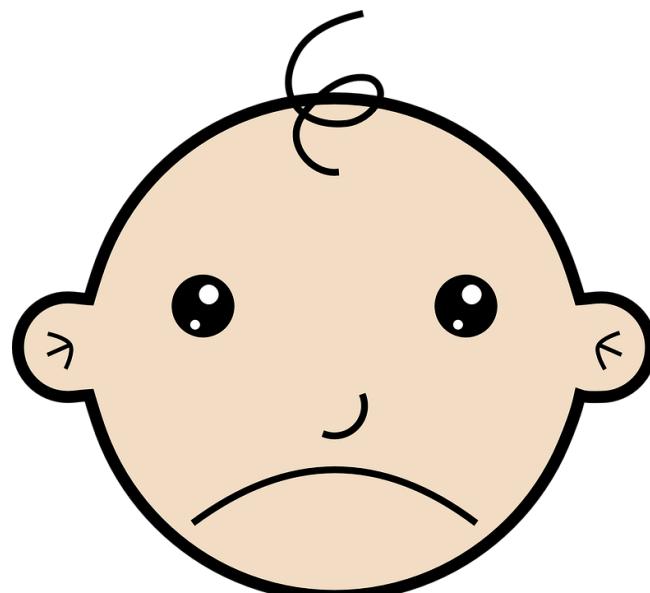
Search Trends

Tip: Use commas to compare multiple search terms.

Searches Websites

All regions

Your terms - **scott weisbenner** - do not have enough search volume to show graphs.



Sources:

Google Trends (accessed 2012)

Pixabay/OpenClipart-Vectors (n.d.)

STUDYING A MEASURE OF INVESTOR ATTENTION

Da, Engelberg, and Gao (2011) do a more comprehensive analysis of Google Trends and how it predicts markets!

Look at the frequency of searches in Google using Google Trends for stock tickers like “MSFT” or “AAPL”

Examine the **Search Volume Index (SVI)**

STUDYING A MEASURE OF INVESTOR ATTENTION

Authors look at the SVI for a stock ticker in a given week, and compare that to the median SVI for this ticker over the prior 8 weeks to calculate **“Abnormal Search Volume Index” (ASVI)**

Da, Engelberg, and Gao (2011) examine whether **“ASVI”** predicts returns

STUDYING A MEASURE OF INVESTOR ATTENTION

Are a bunch of searches on Google for a stock's ticker predictive of short-term buying activity for that stock (which may then result in short-term upward price pressure)?

This “liquidity effect” may have a short-term effect on prices but should not have a long-term effect

Are a bunch of searches on Google for a stock's ticker motivated by good information some investors may have about that stock?

This revelation of good information should predict both short- and long-term returns

STUDYING A MEASURE OF INVESTOR ATTENTION

Table VI
ASVI and Russell 3000 Stock Returns

This table reports the results from Fama-MacBeth (1973) cross-sectional regressions. The dependent variable is the DGTW abnormal return (in basis points) during the first 4 weeks and during weeks 5 to 52. Independent variables are defined in Table I. All variables are cross-sectionally demeaned (so the regression intercept is zero) and independent variables are also standardized (so the regression coefficients can be interpreted as the impact of a one-standard-deviation change). Standard errors are computed using the Newey-West (1987) formula with eight lags. *, **, and *** represent significance at the 10%, 5%, and 1% level, respectively. The sample period is from January 2004 to June 2008.

	Week 1 (1)	Week 2 (2)	Week 3 (3)	Week 4 (4)	Week 5–52 (5)
ASVI	18.742*** (7.000)	14.904** (7.561)	3.850 (6.284)	-1.608 (6.903)	-28.912 (17.162)
Log Market Cap × ASVI	-21.182*** (6.508)	-15.647** (6.768)	-4.710 (6.516)	4.290 (6.398)	16.834 (88.624)

Source: Da, Engelberg, & Gao (2011, Table 6)

IPO MARKET AND INVESTOR ATTENTION

Da, Engelberg, and Gao (2011) also study the first-day return and subsequent performance of Initial Public Offerings (IPOs)

Look at the frequency of searches in Google using the company name (not company ticker), and relate this search volume to IPO performance:

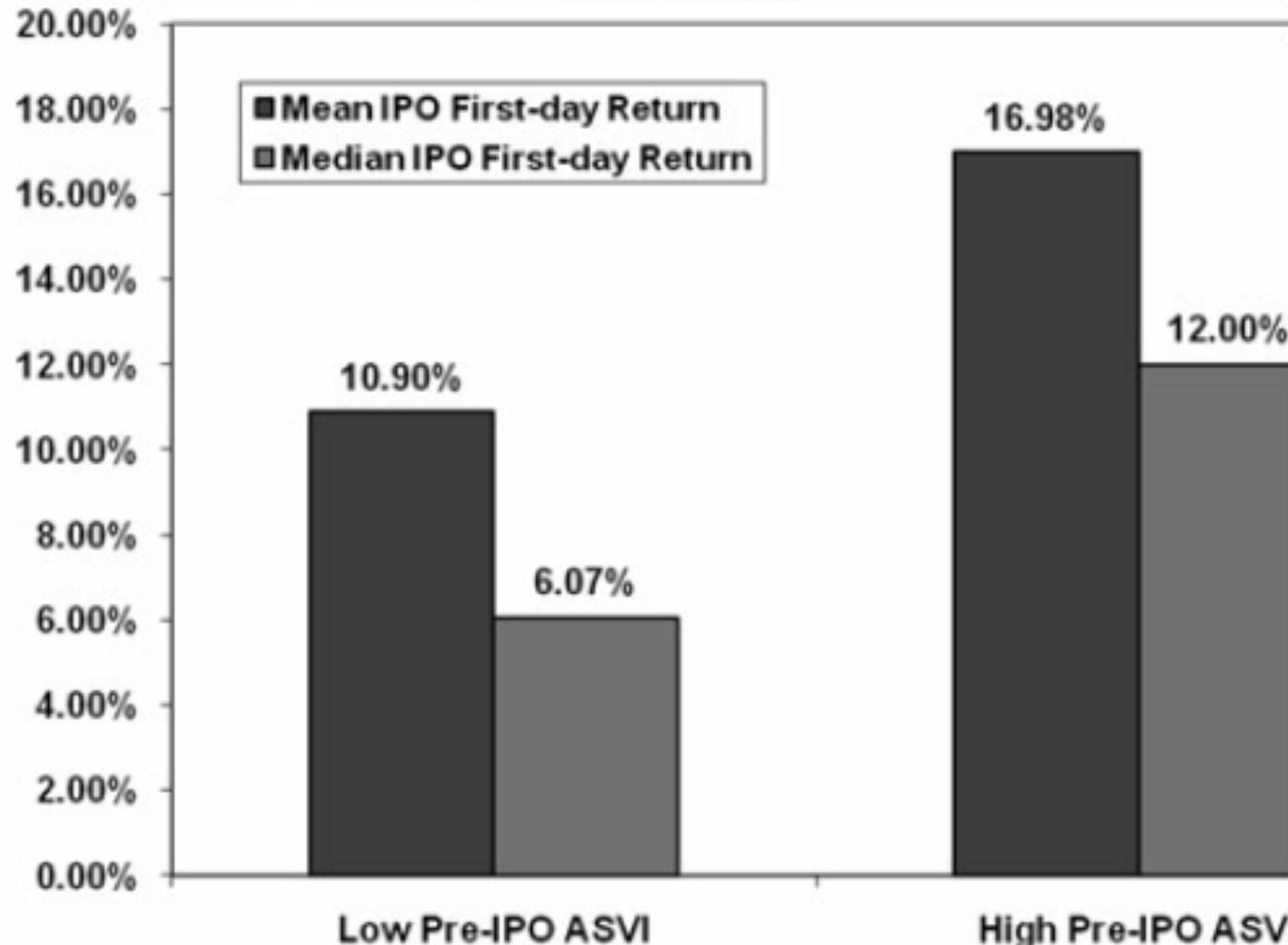
First-day returns

Benchmark-adjusted returns 4-12 months after IPO

GOOGLE SEARCH & IPO PERFORMANCE, 2004-07

Figure 3. Pre-IPO ASVI, average first-day IPO returns and long-run IPO returns.

Panel A. Pre-IPO ASVI and average first-day IPO returns

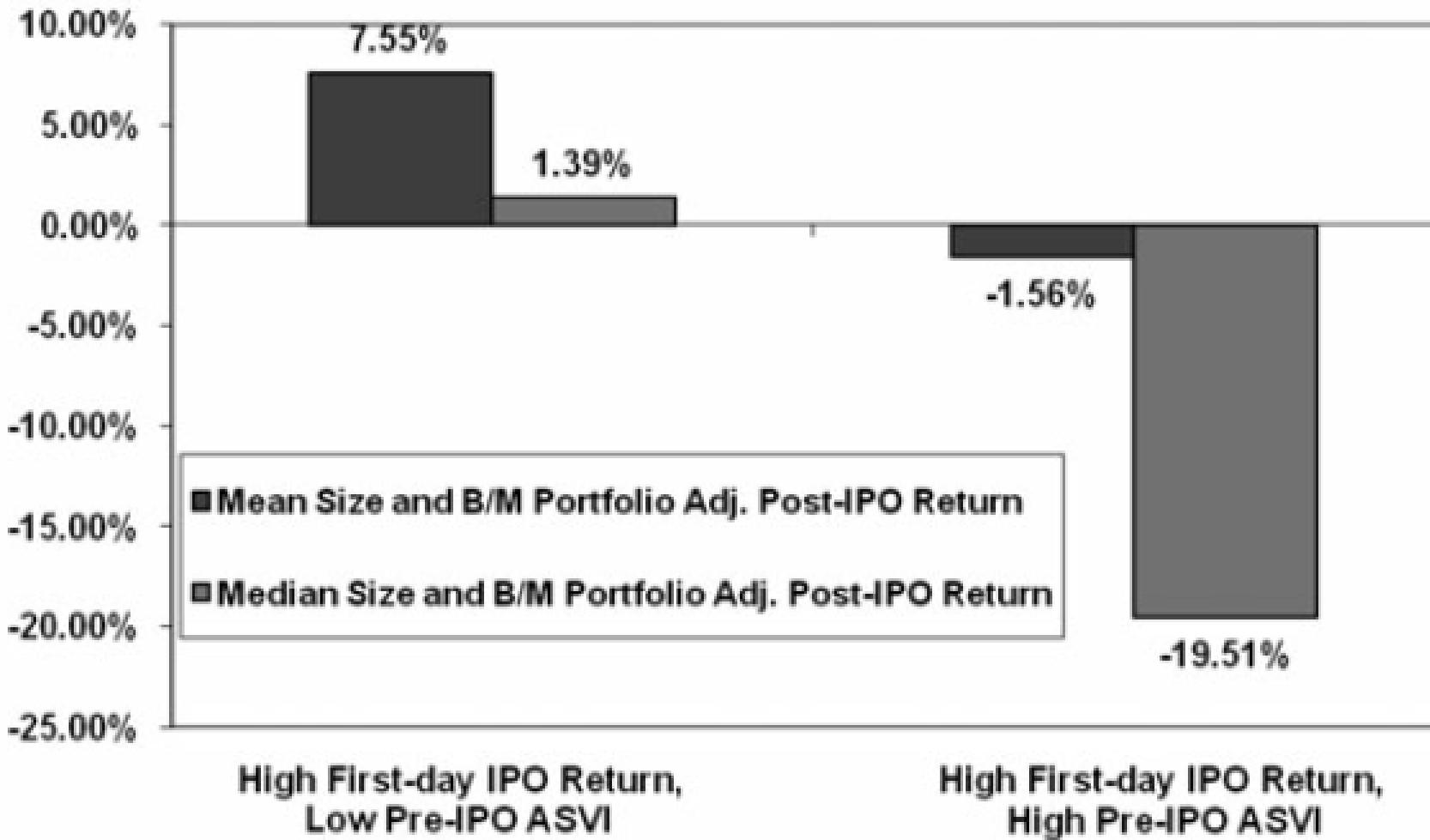


Source: Da, Engelberg, & Gao (2011, Figure 3)

GOOGLE SEARCH & IPO PERFORMANCE, 2004-07

Figure 3. Pre-IPO ASVI, average first-day IPO returns and long-run IPO returns.

