### **Mutual Funds**

## **Mutual Funds**

- Investment companies
  - Financial intermediaries that collect funds form individual investors and invest those funds in a potentially wide rande of securities or other asstes
- Polling of assets is the key idea behind investment companies
  - Berkeley Technology
  - Citigroup Capital
  - Goldman Sachs Group
  - Merrill Lynch & Co
  - Morgan Stanley

#### **Investment Companies**

- Collecting funds from individuals
- Investment company forms portfolio
- Sells investors shares in the portfolio
- Investors have claim to the portfolio, proportional to their number of shares
  - Gains correcpond with changing value of portfolio

#### **Investment Companies**

- These companies perform several important functions for investors:
  - Administration & record keeping: capital gains, dividends and so on
  - Diversification & divisibility:i.e. by pooling of assets
  - Professional management: security analysts etc.
  - Reduced transaction costs

#### **Net Asset Value**

- Divide claims among investors
- Used as a basis for valuation of investment company shares for
  - Selling new shares
  - Redeeming existing shares( buying back)

Calculation: NAV=

Market Value of Assets - Liabilities Shares Outstanding

- Investment Company Act 1940:
  - Unit trusts
  - Managed investment companies

#### Unit Investment Trusts:

- pool of money invested in portfolio;
- its portfolio is fixed for the life,
- unmanaged.
- -Brokerage firm buys and forms portfolio
- -Sells shares in that trust called units or redeemable trust certificates
- -Invest in relatively uniform types of assets: municipal bonds, corporate bonds
- -All money from portfolio is distributed to shareholders by trustee, i.e. company which manages portfolio
- -Trust bought portfolio for \$ 5 million
- -Sells 5,000 shares at \$1,030 per share
- -3% premium per share obtained by trustee

trustee - bank or trust company

#### -Liquidate holdings

- sell back to trustee for NAV
- Sell enought securities from the asset portfolio to obtain the cash
- Sell the shares to new investors
- Decline in value: \$105 billion in 1990, \$50 billion in 2007

- Managed Investment Companies; portfolio is managed (close end or open end)
- Board of directors, elected by shareholders, hires management company for fee of 0.2 to 1.5% of assets value
  - (one managment company manages several funds)
  - Open-End (called mutual funds)
    - shares redeemed or
    - new shares issued at NAV;
    - shares outstanding change when new shares are issued or old shares are redeemed
    - Cash out shares sell them back to fund

Not redeemed, no new share issue

No change in shares outstanding

- Shares traded on organized exchanges and can be sold and bought at market price (unlike open-end mutual funds shares)
- Cash out shares sell to another investor
- May be priced at Premium or discount to NAV

#### Figure 4.1 Closed-End Mutual Funds

FUND	NAV	MKT PRICE	PREM/ DISC %	52-WEEK Return %
Adams Express Company (ADX)	17.37	15.01	-13.59	20.80
Advent/Clay Enhcd G & I (LCM)	19.72	17.33	-12.12	3.94
BlackRock S&P 500 Pr Eq (PEFX)	10.35	10.22	-1.26	6.68
BlackRock Str Div Achvr (BDT)	15.50	13.66	-11.87	4.31
Blue Chip Value Fund (BLU)	5.98	6.09	1.84	13.18
Clay/Ray James SB-1 Eqty (RYJ)	22.04	19.79	-10.21	14.51
Cohen & Steers CE Oppty (FOF)	18.32	16.91	-7.70	NS
Dreman/Claymore Div&Inc (DCS)	23.12	20.01	-13.45	3.65
DWS Dreman Val Inc Edge (DHG)	17.75	15.01	-15.44	NS
Eaton Vance T-M D-E Inc (ETY)	19.24	17.63	-8.37	NS
Gabelli Div & Inc Tr (GDV)	25.00	21.69	-13.24	22.76
Gabelli Equity Trust (GAB)	9.68	9.64	-0.41	21.39
General Amer Investors (GAM)	45.90	40.87	-10.96	21.00

#### FIGURE 4.1 Closed-end mutual funds

Source: Data compiled from *The Wall Street Journal* Online, September 28, 2007.

