

The Behavior of Individual Investors

Tangerine Lecture in Finance

Terrance Odean
UC Berkeley
September 14, 2017

Availability

Shares



Class A Common Stock

- **What do we know about investor behavior?**
- Why does it matter?
- What can investors do?

Investor Biases

- **Confusion about probability → Underdiversify.**
- Overconfidence → Trade too much.
- Desire to reduce regret → Cling to losers.
- Limited attention → Buy attention grabbing stocks.
- Confusion about probability → Chase performance.

Underdiversification

- Bill Gates

vs.

- Enron employees

62% of Enron employee 401(k) investments were in company stock

Investor Biases

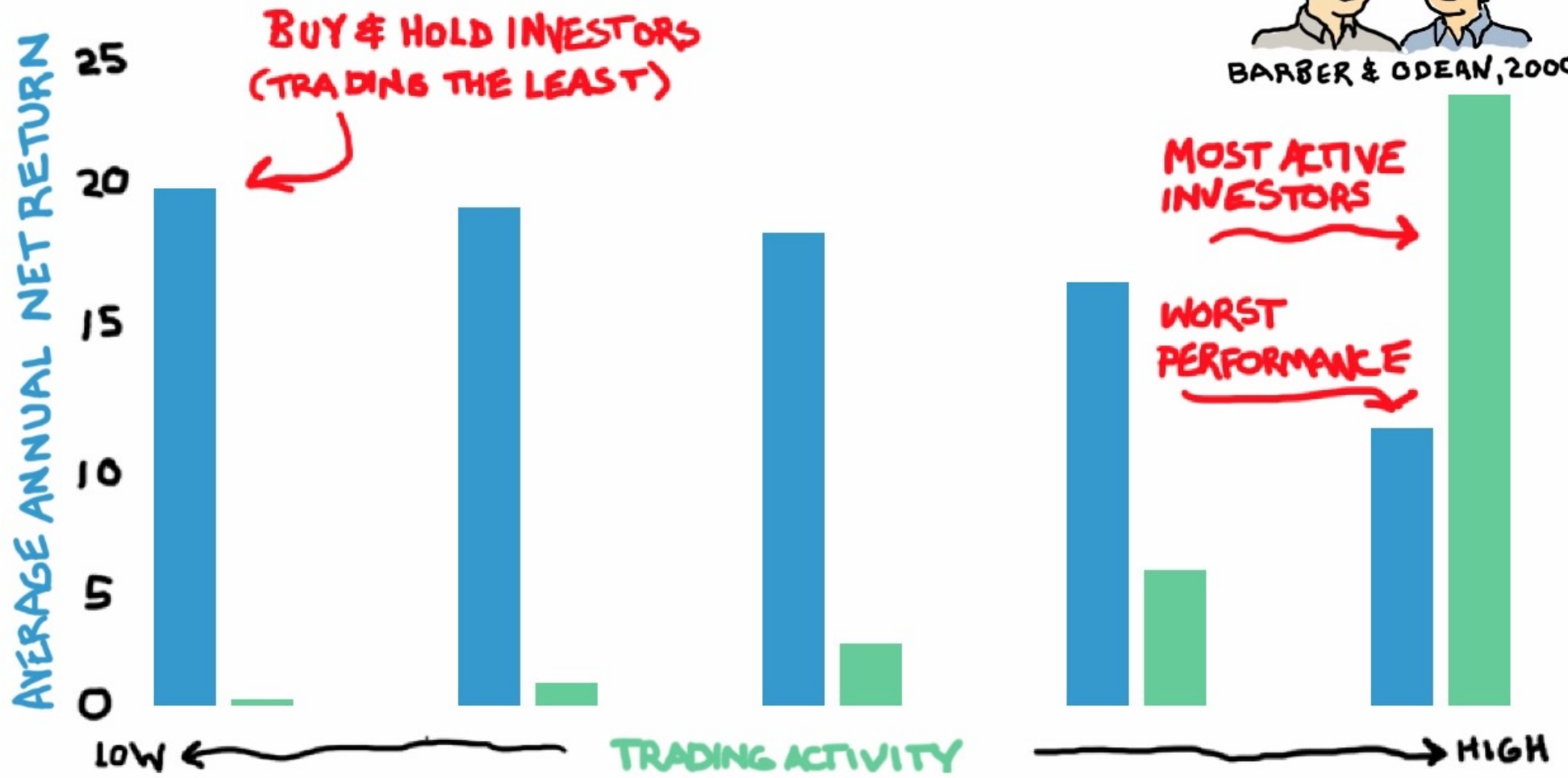
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When All Traders Are Above Average

(i.e., overconfident) Odean, 1998, *Journal of Finance*

- Trade more.
- Earn less.
- Underdiversify.
- Increase market volatility.

TRADING IS HAZARDOUS TO YOUR WEALTH



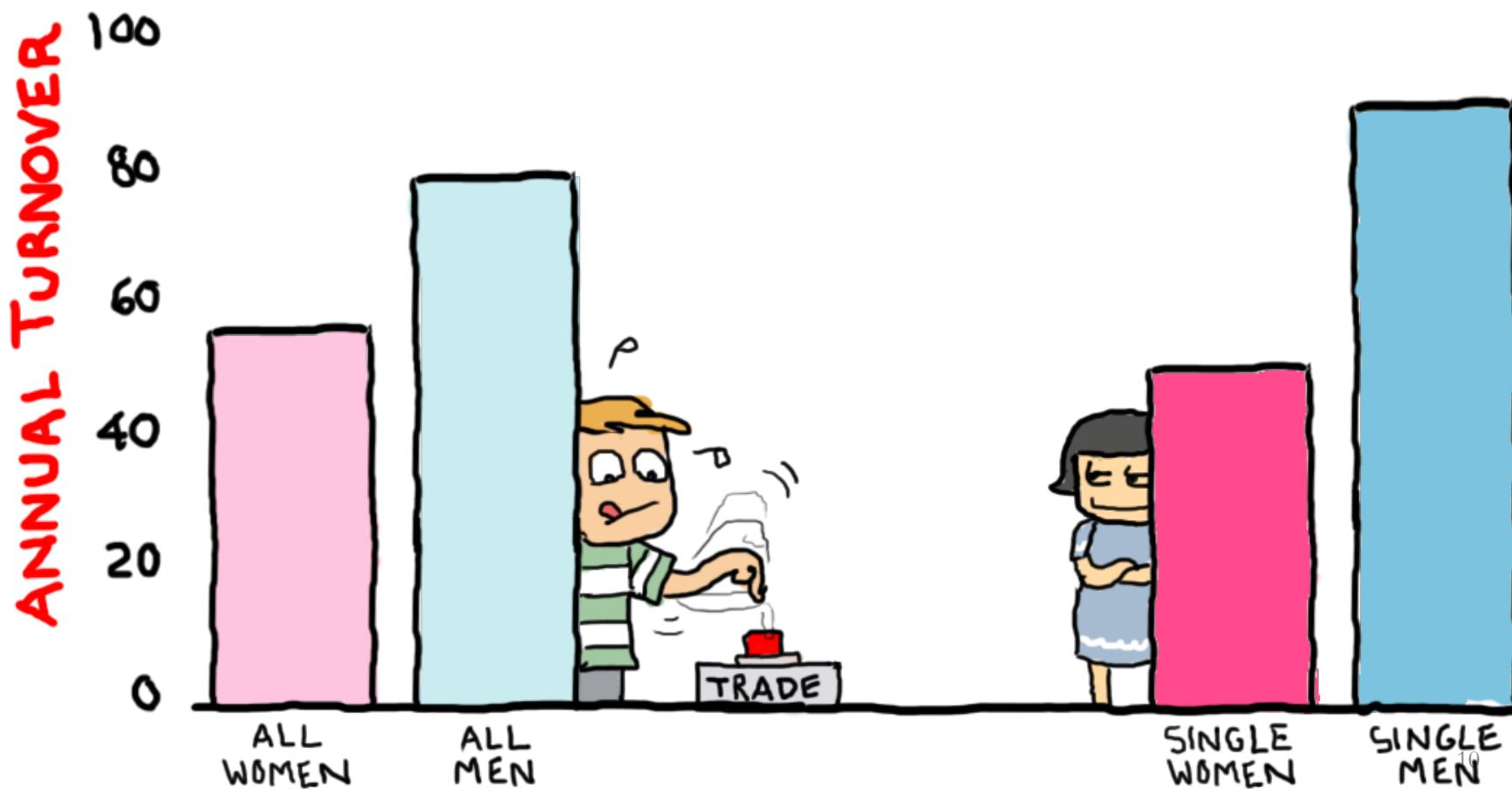
"Overall, men claim more ability than do women, but this difference emerges most strongly on ... masculine task[s]."