Panel B. Pre-IPO ASVI and cross-sectional average industry-adjusted IPO cumulative returns (4 to 12 months)



Source: Da, Engelberg, & Gao (2011, Figure 3)

DOES THE CUSTOMER KNOW BEST?

Any way to get a sense of what products customers like and which they don't *before* this information is fully reflected in stock prices?

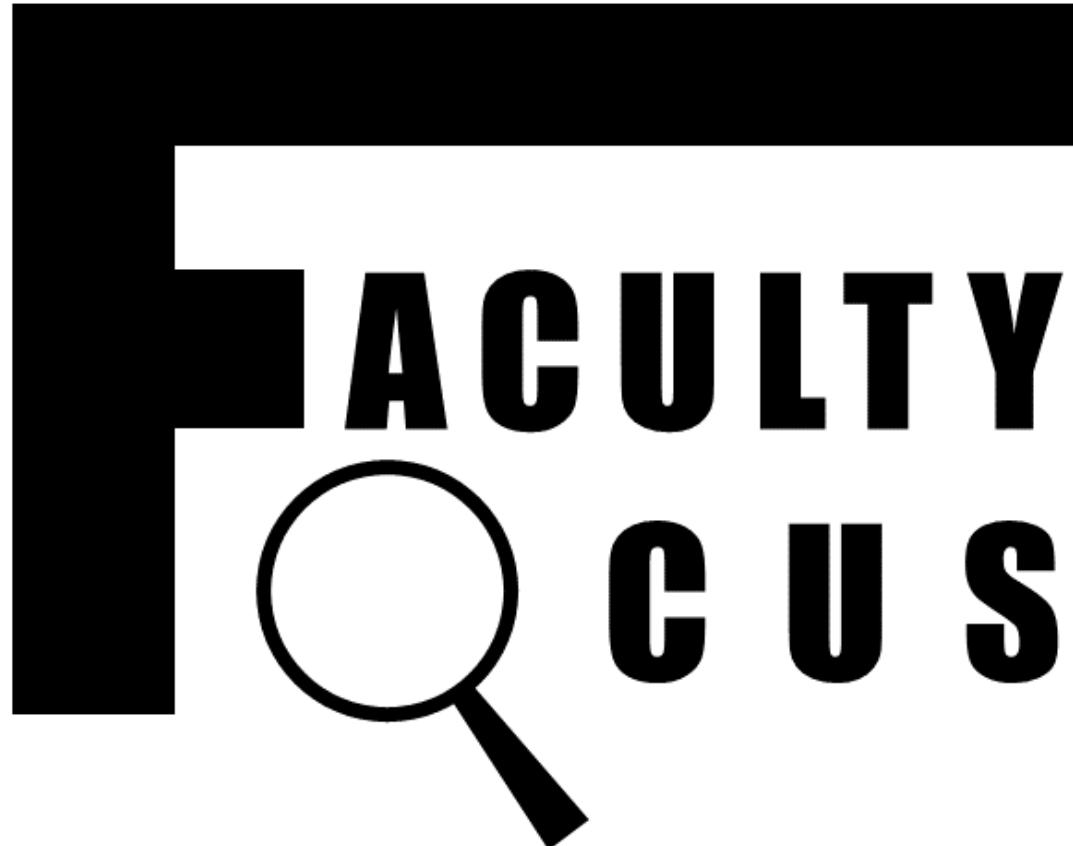
Obviously observe this ex post!

Huang (2016) examines whether Amazon product ratings provide useful information

Do changes in Amazon review ratings predict future stock returns and revenue/earnings surprises?

**STAY TUNED ...
FACULTY FOCUS EPISODE!**

w / Scott Weisbennner



STAY TUNED ... FACULTY FOCUS EPISODE!



Source: Image from College of Business,
University of Illinois at Urbana-Champaign/Grant Czadzeck

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

Economics of Mutual Funds



ECONOMICS OF MUTUAL FUNDS

How do investors respond to past performance of a mutual fund?

What incentives does this flow-performance relation provide for fund managers?

What should happen in equilibrium if a fund manager is found to generate positive ALPHA (i.e., exhibit investment skill)?

RELATION BETWEEN PAST RETURNS & FUTURE MUTUAL FUND FLOWS

Mutual fund managers are compensated based on the total net assets (TNA) of their fund

Assets under management depends on prior size of the fund, fund performance, and *net flows into or out of the fund*

RELATION BETWEEN PAST RETURNS & FUTURE MUTUAL FUND FLOWS

How do investors respond to past performance of a fund?

What incentives does this give to fund managers?

Does the flow-performance relation vary by the type of investor?

FLOW-PERFORMANCE RELATION

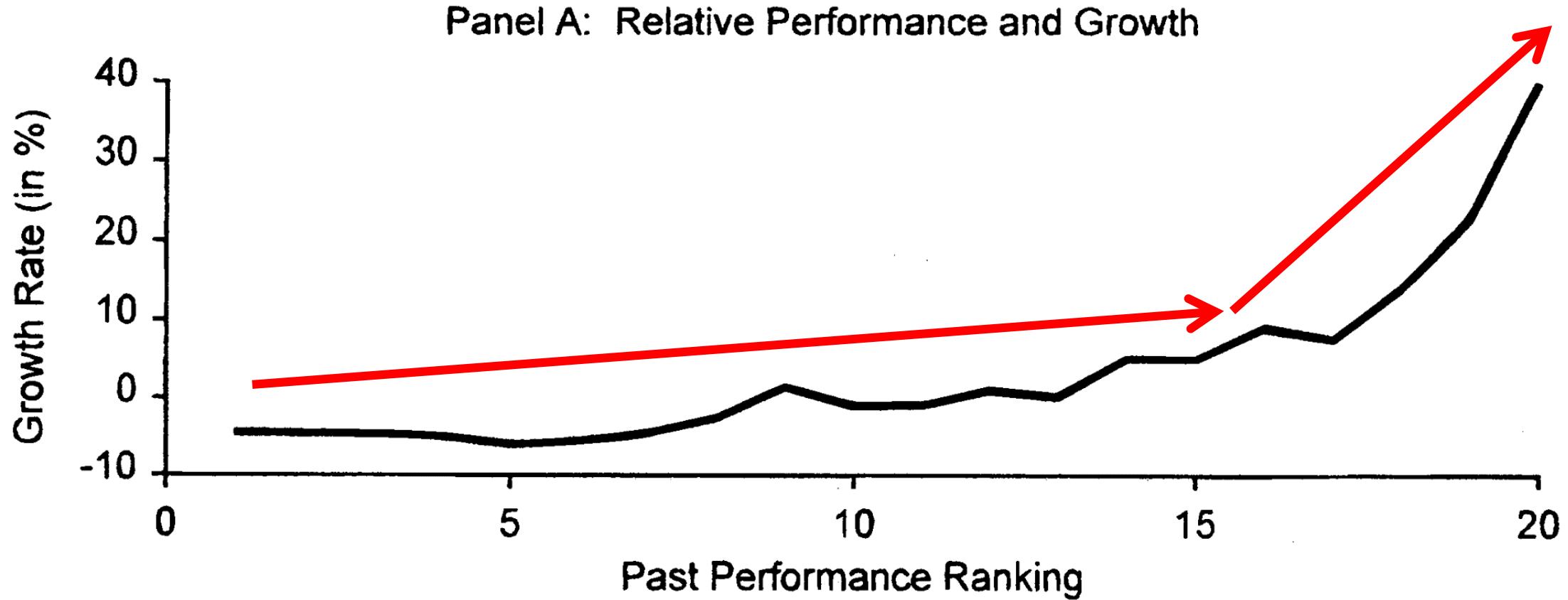
Sirri and Tufano (1998) study the relation between net flows into a fund and the fund's relative performance over the prior year

Rank funds by their returns over the past year relative to other funds in the same investment objective, and then place in 20 equal-sized groups based on this relative performance

Examine net flows into these 20 groups of funds over the next year

Examine 690 U.S. mutual funds 1970-1990

FAMOUS SIRRI & TUFANO (1998) RESULT



Source: Sirri & Tufano (1998, Figure 1)

CONVEX FLOW-PERFORMANCE RELATION

Sirri and Tufano (1998) found a CONVEX flow-performance relation for mutual funds

This suggests a big difference in future flows if ranked at the 90th percentile rather than the 75th percentile

This also suggests not a big difference in future flows if ranked in the 50th percentile as opposed to the 25th percentile

PAUSE, THINK, AND ANSWER!