- Puzzle of divergence of share price and NAV (only for close end mutual funds)
- Discount represents increase in the wealth of the fund's investor
  - •20 % discount an expected 12-month return more than 6 % greater than funds selling at the NAV
- Puzzle of issue price of share above NAV
  - Tend to fall to a discount shortly after the issue

## **Other Investment Organization**

- Not organized or regulated as investment companies
  - Functions similar
  - Commingled Funds
  - Real Estate Investment Trusts
  - Hedge Funds

Types of Invest. Companies Continued -Commingled funds:

- Partnerships of investors that pool their funds
- Management firm that organizes the partnership (bank, insurance company) for fee
  - Large portfolio but still can not be managed in separate basis
- units are issued (like shares).
- Like open-end, they're trades at NAV.
- e.g. money market fund, bond fund, common stock fund often offered by a bank or an insurance company

### Types of Invest. Companies Continued

- Real estate investment trusts (REITs):
- Similar to closed-end fund
- Invest in real estate or loans secured by real estate
- Beside issuing shares
  - Raise capital by borrowing from banks and issuing bonds or mortgages
  - Highly leveraged
    - Debt ration of 70%
- Equity trust directly in real estates
- Mortgages trust mortgages and construction loans
- Established
  - Banks, insurance companies, mortgage companies for fee

## Types of Invest. Companies Continued

#### -Hedge funds

- -Like mutual funds but private partnership
- pool assets to be invested by hedge manager
- under minimal SEC regulation
- •For wealthy and institutional investors
  - Lock-ups
    - Allows: invest in illiquid assets
- Strategies
  - Use of derivatives, short sales, leveraged

- Common name for open-end investment companies
- Dominant investment company
  - 90% of invested assets
- Each mutual fund
  - Specified investment policy
    - Fund prospectus
- Management companies manage a family or complex of mutual funds
- They organize an entire collection of funds and then collect a management fees for operating them
  - Make it easy for investor to allocate assets across market sectors and to switch assets across funds

- Money Market Funds
  - Commercial papers, certificates of deposits, etc.
  - Maturity a bit more than 1 month
- Equity Funds
  - Primary in stocks, fixed-income securities or other types of securities
  - About 4% to 5% of total assets in money market securities
  - Income or Growth Fund
  - Emphasis on capital appreciation or current income
    - Income funds dividend yields
    - Growth funds capital gains
      - Growth stocks are riskier and respond dramatically to changes in economic conditions
- Sector Funds
  - Concentrated on a particular industry
    - Biotechnology, utilities, metals, telecommunications...

- Bond Funds,
  - often specializing by fixed income sector
    - Specialization:
      - Corporate bonds, Treasury bonds, etc.
      - Maturity of securities
        - » Short-term
        - » Intermediate
        - » Long-term
      - Credit risk
        - » Very safe to junk bonds
- Balanced Funds, across all securities
  - Equities or fixed income securities
  - Life-cycle funds
    - Mixed from aggressive (primarily marketed by younger investors) to conservative
    - Stable mix across stocks and bonds
  - Targeted-maturity funds
    - Become more conservative as the investor ages

- International (global, regional, emerging market)
- Asset Allocation and Flexible;
  - like balanced but vary much in portfolios
    - According to manager forecast of the performance of each sector
    - Market timing
    - Not for low-risk investors
- Index
  - forms portfolio of index
  - Kind and proportion of securities in index
  - Low-cost way for investors to pursue a passive investment strategy

#### Table 4.1 U.S. Mutual Funds by Investment Classification

#### TABLE 4.1

U.S. mutual funds by investment classification

	Assets (\$ billion)	% of Total Assets	Number of Funds
Equity funds			
Capital appreciation focus	\$ 2,701.0	25.9%	3,070
World/international	1,314.1	12.6	915
Total return	1,896.5	18.2	785
Total equity funds	\$ 5,911.6	56.8%	4,770
Bond funds			
Corporate	\$ 272.2	2.6%	289
High yield	156.2	1.5	207
World	59.4	0.6	113
Government	193.0	1.9	309
Strategic income	448.6	4.3	364
Single-state municipal	154.9	1.5	481
National municipal	210.0	2.0	_230
Total bond funds	\$ 1,494.4	14.4%	1,993
Hybrid (bond/stock) funds	\$ 653.1	6.3%	508
Money market funds			
Taxable	\$ 1,988.1	19.1%	576
Tax-exempt	366.4	3.5	273
Total money market funds	\$ 2,354.5	22.6%	849
Total	\$10,413.6	100.0%	8,120

Note: Column sums subject to rounding error.