Deaux and Ferris (1977)

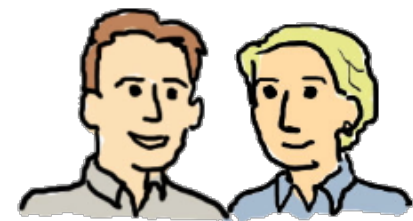
BOYS WILL BE BOYS



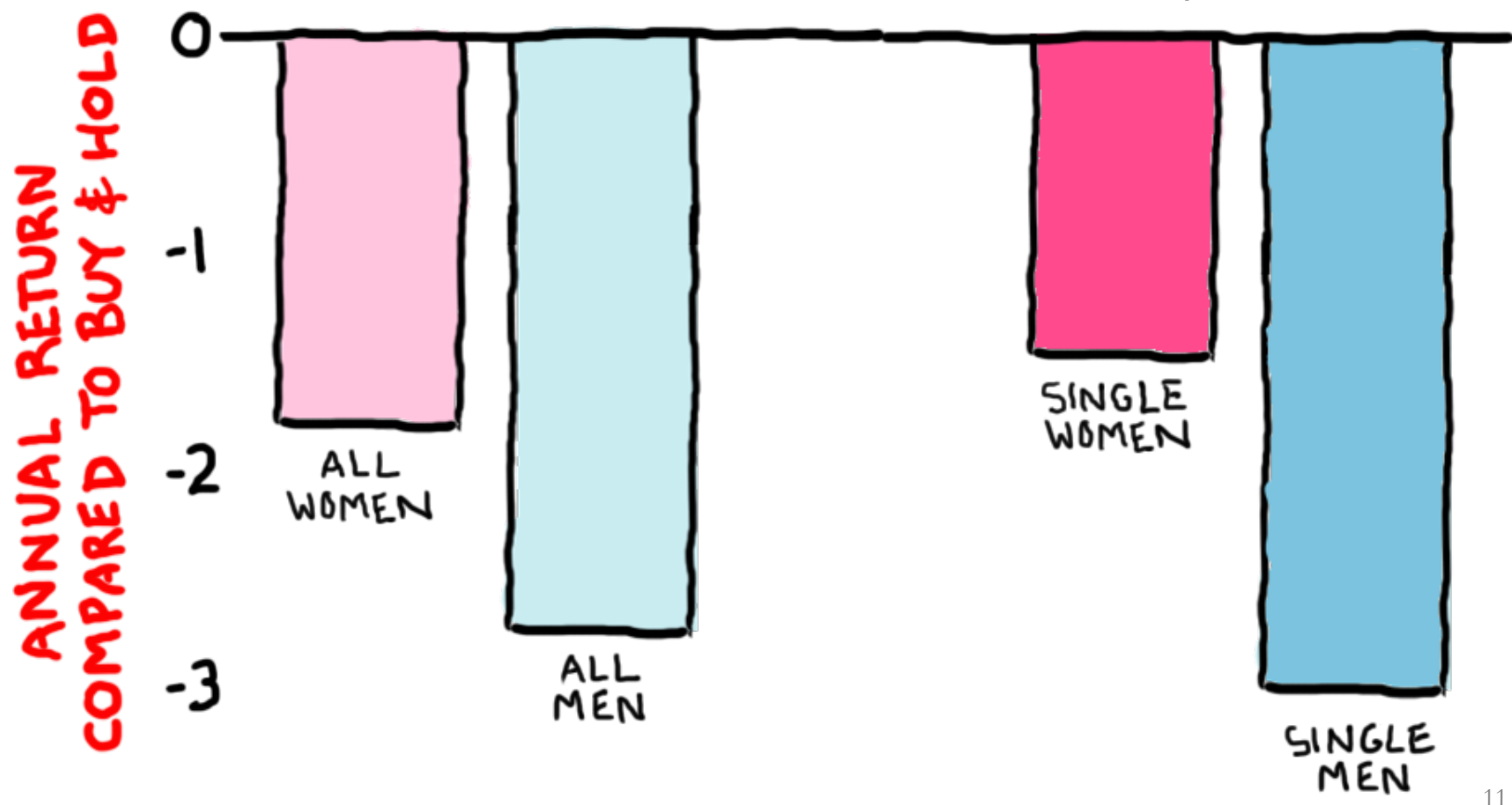
BARBER & ODEAN, 2001



BOYS WILL BE BOYS



BARBER & ODEAN, 2001



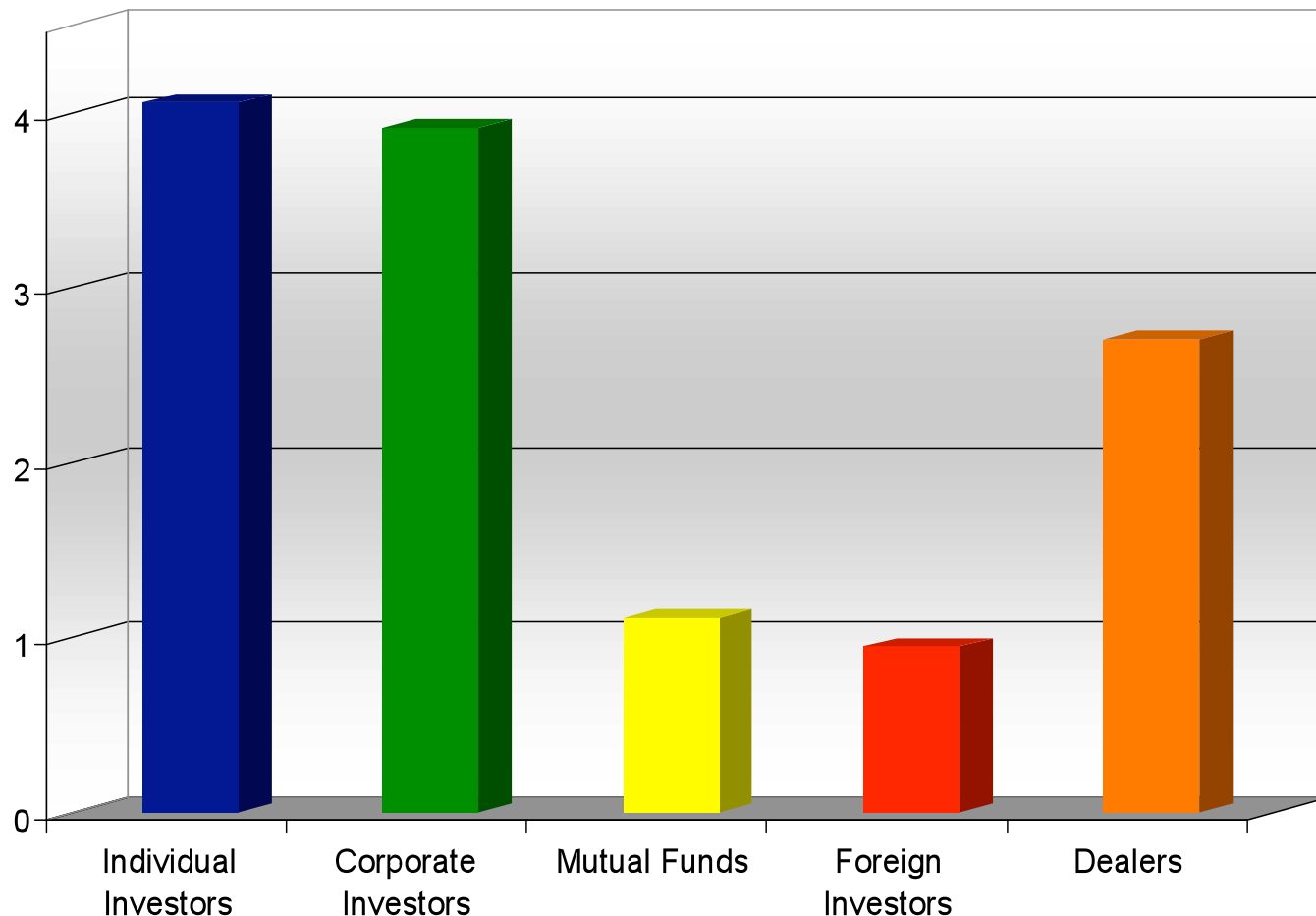
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Disposition Effect in Taiwan