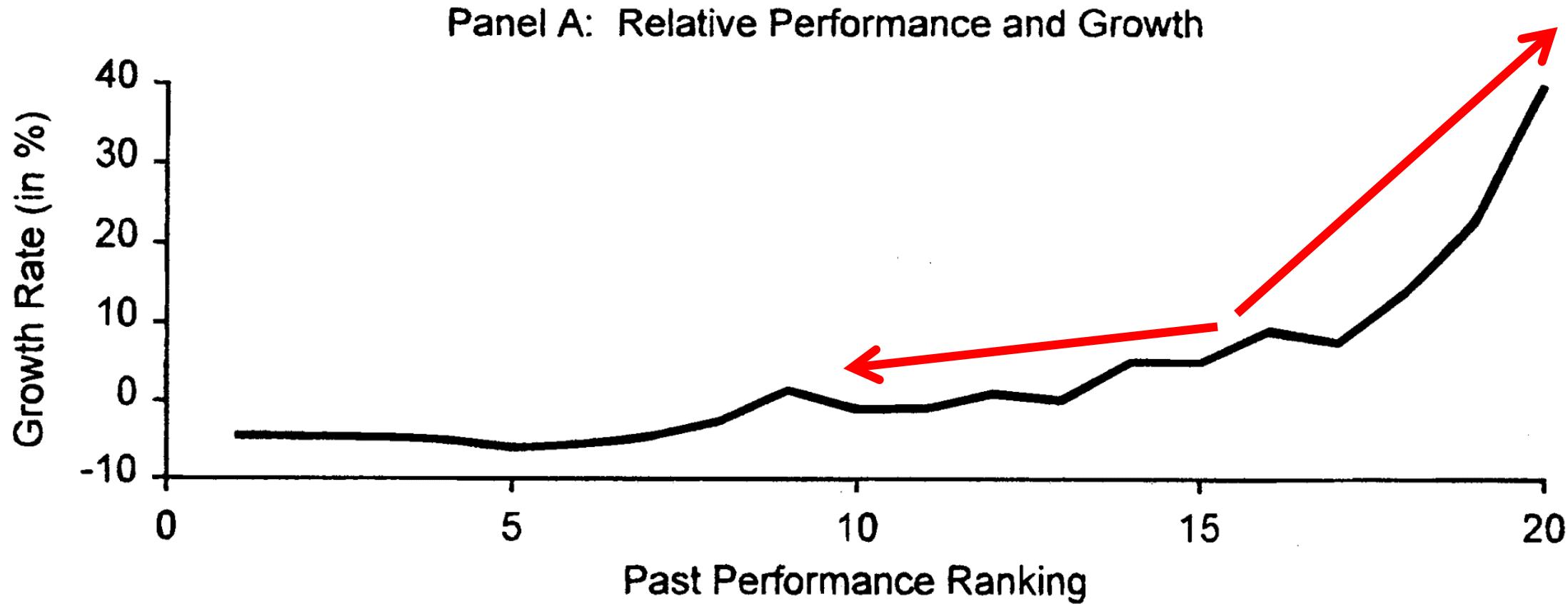
Source: Haklai (2012)

QUESTIONS

Given the convex relation between future flows into a fund and past relative performance, what incentives does this provide for a mutual fund that is currently at the 75th percentile of performance three quarters through the year?

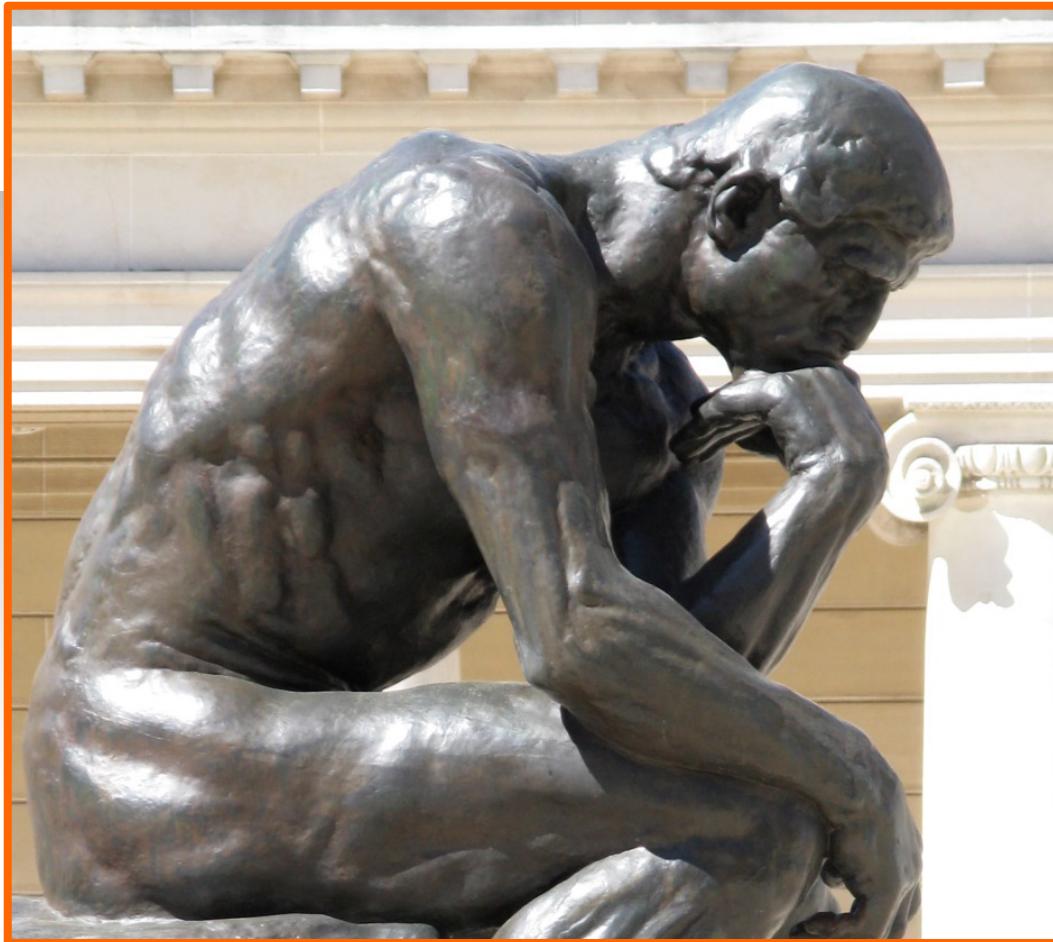
Does this fund have an incentive to increase or decrease the volatility of investments in the final quarter of the year?

FAMOUS SIRRI & TUFANO (1998) RESULT



Source: Sirri & Tufano (1998, Figure 1)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION

What type of investors in mutual funds are more likely to have a greater flow-to-performance sensitivity in their mutual fund investments – those that invest in DC pension plans or those that invest in mutual funds outside of their retirement plan?

DISCUSSION OF QUESTION

What type of investors in mutual funds are more likely to have a greater flow-to-performance sensitivity in their mutual fund investments – those that invest in DC pension plans or those that invest in mutual funds outside of their retirement plan?

Sialm, Starks, and Zhang (2015) examine flows into over 1,000 mutual funds over the period 1996-2009

Key is that these flows are broken down into those that are from DC plans and those that are non-DC flows

FLOW-PERFORMANCE RELATION, BY INVESTOR

Table III

Piecewise Linear Panel Regressions of DC and Non-DC Flows

This table summarizes a piecewise linear panel regression of DC and non-DC asset flows on fund variables. *Low*, *Mid*, and *High* represent the funds' ranked return performance, where $Low_{f,t} = \min(Rank_{f,t}, 0.2)$, $Mid_{f,t} = \min(Rank_{f,t} - Low_{f,t}, 0.6)$, and $High_{f,t} = (Rank_{f,t} - Low_{f,t} - Mid_{f,t})$. The other variables are fund characteristics. Standard errors are reported in parentheses and adjusted for clustering at the fund level. The regressions also include time fixed effects. *, **, and *** denote estimates that are statistically different from zero at the 10%, 5%, and 1% significance levels.

	1-Year Prior Performance			5-Year Prior Performance		
	DC Flow	Non-DC Flow	Difference	DC Flow	Non-DC Flow	Difference
Low Performance	1.194*** (0.377)	0.328** (0.142)	0.866** (0.374)	0.845** (0.334)	0.096 (0.166)	0.749** (0.330)
Mid Performance	0.236*** (0.086)	0.284*** (0.037)	-0.049 (0.090)	0.421*** (0.082)	0.281*** (0.036)	0.140* (0.083)
High Performance	1.776*** (0.497)	0.487*** (0.180)	1.289*** (0.476)	0.619* (0.329)	0.102 (0.154)	0.517 (0.334)

Source: Sialm, Starks, & Zhang (2015, Table 3)

FLOW-PERFORMANCE RELATION, BY INVESTOR

Table III

Piecewise Linear Panel Regressions of DC and Non-DC Flows

This table summarizes a piecewise linear panel regression of DC and non-DC asset flows on fund variables. *Low*, *Mid*, and *High* represent the funds' ranked return performance, where $Low_{f,t} = \min(Rank_{f,t}, 0.2)$, $Mid_{f,t} = \min(Rank_{f,t} - Low_{f,t}, 0.6)$, and $High_{f,t} = (Rank_{f,t} - Low_{f,t} - Mid_{f,t})$. The other variables are fund characteristics. Standard errors are reported in parentheses and adjusted for clustering at the fund level. The regressions also include time fixed effects. *, **, and *** denote estimates that are statistically different from zero at the 10%, 5%, and 1% significance levels.

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Source: Sialm, Starks, & Zhang (2015, Table 3)

FLOW-PERFORMANCE RELATION, BY INVESTOR

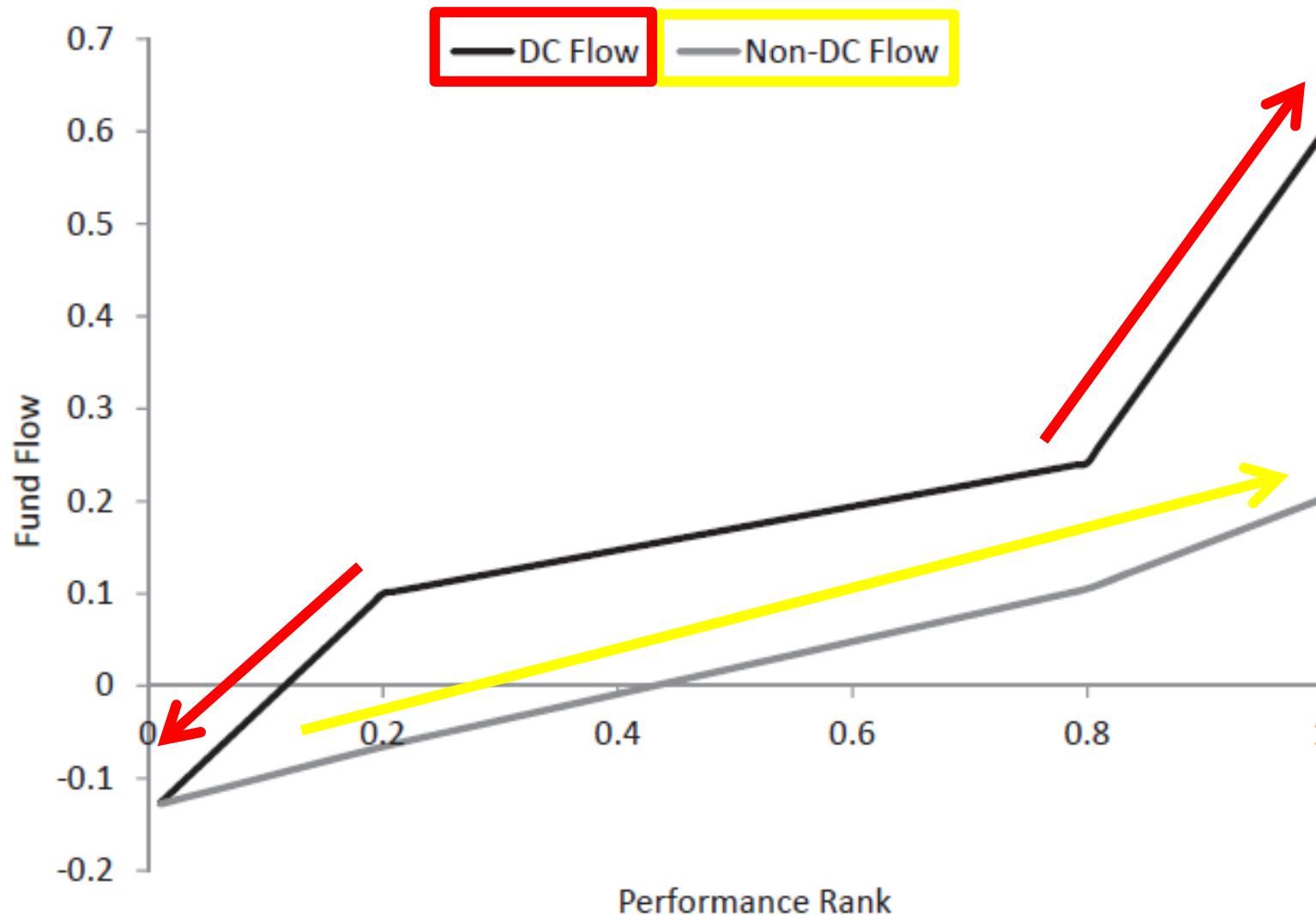


Figure 2. Piecewise linear flow-performance relation for percentile performance portfolios of DC assets and non-DC assets. This figure shows the flow-performance relation for DC