Source: Investment Company Institute, 2007 Mutual Fund Fact Book.

#### How Funds Are Sold

- Underwriters
  - Distribute shares to investors
- Directly by underwriter
- Indirectly by brokers actions on behalf of the underwriter
- Sales force distributed: brokers, advisers on commission
- -Revenue sharing on sales force
  - Potential conflicts of interest
    - Fund companies pay the brokerage firm for potential treatment when making investment recommendation
- Financial Supermarkets; sell shares of many funds
  - Instead of charging customers a sales commission, the broker splits management fees with the mutual fund company

## Costs of Investing in Mutual Funds

- Fee Structure
  - Operating expenses; cost of operating portfolio, inc. administration and advisory cost
  - Front-end load:when you buy a share
  - Back-end load:when you redeem a share

## **Operating expenses**

- Expressed as a percentage of total assets under management
  - 0,2% to 2%
- No an explicit bill for these expenses
- Deducted from the assets of the fund
  Reduced value of the portfolio
- Marketing and distribution costs
  - Pay to brokers and financial advisors who sell the funds to the public
  - Avoid by buying directly from the fund sponsor

## Front-End Load

- Commission or sales charged paid when you purchase the shares
- May exceed 8,5% but usually about 6%
- Reduces money invested
  - Each \$1.000 paid for fund with a 6% load resulted in a sale charge of \$60 and fund invested only \$940

## Back-End Load

- A redemption or exit
- Fee for selling shares
- Between 5% to 6%

## 12b-1 Charge

- For managers of so called 12b-1 funds
  - For paying distributional costs such as advertising, promotional literature, annual reports, prospectuses, etc.
  - Limited to 1% of fund's average net asset value

#### Fees and Mutual Fund Returns:

- Measured by increase or decrease in NAV plus income distributions (dividends, capital gains) expressed as a fraction of NAV at the beginning of the investment period
- Ignore any commissions

#### Fees and Mutual Fund Returns: An Example

Initial NAV = \$20

Income distributions of \$.15 Capital gain distributions of \$.05 Ending NAV = \$20.10:

Rate of Return = 
$$\frac{\$20.10 - \$20.00 + \$.15 + \$.05}{\$20.00} = 1.5\%$$

#### Table 4.2 Impacts of Costs on Investment Performance

#### TABLE 4.2

Impact of costs on investment performance

	Cumulative Proceeds (All Dividends Reinvested)					
	Fund A	Fund B	Fund C			
Initial investment*	\$10,000	\$10,000	\$ 9,200			
5 years	17,234	16,474	15,502			
10 years	29,699	27,141	26,123			
15 years	51,183	44,713	44,018			
20 years	88,206	73,662	74,173			

\*After front-end load, if any.

Notes:

1. Fund A is no-load with .5% expense ratio.

2. Fund B is no-load with 1.5% expense ratio.

3. Fund C has an 8% load on purchases and a 1% expense ratio.

4. Gross return on all funds is 12% per year before expenses.

## Late Trading and Market Timing

- NAV calculated at the end of each tarding day
- All sell and buy orders are executed at the NAV following the market close at 4:00 p.m.
- Allowing some favored investor to buy shares in the fund below NAV or redeem their shares for more than NAV
  - Benefit those investors but at the expanse of the remaining shareholders

## Late trading

- Accepting sell or buy orders after the market closes and NAV is determined
- Based on the market closing prices at 4:00, a fund's NAV equals \$100
- At 4:30 some positive information is announces
- While NAV already has been fixed, it is clear that the fair market value of each share exceeds \$100
- If they are able to submit a later order, investors can buy shares at the now-stale NAV and redeem them the next day after price and NAV have adjusted to reflect the information

## Market timing

- Based on time-zone differences
  - National market closes several hours before trading end other national market
  - NAV is set based on the closing price of the first national market
  - If second national market jump significantly while first market is closed, it is likely that first national market prices will be rise when the market open next day
  - A market timer will buy fund in the second national market and at NAV and redeem those shares the next day for a profit

- While late trading clearly violates securities law, market timing does not
- Management fees
  - Impact in profit of shareholders not fund sponsor
- By mid-2004 more \$1.64 billion in penalties to settle allegations of improper trading