Barber, Lee, Liu, Odean, 2007, European Financial Management

Proportion of Gains Realized / Proportion of Losses Realized



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All that Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors

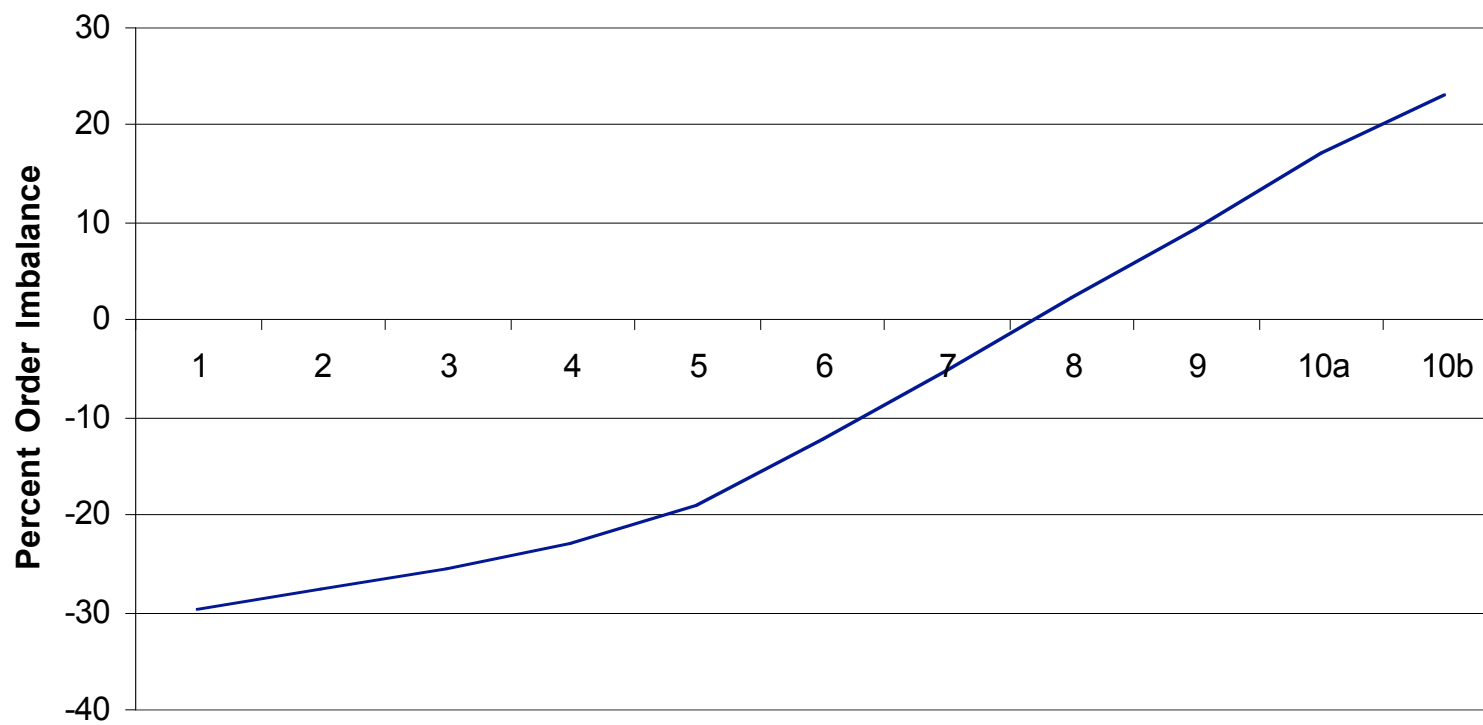
Barber and Odean, *Review of Financial Studies*, 2008

- Thousands of stocks.
- Bounded rationality and processing ability.
- Limit search to stocks that catch attention.
- Investors buy stocks that catch their attention.

Attention

When faced with multifaceted problems or lots of choices, what we do and don't pay attention to may influence our decision more than beliefs or preferences.