FLOW-PERFORMANCE RELATION DRIVEN BY PLAN SPONSORS OR PLAN PARTICIPANTS?

Table VIII
Flow-Performance Panel Regressions for Plan Sponsors and Plan Participants

	Total Flows	Sponsor Flows	Participant Flows
Low Performance	1.046*** (0.399)	1.050*** (0.376)	-0.004 (0.111)
Mid Performance	0.465*** (0.091)	0.310*** (0.083)	0.156*** (0.024)
High Performance	1.584*** (0.482)	1.389*** (0.427)	0.194 (0.136)

FLOWS AND FUTURE PERFORMANCE

Sialm, Starks, and Zhang (2015) also examine whether flows from DC plans and non-DC flows predict future fund performance

DO FLOWS INTO A FUND PREDICT FUTURE PERFORMANCE OF THE FUND?

Table IX
Return Predictability Regressions

This table summarizes a regression of funds' long-term future performance on mutual fund flows from DC and non-DC investors and additional control variables. The table uses six different performance measures. Standard errors are reported in parentheses and adjusted for clustering at the fund level. The regressions also include time fixed effects. *, **, and *** denote estimates that are statistically different from zero at the 10%, 5%, and 1% significance levels.

	Raw Performance	Objective Code-Adjusted Performance	Style-Adjusted Performance	CAPM-Adjusted Performance	Fama-French-Adjusted Performance	Carhart-Adjusted Performance
DC Flow	-0.262 (0.163)	-0.260 (0.160)	-0.091 (0.133)	-0.176 (0.144)	0.114 (0.128)	-0.011 (0.121)
Non-DC Flow	-1.567*** (0.455)	-1.102** (0.436)	-0.815** (0.351)	-1.261*** (0.405)	-0.657** (0.286)	-0.948*** (0.276)
<i>p</i> -value for <i>F</i> -test	0.009***	0.074*	0.059*	0.016**	0.024**	0.004***
DC Flow = Non-DC Flow						

ECONOMICS OF MUTUAL FUNDS

Mutual fund flows do not seem to predict future fund performance in a positive way

Past mutual fund “alpha” does not seem to strongly predict future “alpha” (except there does seem to be some persistence of negative net performance)

What is happening here?

Could these relations happen in a rational model of the world?

ECONOMICS OF MUTUAL FUNDS

What happens if a mutual fund manager has skill and beats his/her benchmark by a wide margin (earns ALPHA)?

Manager may demand higher compensation

Investors will likely flood the fund with new capital

If there are decreasing returns to scale for the fund manager (only a limited amount of good ideas), extra cash to invest will yield lower expected returns going forward

As fund grows in size, its trades might be large enough to move prices

ECONOMICS OF MUTUAL FUNDS

What happens if a mutual fund manager has skill and beats his/her benchmark by a wide margin (earns ALPHA)?

In equilibrium, economic factors should eventually drive fund ALPHA to zero!

ECONOMICS OF MUTUAL FUNDS

This is the Berk and Green (2004) model

Important contribution, as it highlights that
“... the lack of persistence in [mutual fund]
returns does not imply that differential ability
across managers is nonexistent or
unrewarded or that gathering information is
socially wasteful”

Model still has the implication that past good
fund performance should not be a great
indicator of future good performance!

Economic forces in place to drive a talented
fund manager's alpha to zero

ECONOMICS OF MUTUAL FUNDS

Pastor, Stambaugh, and Taylor (2015) empirically study the nature of returns to scale in the mutual fund industry (active management)

They make a distinction between industry-level and firm-level decreasing returns to scale from having more funds to invest

They conclude that there is “strong evidence of decreasing returns at the industry level”

Emphasizes that economic forces are in place to drive any alpha from skilled asset management to zero (due to competition from other funds in the industry)

ECONOMICS OF MUTUAL FUNDS



Source: O'Sullivan (1874)

SEARCHING FOR ALPHA! WHAT IF YOU FIND IT?



Source: VeeDunn (2012)

SEARCHING FOR ALPHA! WHAT IF YOU FIND IT?

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SEARCHING FOR ALPHA! WHAT IF YOU FIND IT?

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SEARCHING FOR ALPHA! WHAT IF YOU FIND IT?

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INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

Performance of Mutual Funds & Search for Alpha

International Evidence on Active Mutual Fund Management



MUTUAL FUNDS

MUTUAL FUNDS: INTERNATIONAL PERSPECTIVE



Source: geralt | Pixabay (2016)

MUTUAL FUNDS AROUND THE WORLD

What are mutual funds like around the world?

What is the breakdown of mutual funds across countries (explicit index, “closet” index, and actively managed)?

How do investor costs vary both across the three type of mutual funds as well as across countries?

MUTUAL FUNDS AROUND THE WORLD

Cremers, Ferreira, Matos, and Starks (2016) study characteristics of passively and actively managed equity funds across a wide sample of 22 regions/countries from 2002-2010 (will focus on their December 2010 results)

Also, define “closet” index funds using “**Active share**” following Cremers and Petajisto (2009):

$$\text{Active share} = \frac{1}{2} \sum_{i=1}^N |w_{\text{fund},i} - w_{\text{benchmark},i}|$$

ACTIVE SHARE MEASURE

$$\text{Active share} = \frac{1}{2} \sum_{i=1}^N |w_{\text{fund},i} - w_{\text{benchmark},i}|$$

“**Active share**” is summed over all stocks

Active share for a mutual fund will be between zero (identical portfolio weights to the benchmark) and 100% (no overlap with the benchmark)

ACTIVE SHARE MEASURE

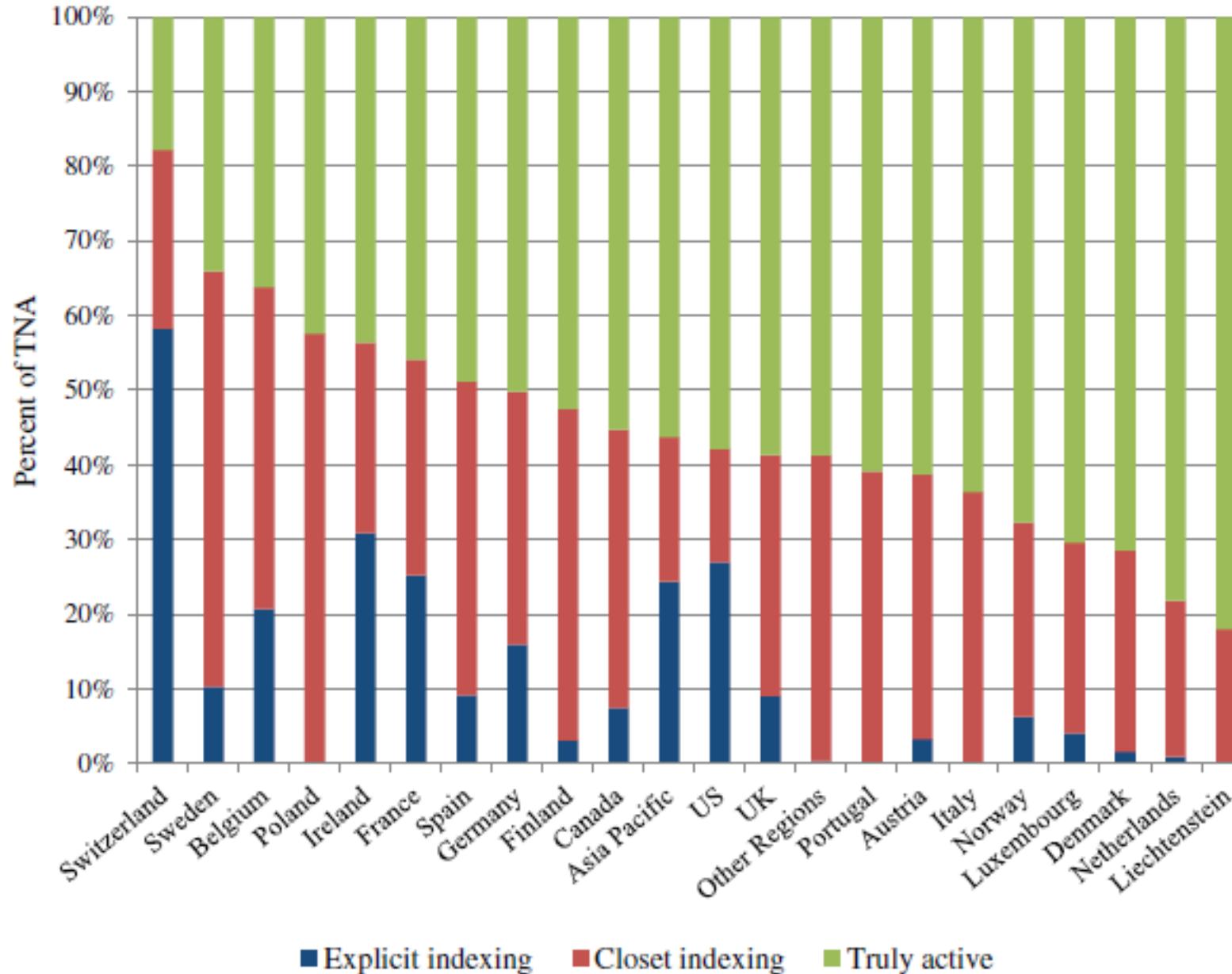
$$\text{Active share} = \frac{1}{2} \sum_{i=1}^N |w_{\text{fund},i} - w_{\text{benchmark},i}|$$

Cremers, Ferreira, Matos, and Starks (2016) classify an actively-managed fund with an *active share* below 60% as a “closet indexer”

These funds have more than a 40% overlap of fund portfolio weights with their benchmark portfolio weights

Actively-managed funds that are really closet indexers will basically underperform for investors by definition because of their expenses!