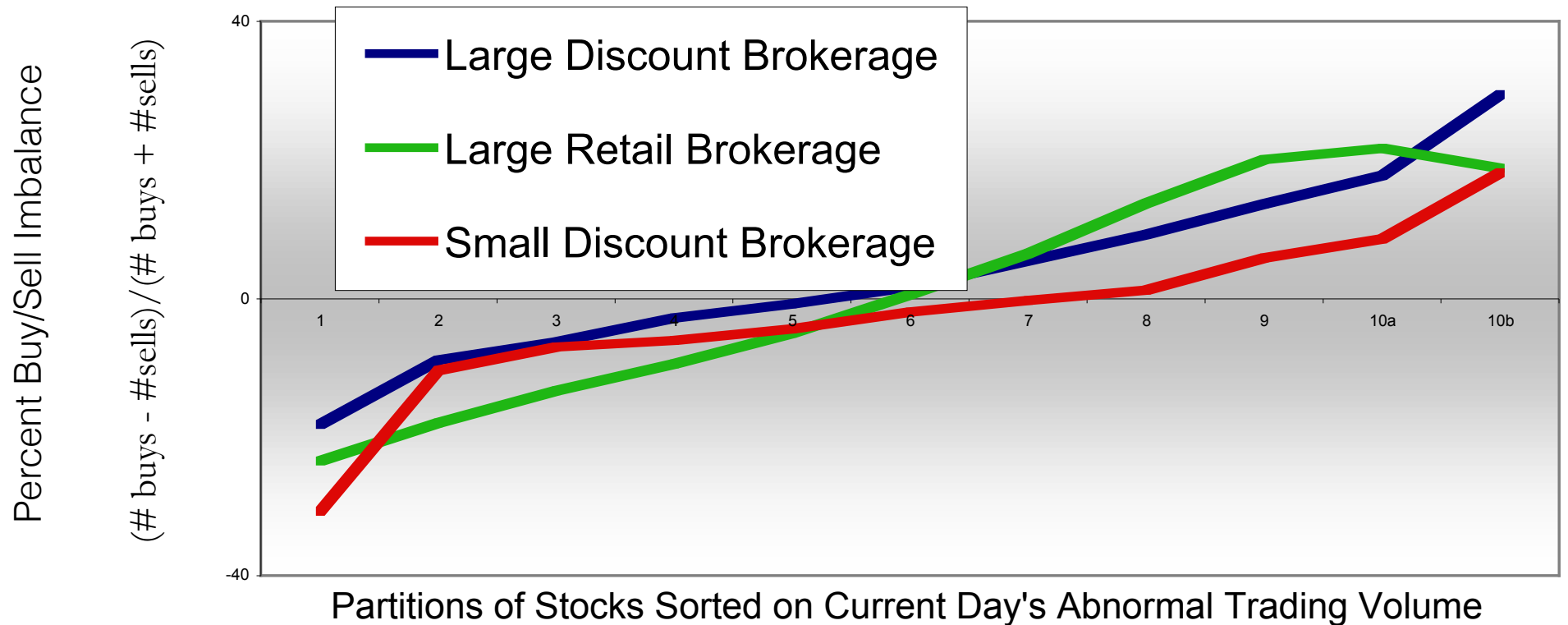
Simulation Volume Sort



Partitions Sorted on Same Period Trading Volume

Abnormal Volume Sort Individuals

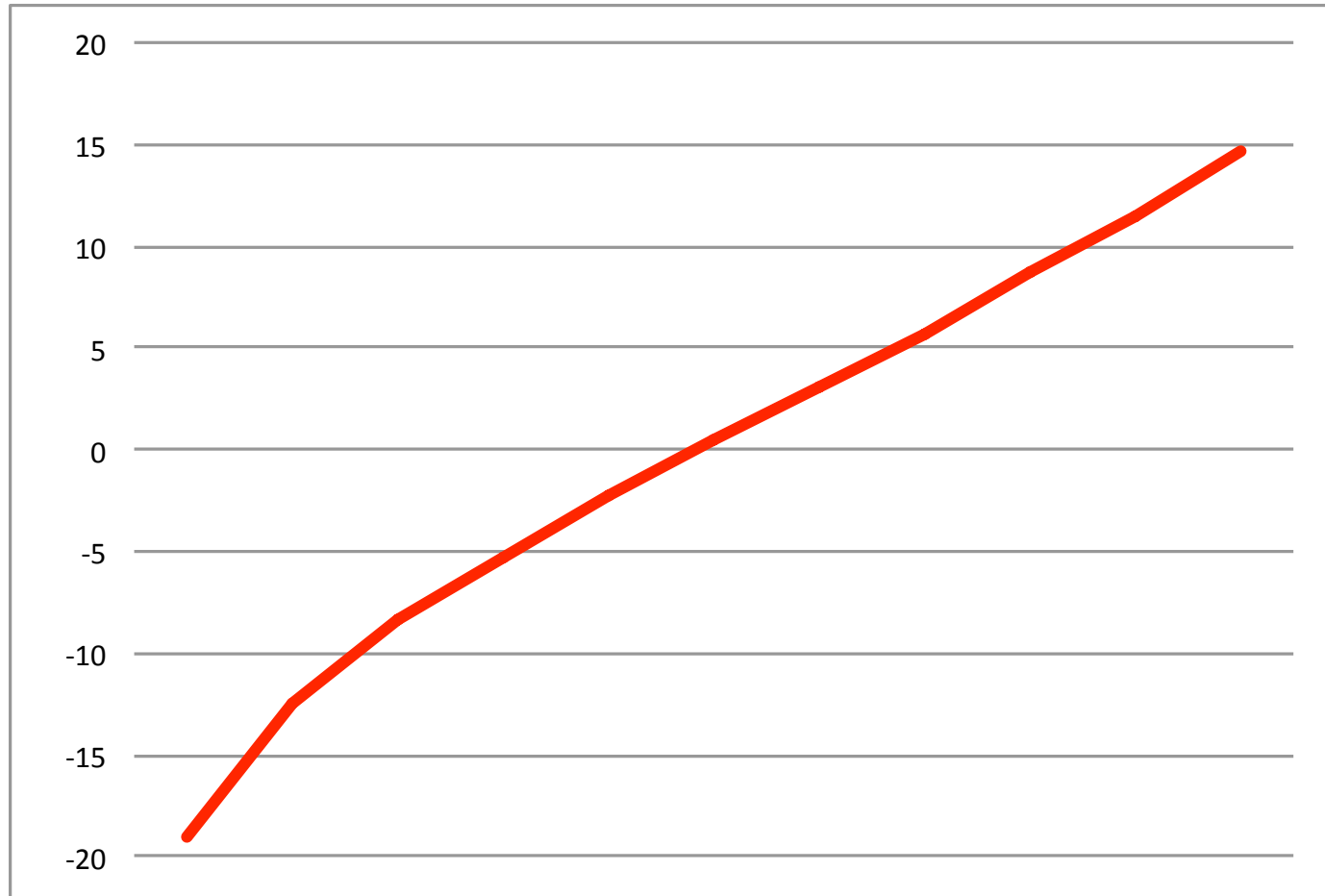
Buy/Sell Imbalance



Daily Order Imbalance for Smallest Trades Sorted by **Same Day** Abnormal Volume

1983-2000 TAQ & ISSM Data

$$\% \text{ Order imbalance} = \frac{(\# \text{ buyer initiated trades} - \# \text{ seller initiated trades})}{(\# \text{ buyer initiated trades} + \# \text{ seller initiated trades})} * 100$$



Abnormal Trading Volume

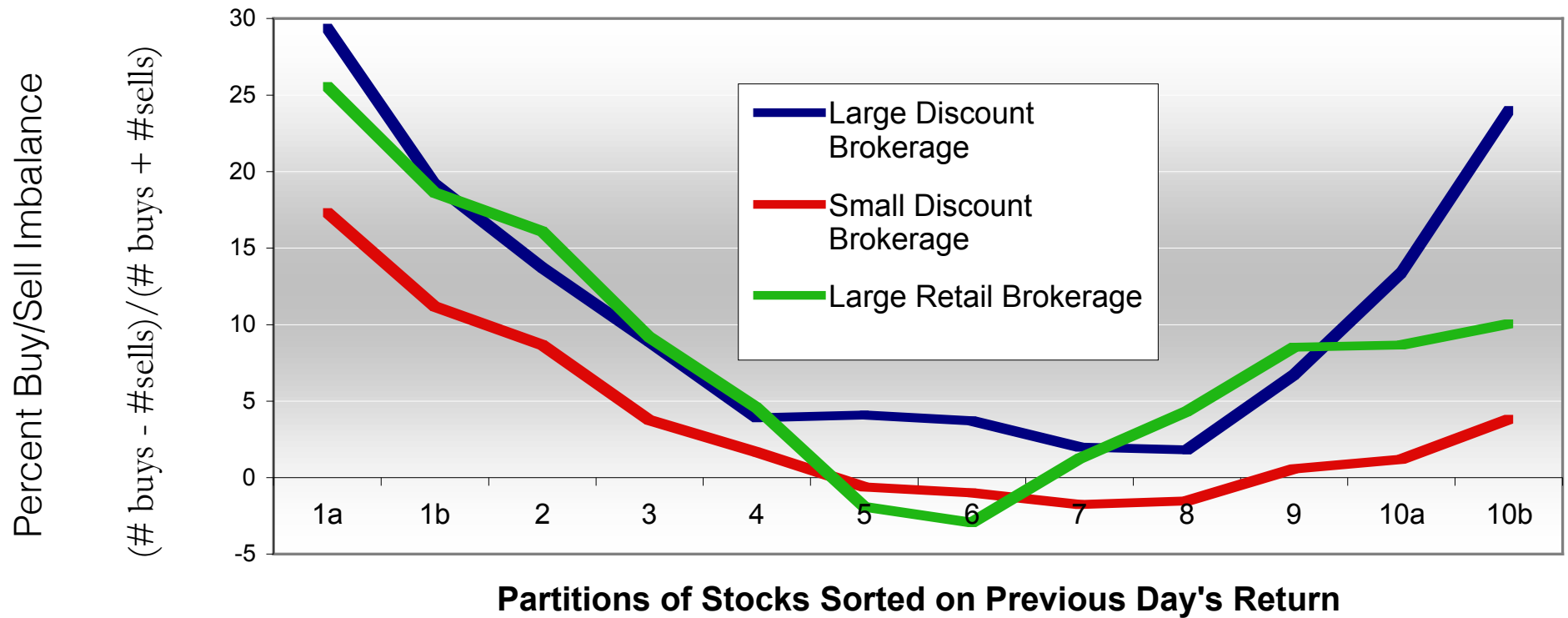
Simulation Return Sort



Partitions Sorted on Previous Period's Return

Return Sort Individuals

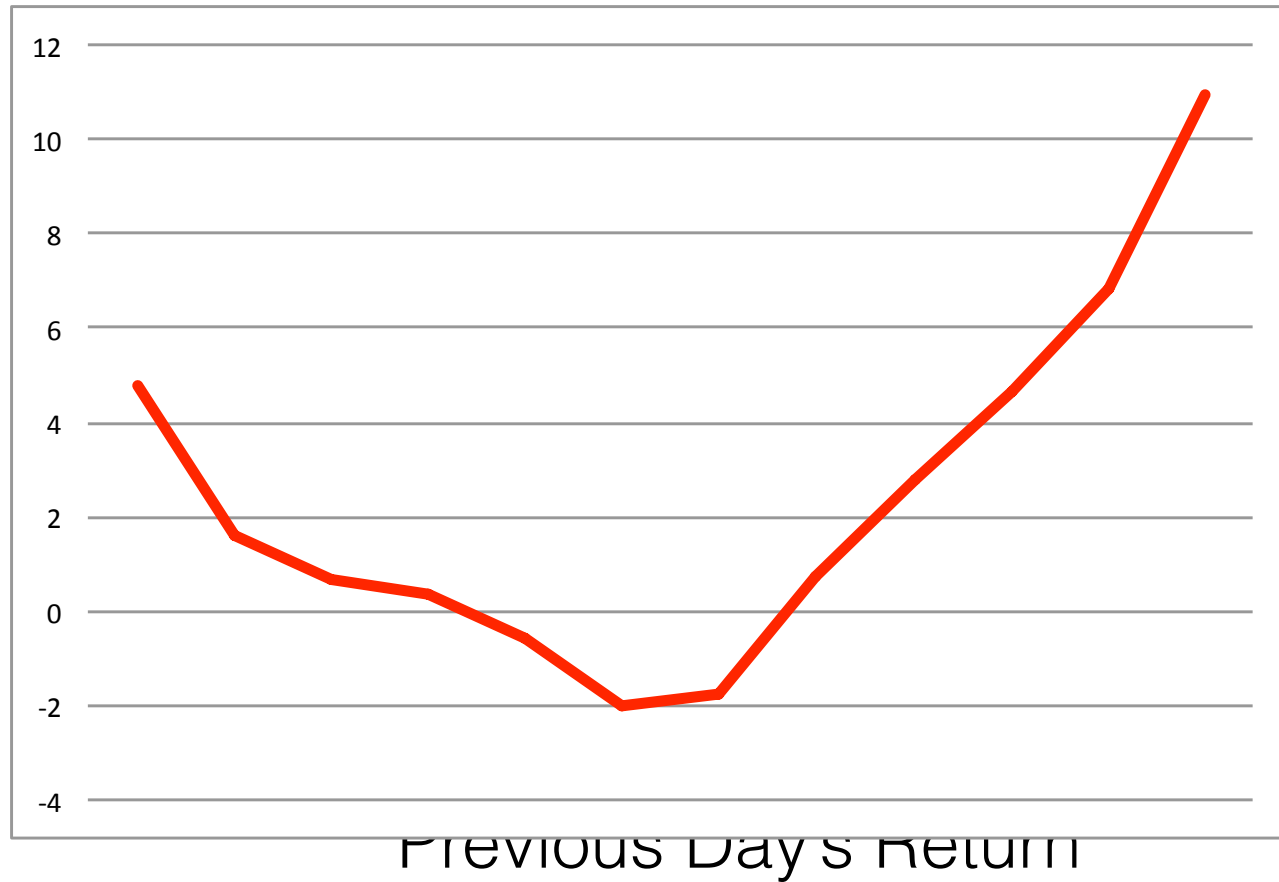
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Daily Order Imbalance for Smallest Trades Sorted by Previous Day Return

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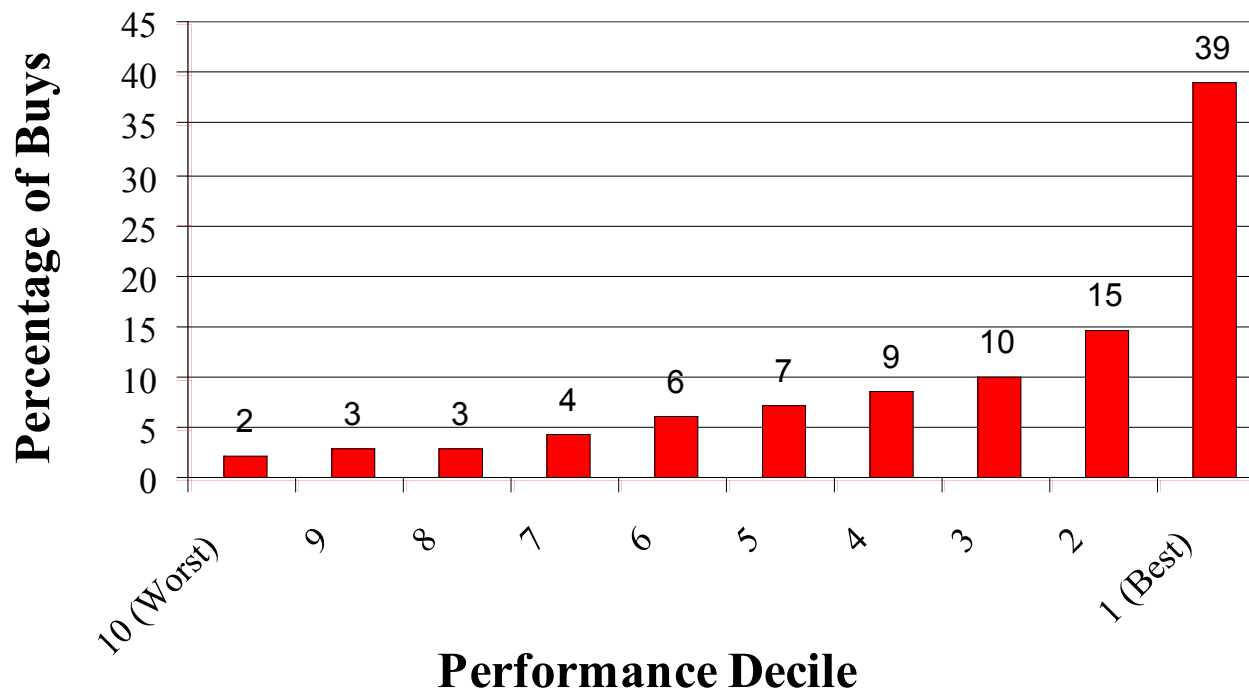
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Mutual Funds: Money Pours into Last Year's Winners