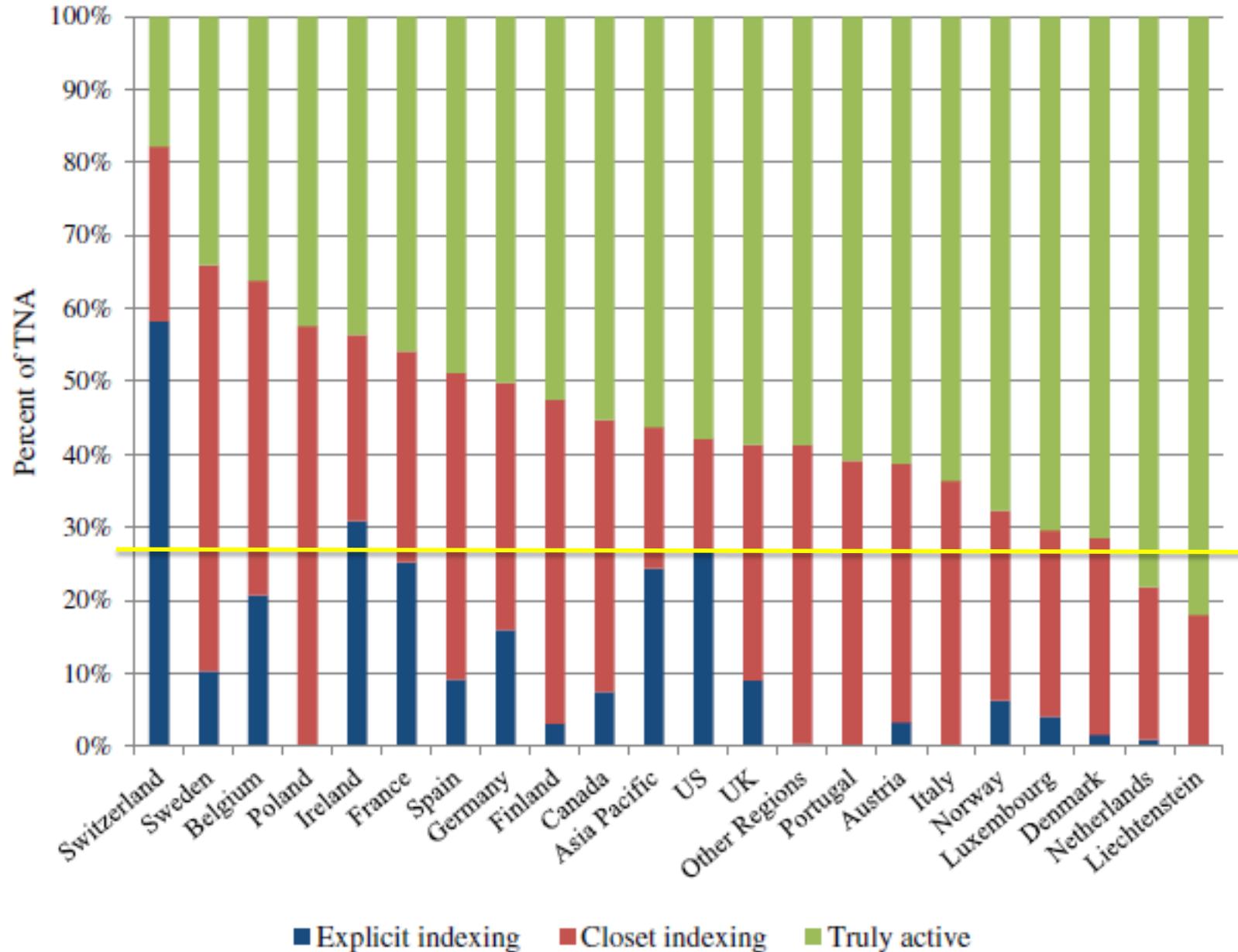
EXPLICIT AND CLOSET INDEXING, BY COUNTRY



Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 1)

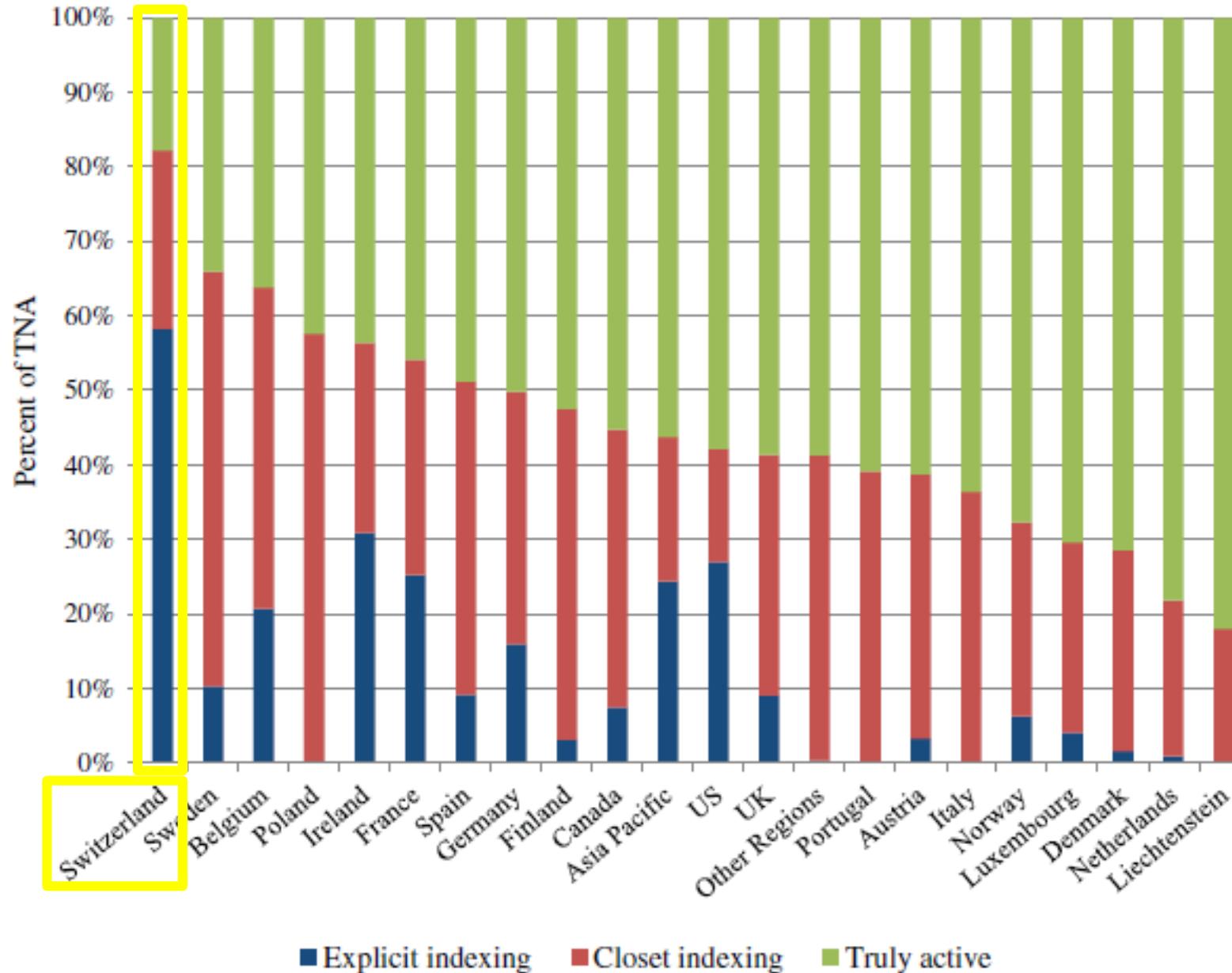
■ Explicit indexing ■ Closet indexing ■ Truly active

EXPLICIT AND CLOSET INDEXING, BY COUNTRY



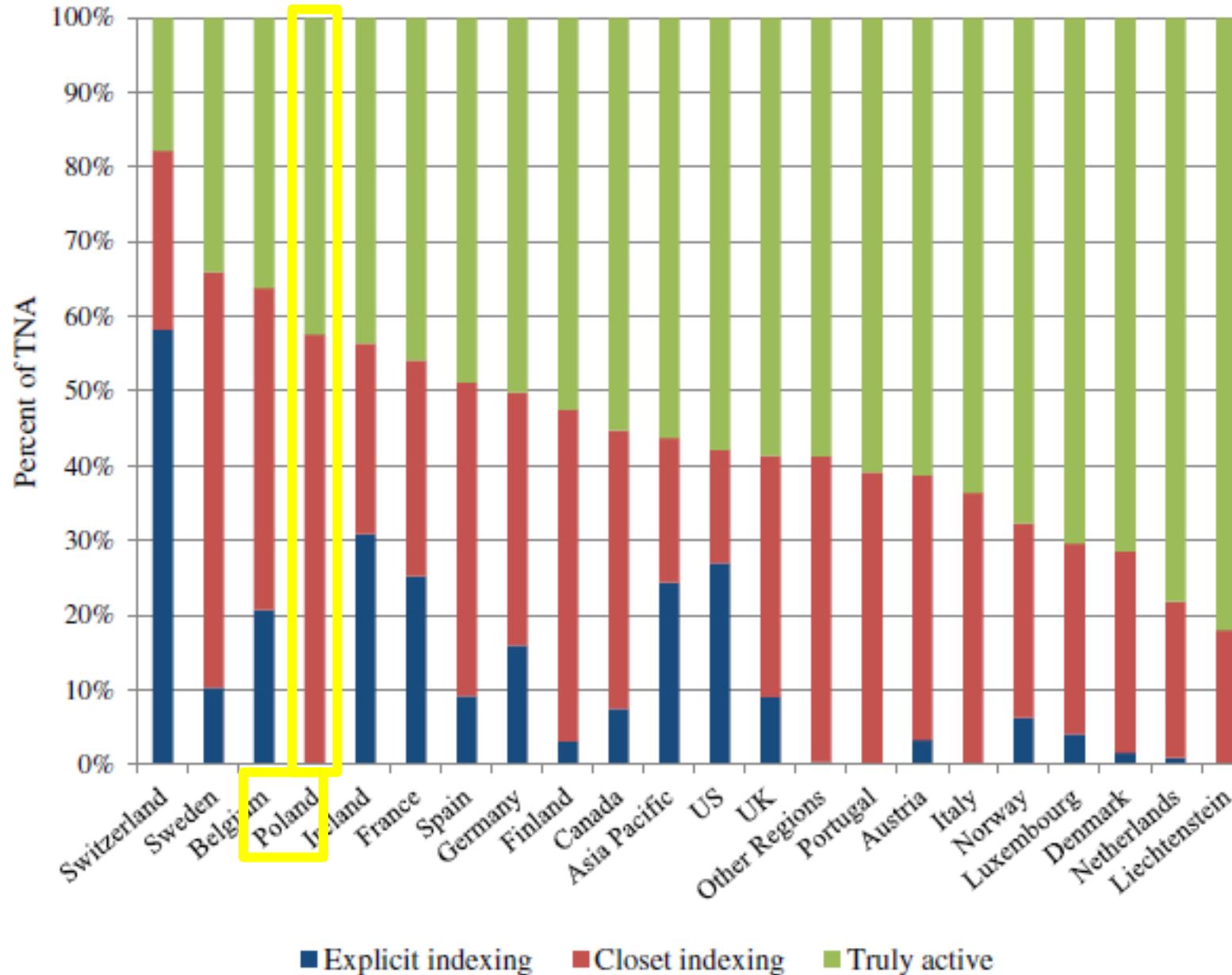
Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 1)