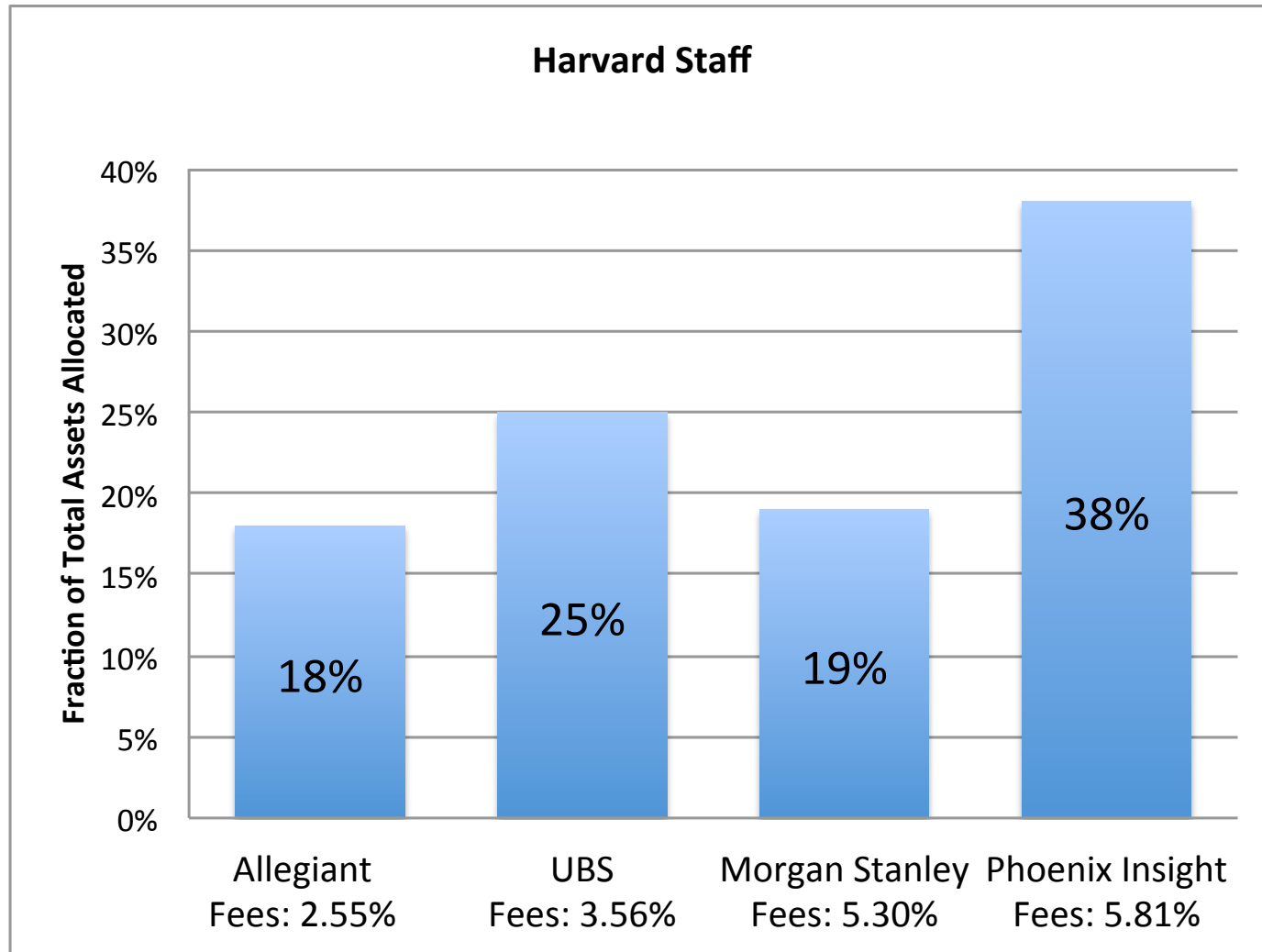


Recency Bias & Limited Attention

Mutual fund and share class	Ticker symbol	Inception date	Minimum opening balance	Expense ratio ^a	Front-end load	Approximate fee on \$10K investment	Longest-horizon return in prospectus ^b
<i>Panel B: Harvard staff experiment (2007)</i>							
Allegiant S&P 500 Index Fund – Class A	AEXAX	10/15/1998	\$500	0.60%	2.50%	\$255	3.08% ^c
Morgan Stanley S&P 500 Index Fund – Class A	SPIAX	9/26/1997	\$1,000	0.64%	5.25%	\$530	3.64% ^c
Phoenix Insight Index Fund – Class A	HIDAX	4/19/1996	\$500	0.73%	5.75%	\$581	7.34% ^d
UBS S&P 500 Index Fund – Class A	PSPIX	10/2/1998	\$1,000	0.70%	2.50%	\$356 ^e	3.80% ^c

Source: Choi, Laibson, & Madrian, 2010

People Ignore Fees & Chase



Las Vegas

COMET



Money Managers

Roulette
players

Farmers

Runners

?

?



Luck

Skill & Effort

- What do we know about investor behavior?
- **Why does it matter?**
- What can investors do?

Just How Much Do Investors Lose from Trade?

Mean Daily Profits: Net of Transaction Costs

	Institutions Millions \$NT	Individuals Million \$NT
Gross Trading Profits	178	(178.0)
Gross Market-timing Profits	46.4	(46.4)
Commissions	(25.6)	(216.9)
Transaction Tax	(27.0)	(228.4)
Net Profits	171.8	(669.7)

Economic Significance

- Net Annual Individual Trading Losses are 2.2% of GDP.
- Individual Trading Losses Represent a 3.8% reduction in annual portfolio performance.
- Institutional Gains Represent a 1.5% increase in annual portfolio performance.
- 46.2 % of individuals' gross daily losses are to foreign investors.
 - \$3.5 million US per day

Welfare of U.S. Investors vs. Taiwanese

- U.S. investors trade less actively
- U.S. individuals are more likely to be trading with an informed institutional investor

- What do we know about investor behavior?
- Why does it matter?
- **What can investors do?**

Serious Investment Advice

- Invest for the long run.
- Buy and hold.
- Diversity.
- Control investment costs.
- Pay attention to taxes.

**The TUMBLE
of 2000!!**

**The PLUNGE
of 2008!!**



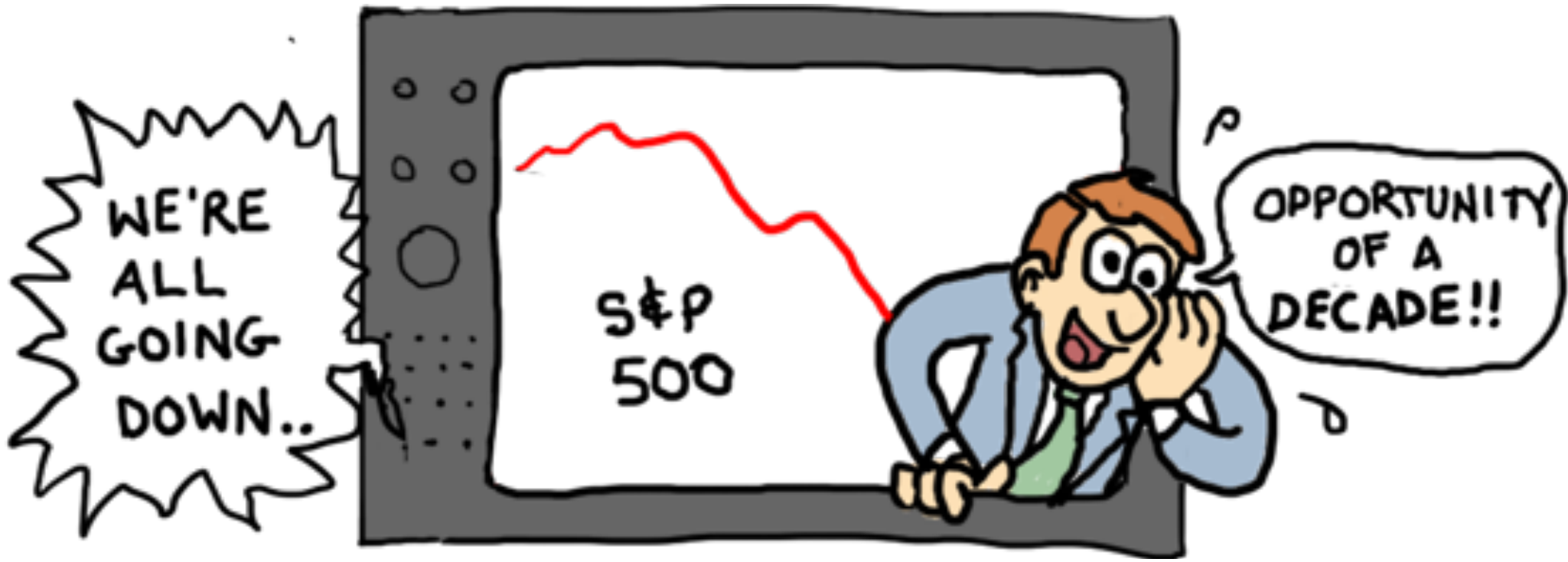
March
2000

October
2007

October
2002

**The S&P 500
BIG DIPPER**

March
2009



Make plan in calm times;