EXPLICIT AND CLOSET INDEXING, BY COUNTRY



Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 1)

EXPLICIT AND CLOSET INDEXING, BY COUNTRY



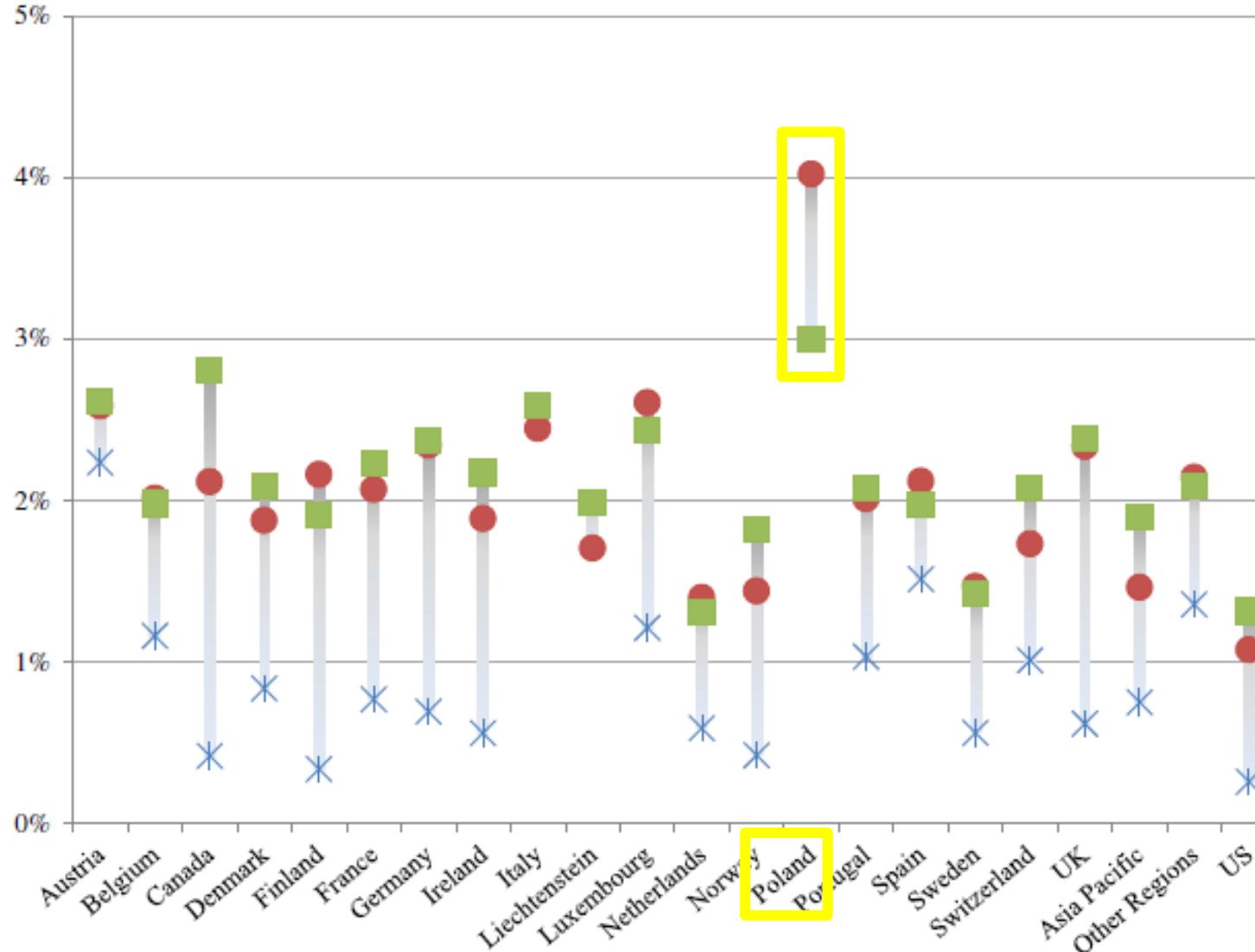
Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 1)

MUTUAL FUND COSTS AROUND THE WORLD

Cremers, Ferreira, Matos, and Starks (2016) also study investor mutual fund costs around the world

Define the total investor cost as the annual expense ratio plus one-fifth of the front-end load (if any)

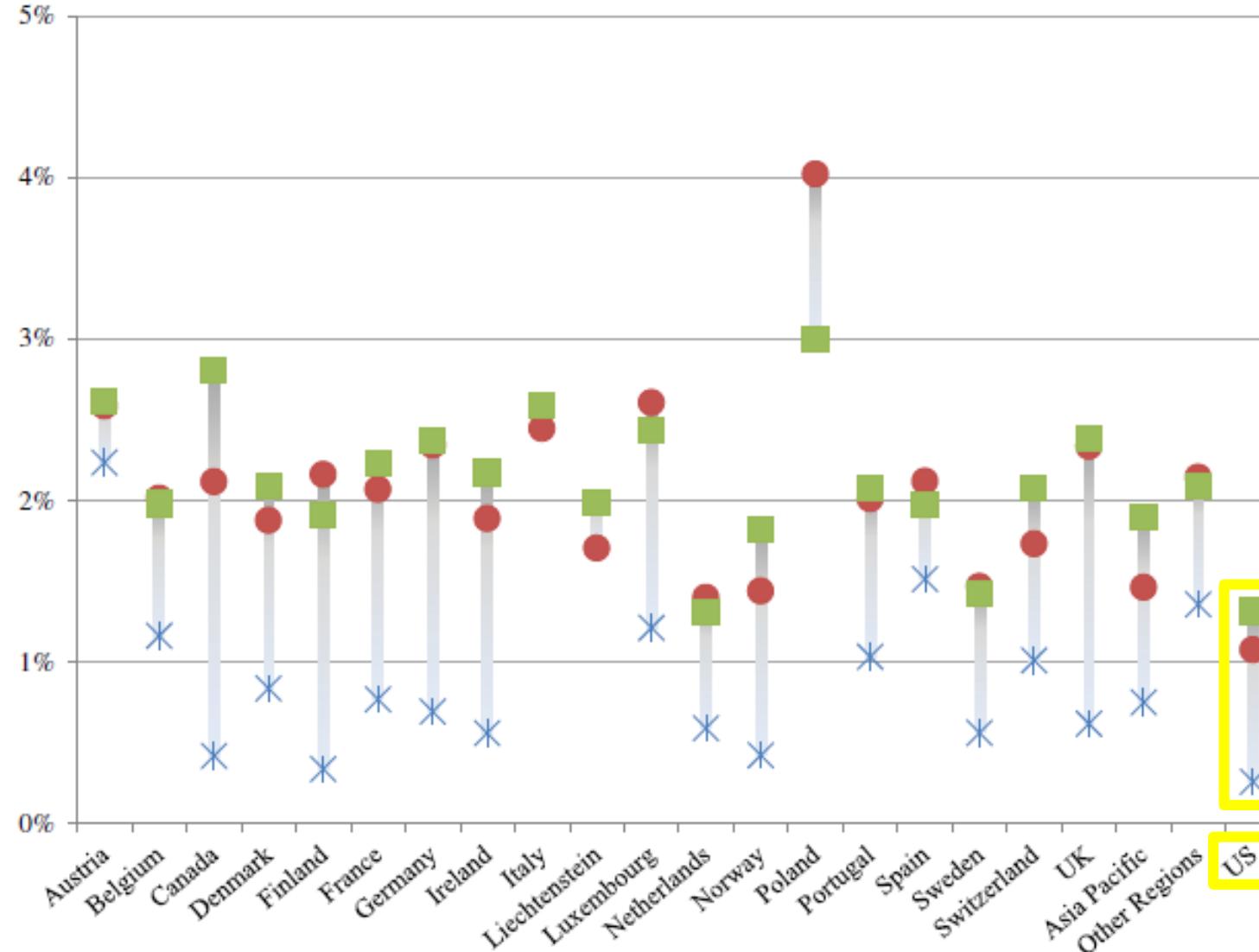
AVERAGE TOTAL COST OF MFUNDS, BY COUNTRY



*Explicit indexing ●Closet indexing ■Truly active

Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 3)

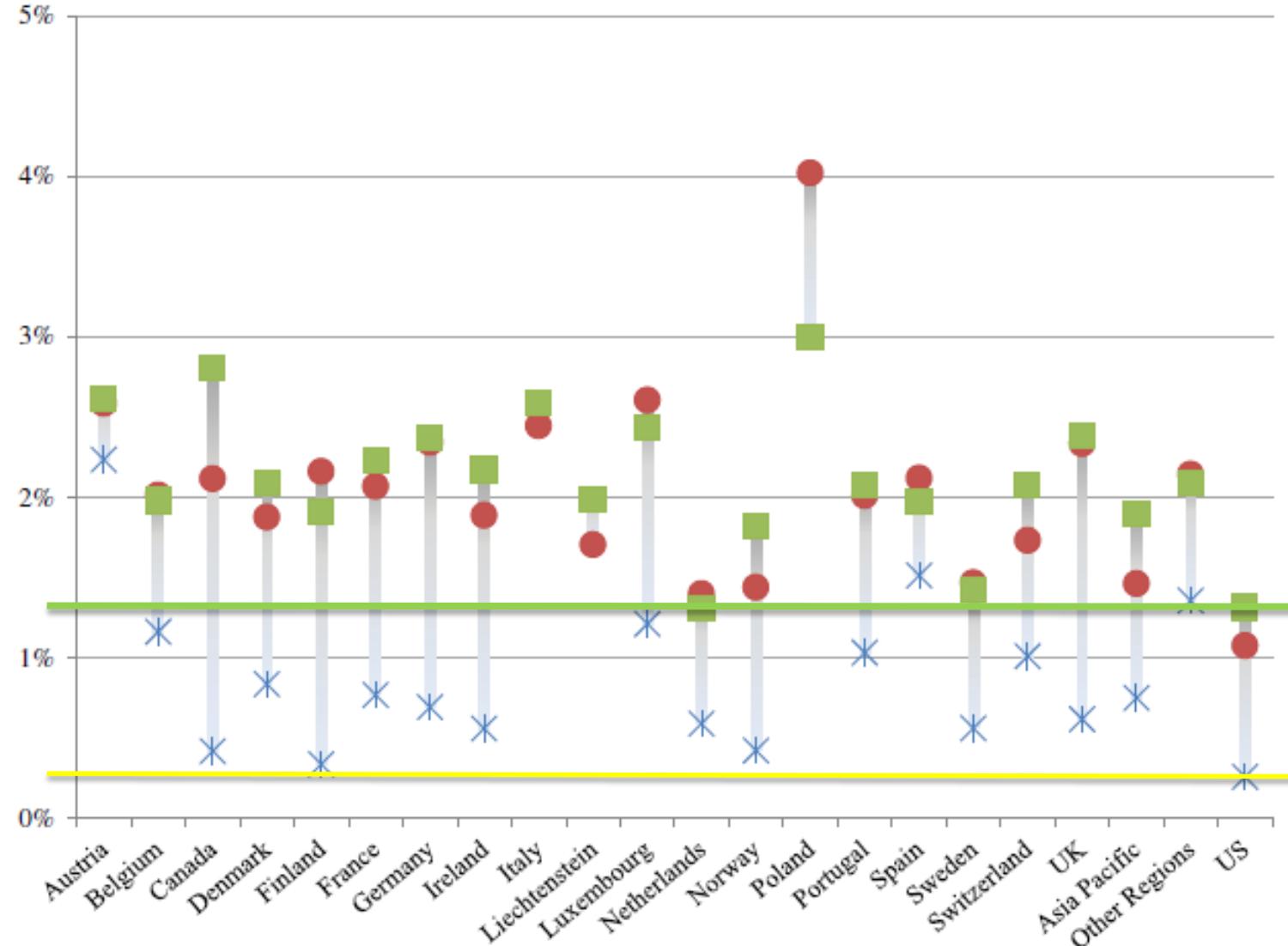
AVERAGE TOTAL COST OF MFUNDS, BY COUNTRY



* Explicit indexing ● Closet indexing ■ Truly active

Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 3)

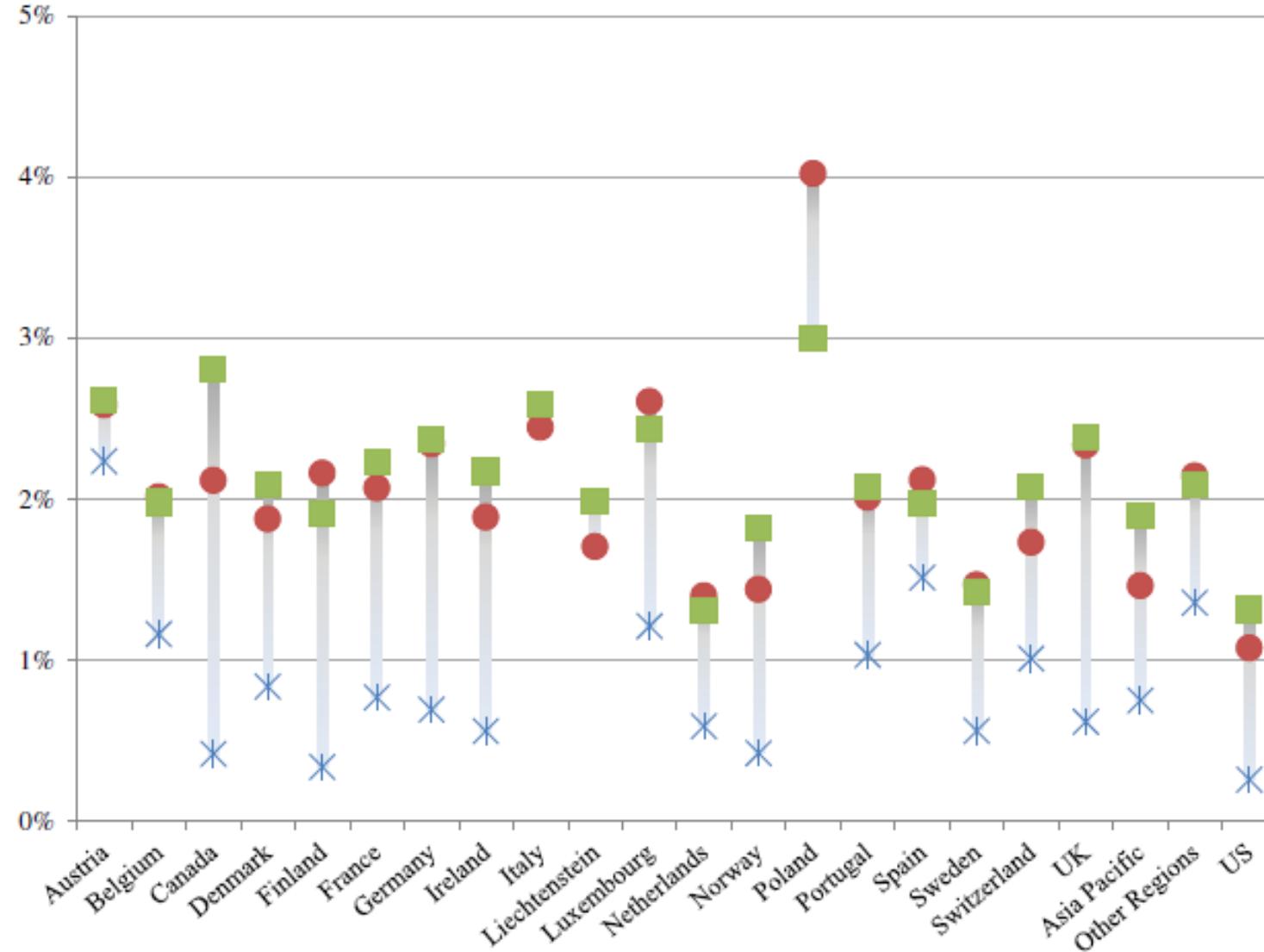
AVERAGE TOTAL COST OF MFUNDS, BY COUNTRY



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Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 3)

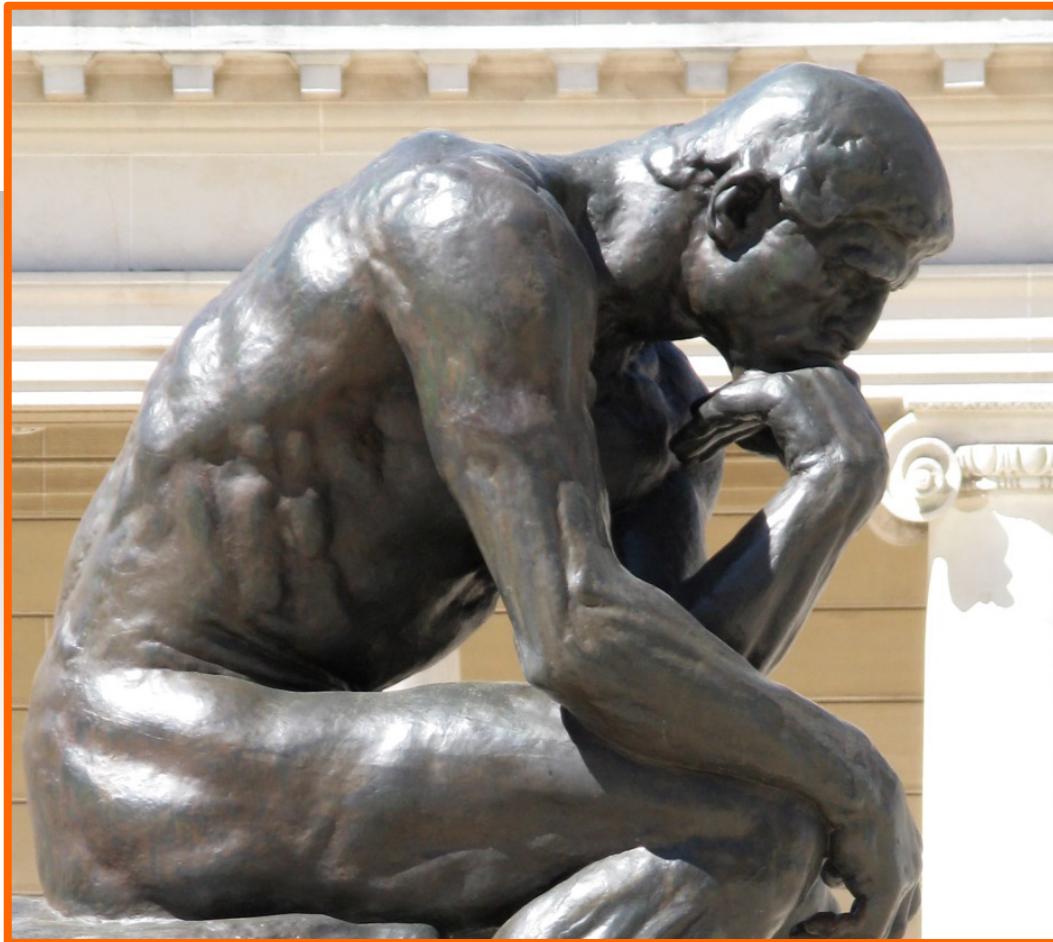
AVERAGE TOTAL COST OF MFUNDS, BY COUNTRY



*Explicit indexing ● Closet indexing ■ Truly active

Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 3)

PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

QUESTION

In what country do you want to be a mutual fund manager?

DISCUSSION OF QUESTION

In what country do you want to be a mutual fund manager?