Stick to plan when ride gets rough



Jean-Luc Gatti

@gatti_jl



 Follow

#SdR16 Terrance Odean: "Complexity is the enemy of the consumer" @terranceodean @salonerisparmio @Assogestioni

7:14 AM - 8 Apr 2016



Avoid Unnecessary Complexity

ABBV	ABBVIE INC SHS	N/A	11	60.70	668	0.29
ACN	ACCENTURE PLC SHS	A-2-7	6	115.48	693	0.30
AMT	AMERICAN TOWER REIT INC (HLDG CO) SHS	B-1-7	5	104.49	522	0.23
AWK	AMERICAN WTR WKS CO INC NEW	A-1-7	24	72.17	1,732	0.75
APH	AMPHENOL CORP CL A NEW	C-2-7	19	57.01	1,083	0.47
ANTM	ANTHEM INC	B-1-7	2	144.76	290	0.13
T	AT&T INC	A-1-7	27	38.72	1,045	0.45
SAN	BANCO SANTANDER SA ADR	B-2-7	63	5.19	327	0.14
OZRK	BANK OF THE OZARKS INC		40	43.35	1,734	0.75
BAYRY	BAYER AG SP ADR	B-1-7	11	118.32	1,302	0.56
BDX	BECTON DICKINSON CO	A-1-7	14	161.45	2,260	0.98
BERY	BERRY PLASTICS GROUP INC COMMON STOCK	C-1-9	8	37.23	298	0.13
BTI	BRITISH AMN TOBACO SPADR	A-1-7	3	120.95	363	0.16
AVGO	BROADCOM LTD	C-1-7	4	151.53	606	0.26
CALM	CAL MAINE FDS INC COM NW		16	50.41	807	0.35
CNI	CANADIAN NATL RAILWAY CO	B-3-7	14	62.61	877	0.38
CF	CF INDS HLDGS INC	C-2-7	15	33.79	507	0.22
SNP	CHINA PETE CHEM SPN ADR	C-1-7	5	71.82	359	0.16
CB	CHUBB LTD	B-1-7	7	118.40	829	0.36
CMCSA	COMCAST CORP NEW CL A	A-1-7	8	61.30	490	0.21
COP	CONOCOPHILLIPS	B-1-8	8	48.11	385	0.17
STZ	CONSTELLATION BRANDS INC	B-1-7	3	156.64	470	0.20

Accounts included in this report: Please refer to the Account List for accounts included in this report.

Report created April 28, 2016

Stocks & Related

Security	Security Description	Rating	Quantity	Price(\$)	Market Value(\$)	% of Portfolio
BAP	CREDICORP LTD COM PV \$5	C-1-7	3	145.41	436	0.19
CMI	CUMMINS INC COM	B-2-7	12	116.72	1,401	0.61
CVS	CVS HEALTH CORP	N/A	5	102.70	514	0.22
DAL	DELTA AIR LINES INC	C-1-7	10	43.69	437	0.19
DFS	DISCOVER FINL SVCS	C-2-7	8	57.17	457	0.20
DIS	DISNEY (WALT) CO COM STK	B-1-7	14	105.28	1,474	0.64
D	DOMINION RES INC NEW VA	A-1-7	11	70.75	778	0.34
ETN	EATON CORP PLC	B-1-7	6	63.83	383	0.17
ECL	ECOLAB INC	A-1-7	11	116.65	1,283	0.56
EXR	EXTRA SPACE STORAGE INC	B-1-7	4	86.03	344	0.15
XOM	EXXON MOBIL CORP COM	A-1-7	38	88.46	3,361	1.45
FB	FACEBOOK INC CLASS A COMMON STOCK	C-1-9	4	108.89	436	0.19
F	FORD MOTOR CO	C-1-7	47	13.66	642	0.28
GD	GENL DYNAMICS CORP COM	B-1-7	7	143.61	1,005	0.44
THRM	GENTHERM INC		11	43.49	478	0.21
GLNG	GOLAR LNG LIMITED	C-2-8	47	21.41	1,006	0.44
GBX	GREENBRIER COS INC	C-1-7	26	30.98	805	0.35
HDB	HDFC BANK LTD ADR	C-1-7	5	63.48	317	0.14
XLV	HEALTH CARE SELECT SPDR		50	71.24	3,562	1.54
HCSG	HEALTH CARE SVCS GROUP		19	37.61	715	0.31
HON	HONEYWELL INTL INC DEL	B-1-7	14	115.44	1,616	0.70
HRL	HORMEL FOODS CORP		21	38.57	810	0.35
INGR	INGREDION INC SHS		11	107.18	1,179	0.51
IPHI	INPHI CORP	C-1-9	6	33.13	199	0.09
INTC	INTEL CORP	B-1-7	13	31.75	413	0.18
EWS	ISHARES MSCI SINGAPORE		65	11.04	718	0.31
EWY	ISHARES MSCI SOUTH KOREA CAPPED		14	53.17	744	0.32
IBB	ISHARES NASDAQ BIOTECH ETF		5	277.49	1,387	0.60
IVW	ISHARES S&P 500 GROWTH		24	116.00	2,784	1.20
TIP	ISHARES TIPS BOND ETF	N/A	47	114.33	5,374	2.32
JNJ	JOHNSON AND JOHNSON COM	A-2-7	6	112.77	677	0.29
KMB	KIMBERLY CLARK	A-2-7	23	125.70	2,891	1.25
KR	KROGER CO	B-1-7	26	36.31	944	0.41
LAD	LITHIA MOTORS INC CL A	C-2-7	12	85.31	1,024	0.44
LMT	LOCKHEED MARTIN CORP	B-1-7	5	233.65	1,168	0.51

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As of Close of Business: 04/27/2016

Stocks & Related

Security	Security Description	Rating	Quantity	Price(\$)	Market Value(\$)	% of Portfolio
LYB	LYONDELLBASELL INDUSTRIE	C-1-7	17	89.16	1,516	0.66
PLND	MARKET VECTORS POLAND ET		16	14.14	226	0.10
MCD	MCDONALDS CORP COM	B-1-7	5	128.30	642	0.28
MSFT	MICROSOFT CORP	B-1-7	7	50.94	357	0.15
NTES	NETEASE.COM INC ADR	C-1-7	4	133.14	533	0.23
NEM	NEWMONT MINING CORP	B-2-8	13	32.10	417	0.18
NEE	NEXTERA ENERGY INC SHS	A-1-7	7	116.89	818	0.35
NKE	NIKE INC CL B	B-1-7	10	59.27	593	0.26
NVS	NOVARTIS ADR	A-2-7	5	76.98	385	0.17
NXPI	NXP SEMICONDUCTORS N.V.	C-1-9	6	88.94	534	0.23
ORCL	ORACLE CORP \$0.01 DEL	B-1-7	11	40.85	449	0.19
PKG	PACKAGING CORP AMERICA	B-2-7	17	66.16	1,125	0.49
PRGO	PERRIGO CO PLC	C-3-7	-	97.24	0	0.00
PSX	PHILLIPS 66 SHS	C-1-7	4	88.95	356	0.15
STPZ	PIMCO 1-5 YEAR U.S. TIPS INDEX EXCHANGE-TRADED FUND	N/A	40	52.26	2,090	0.90
PXD	PIONEER NATURAL RES CO	C-1-8	3	168.72	506	0.22
PII	POLARIS INDUSTRIES COM		3	100.69	302	0.13
SPLV	POWERSHARES EXCHANGE TRADED FD TR II S&P 500 LOW VOLATILITY PORT		35	40.23	1,408	0.61
PRFZ	POWERSHARES FTSE RAFI US 150		61	99.34	6,060	2.62
SPHD	POWERSHARES S&P 500 HIGH DIVIDEND LOW VOLATILITY PORTFOLIO		12	37.60	451	0.20
PPL	PPL CORPORATION	A-1-7	26	36.86	958	0.41
RRC	RANGE RESOURCES CORP DEL	C-1-8	22	41.88	921	0.40
RTN	RAYTHEON CO DELAWARE NEW	A-1-7	17	129.87	2,208	0.96
RSG	REPUBLIC SERVICES INC	A-1-7	11	46.49	511	0.22
RAI	REYNOLDS AMERICAN INC	B-1-7	6	48.96	294	0.13
RHHBY	ROCHE HLDG LTD SPN ADR	B-1-7	21	32.05	673	0.29
XLE	SECTOR SPDR ENERGY		18	68.63	1,235	0.53
SPG	SIMON PROPERTY GROUP DEL REIT	B-1-7	4	204.57	818	0.35
SWKS	SKYWORKS SOLUTIONS INC	C-1-7	-	72.32	0	0.00
TLO	SPDR BARCLAYS LONG TERM TREASURY ETF	N/A	23	74.15	1,705	0.74
WIP	SPDR CITI INTERNATIONAL GOVERNMENT INFLATION PROTECTEDBOND	N/A	73	54.31	3,965	1.71

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Stocks & Related

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TMO	THERMO FISHER SCIENTIFIC INC	A-1-7	15	147.14	2,207	0.95
TD	TORONTO DOMINION BANK	N/A	9	44.16	397	0.17
TM	TOYOTA MOTOR CORP ADR	B-2-7	8	106.37	851	0.37
TSCO	TRACTOR SUPPLY CO	B-1-7	6	95.98	576	0.25
TDG	TRANSDIGM GROUP INC	B-1-8	1	232.64	233	0.10
TWO	TWO HARBORS INVT CORP SHS	C-1-8	41	7.89	323	0.14
UNP	UNION PACIFIC CORP	B-1-7	9	89.17	803	0.35
UTX	UNITED TECHS CORP COM	B-1-7	8	105.89	847	0.37
VFC	V F CORPORATION	B-1-7	13	63.95	831	0.36
VLO	VALERO ENERGY CORP NEW	B-2-7	15	62.19	933	0.40
VMBS	VANGUARD MORTGAGE-BACKED SEC	N/A	71	53.38	3,790	1.64
VTR	VENTAS INC REIT	B-1-7	19	62.51	1,188	0.51
WFC	WELLS FARGO & CO NEW DEL	B-1-7	15	50.93	764	0.33
WBK	WESTPAC BANKING ADR	A-1-7	52	23.72	1,233	0.53
WY	WEYERHAEUSER CO	C-1-7	25	32.32	808	0.35
WDC	WSTN DIGITAL CORP DEL	C-1-7	4	46.08	184	0.08
WYNN	WYNN RESORTS LTD	C-2-8	3	89.17	268	0.12
XXX-XX047 "Greg B Coon SEP"						
ETR	ENTERGY CORP NEW	A-2-7	72	74.71	5,379	2.33
Total Stocks & Related					113,080	48.89

Mutual Funds

Security	Security Description	Rating	Quantity	Price(\$)	Market Value(\$)	% of Portfolio
XXX-XX020 "Greg Coon SEP"						
BGT	BLACKROCK FLTG RT INC TR		146	12.75	1,862	0.81
IGR	CBRE CLARION GLOBAL REAL ESTATE INCOME FD	F-1	239	7.87	1,881	0.81
CEM	CLEARBRIDGE ENERGY MLP F	F-2	131	14.94	1,957	0.85
CCIZX	COLUMBIA SELIGMAN COMMUNICATIONS & IF CL Z		60.5480	59.62	3,610	1.56
DBLTX	DOUBLELINE TOTAL RETURN BOND FUND CL I		193.6190	10.87	2,105	0.91
EOS	EATON VANCE ENH INCOME FD II	F-1	333	13.10	4,362	1.89
ETW	EATON VANCE TAX MAN GLB BUY WRT OPP FD		368	10.54	3,879	1.68

As of Close of Business: 04/27/2016

Mutual Funds

Security	Security Description	Rating	Quantity	Price(\$)	Market Value(\$)	% of Portfolio
ETV	EATON VANCE TAX MANAGED BUY-RITE OPPORTUNITIES FUND		313	15.06	4,714	2.04
FFRIX	FIDELITY ADV FLOATING RATE HIGH INC FD CL I		94.2260	9.33	879	0.38
SGIIX	FIRST EAGLE GLOBAL CLASS I		126.0880	55.02	6,937	3.00
VVR	INVESCO SENIOR INCOME TRUST	F-1	368	4.10	1,509	0.65
HPS	J HANCOCK PREF INCOME 3 INCOME FUND III	F-2	274	18.95	5,192	2.25
JHAIX	JOHN HANCOCK GLOBAL ABS RTRN STRGYS FUND CL I		323.3940	10.11	3,270	1.41
KMF	KAYNE ANDERSON MIDSTREAM ENERGY FD INC	F-3	145	13.15	1,907	0.82
LSIIX	LOOMIS SAYLES INVT GRADE BD FD CL Y		188.9400	11.31	2,137	0.92
MAPIX	MATTHEWS ASIA DIVIDEND FUND INV CLASS		354.3900	16.02	5,677	2.46
MCR	MFS CHARTER INCOME TRUST		718	8.23	5,909	2.56
MEDIX	MFS EMERGING MARKETS DEBT FD CL I		151.1100	14.36	2,170	0.94
OSMYX	OPPENHEIMER INTL SMALL MID COMPANY FUND CLASS Y		93.8290	36.93	3,465	1.50
SWZ	SWISS HELVETIA FUND INC		167	10.44	1,743	0.75
TEI	TEMPLETN EMRG MKT INC FD		205	10.56	2,165	0.94
TDF	TEMPLETON DRAGON FD		158	17.66	2,790	1.21
TGLDX	TOCQUEVILLE GOLD FUND		46.1530	36.45	1,682	0.73
TY	TRI CONTL CORP		66	20.42	1,348	0.58
HIEMX	VIRTUS EMERGING MARKETS OPPORTUNITIES FD CL I		68.7800	9.29	639	0.28
EKIZX	WELLS FARGO ADJUSTABLE RATE GOV FD CL INSTL		236.4470	9.01	2,130	0.92
Total Mutual Funds					75,918	32.82

Certificates of Deposit

Security	Security Description	Rating	Quantity	Price(\$)	Market Value(\$)	% of Portfolio
XXX-XX047 "Greg B Coon SEP"						
381426WM3 HLKN6	CD GOLDMAN SACHS BK USA NEW YORK, NY 05.000% DEC 17 2018	N/A	11,000	108.17	12,098	5.23
40434AHN2 H3657	HSBC BANK USA CALLABLE CD FDIC INSD STEP% MAR 17 2027	N/A	6,000	97.82	5,889	2.55
Total Certificates of Deposit					17,987	7.78

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