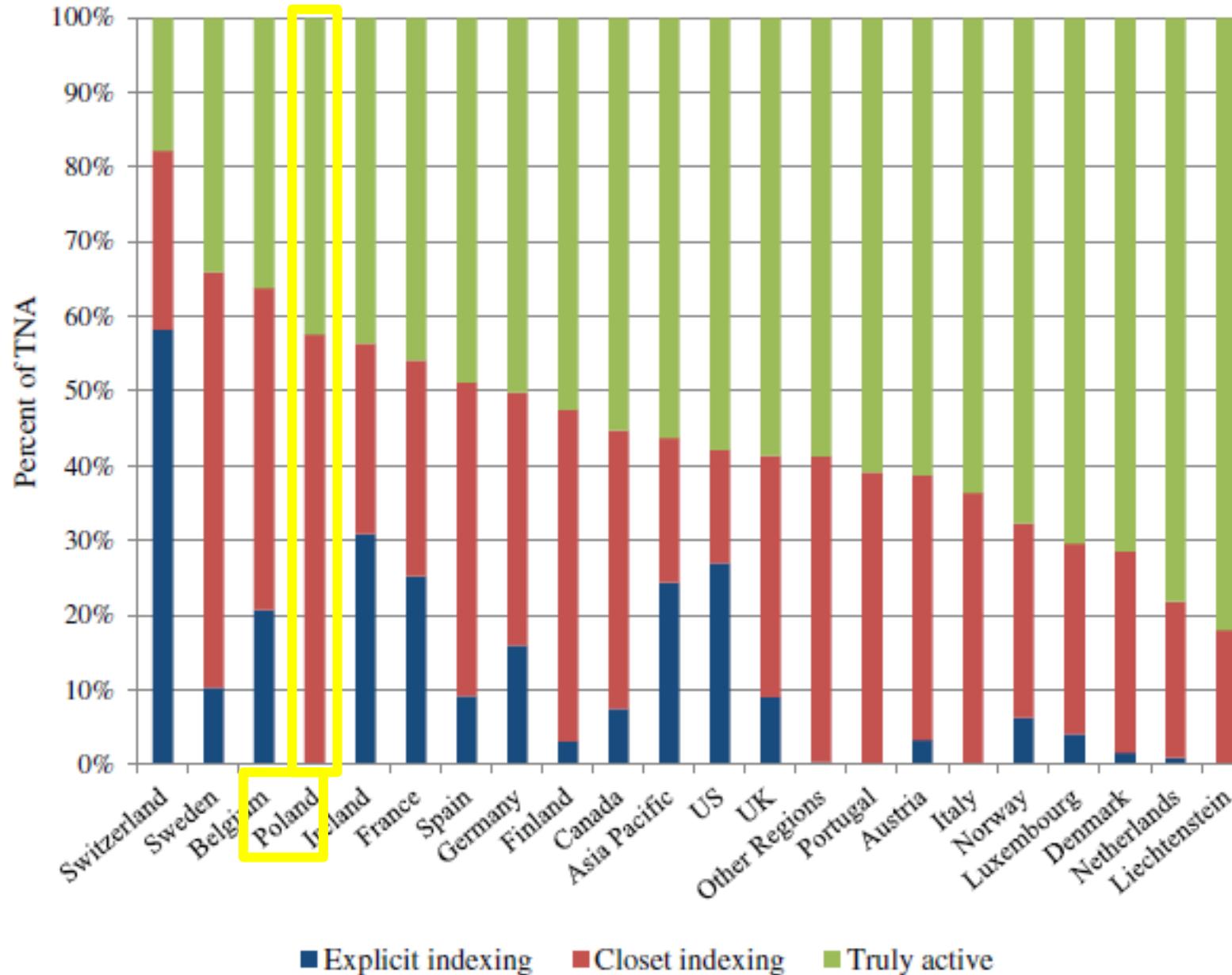
Loaded question ... BUT ...

TIME TO GO TO POLAND!



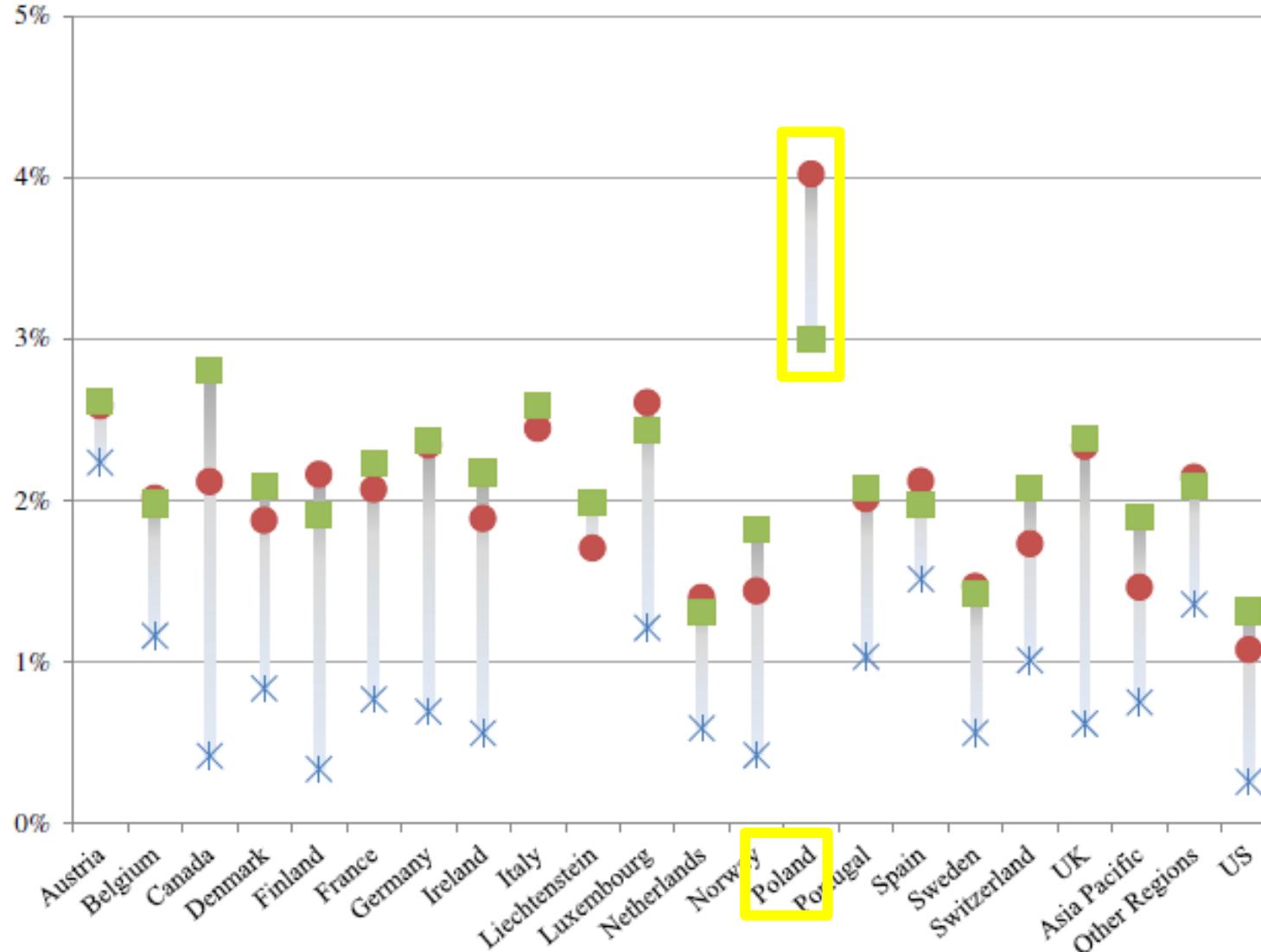
Source: TUBS (2011)

EXPLICIT AND CLOSET INDEXING, BY COUNTRY



Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 1)

AVERAGE TOTAL COST OF MFUNDS, BY COUNTRY



*Explicit indexing ●Closet indexing ■Truly active

Source: Cremers, Ferreira, Matos, & Starks (2016, Figure 3)

ONLY ONE PROBLEM ...



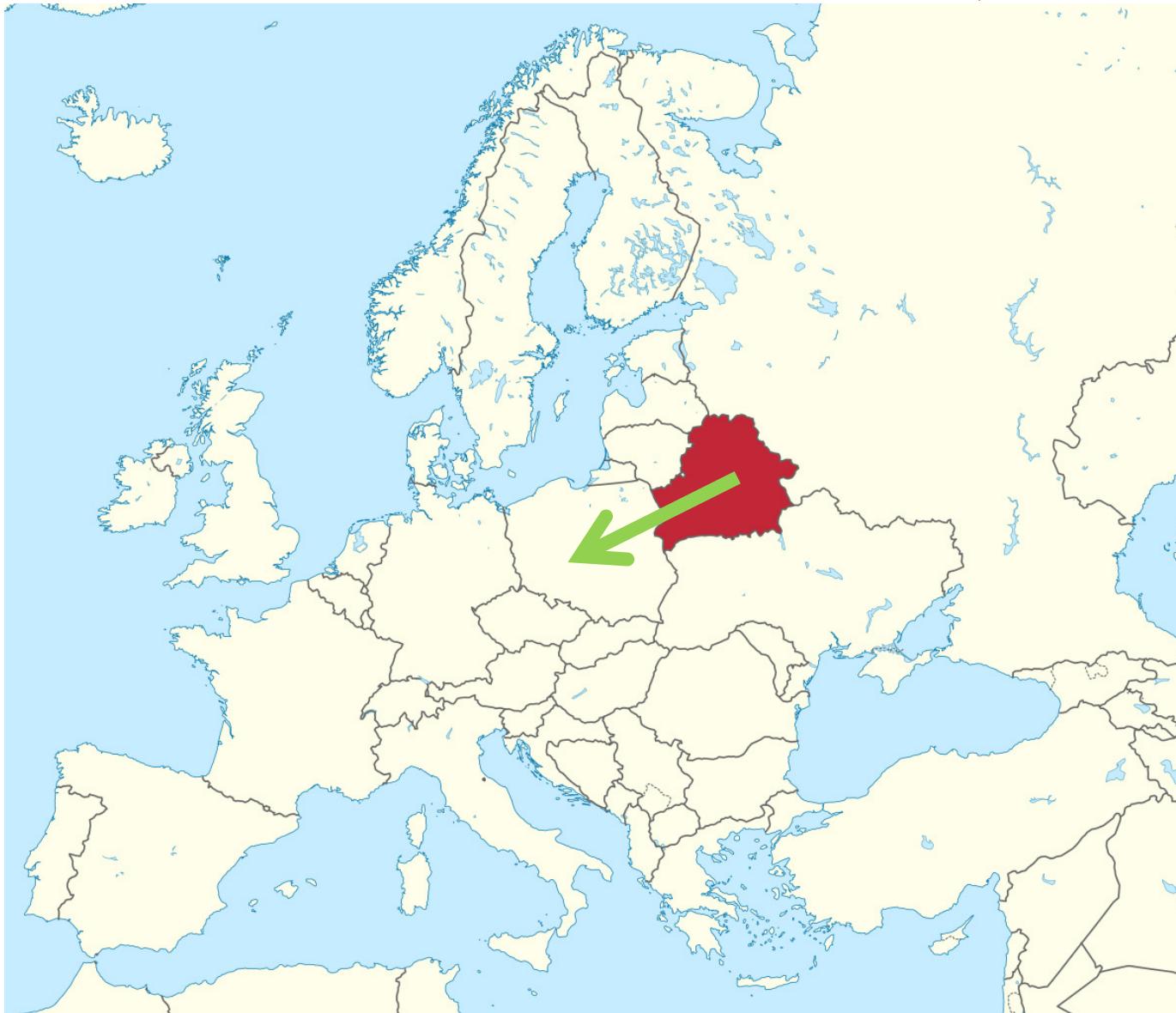
Source: TUBS (2011)

ONLY ONE PROBLEM ... THAT IS BELARUS ...



Source: TUBS (2011)

TIME TO GO TO POLAND, AND MANAGE SOME MUTUAL FUNDS!



Source: TUBS (2011)

TIME TO GO TO POLAND, AND MANAGE SOME MUTUAL FUNDS!



Source: TUBS (2011)

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