#### **Potential Reforms**

- Strict 4:00 PM hard cutoff with late orders executed the following trading day
- Fair value pricing: in NAV, adjust prices of securities of closed markets to reflect impact of prices of securities in still open markets
- Imposition of redemption fees of more than 2% for shares sold within a week of buy, paid directly to funds not to management company

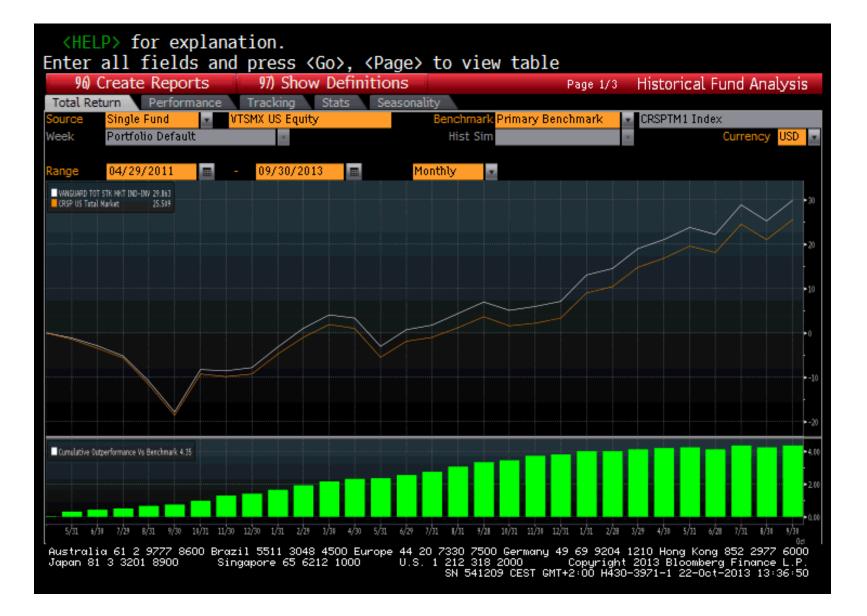
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1) Pro		2) Perfor		3) H	loldings		4) Organizatio		
VANGUARD TOT	F STK MKT IND-	INV	Ob	jective E	Blend Larg	e Cap			
Vanguard Total Stock Market Index Fund is an open-end fund incorporated in the USA. The Fund									
seeks to trac	k the perform	ance of a b	enchmark in	dex that m	easures t	the invest	tment return o	of the	
	market. The						gned to track	the	
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1 Month	2.45%	68	Inception D		3/16/92			.00%	
YTD	25.78%	69	Share Class		Investor			.00%	
1 Year	26.57%	72	Min Investr		SD 3.00k			.00%	
3 Year	16.80%	78	Min Subsequ		D 100.00			.15%	
5 Year	16.16%	79	Min IRA		JSD 3000			N.A.	
Px Source	0777 0000 D		Expense Rat			12b1 Fee		.00%	
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VTSMX	Returns	5	10	/21/1	.3 CR	SPTM1	Returns .	As Of		10/21/	13			
Return	Fund	Index	Peers	Pct	Relativ	′e %-1Yr	<sup>-</sup> vs Index	ĸ		Absolute	e% 1Yr	Fund	Index	Peers
1 Wk	2.08	2.07	2.04	64	Excess	Return	1	0	.13	Sharpe	Ratio	2.41	2.38	2.23
1 Mo	2.45	2.47	2.30	68	BETA			1.	.00	Volatilit	У	11.33	11.37	11.54
3 Mo	4.37	4.41	4.26	62	Alpha			0.	.00	Sortino	Ratio	2.36	2.33	2.20
YTD	25.78	26.05	24.68	69	Correla	ation		1.	.00	Downsie	de Risk	7.93	7.99	8.03
1 Yr	26.57	26.41	25.08	72	Treyno	r		0.	.27					
3 Yr	16.80	N.A	15.71	78	R-Stat			1.	.00	5) Peer	Group (I	FSRC)		
5 Yr	16.16	N.A	15.24	79	Inform	ation R	latio	0.	.59	1 Yr		Rtr	1 <b>%</b>	Vol %
2012	16.25	13.87	15.51	65	Trackir	ng Error	-	0.	.19	Average	e	25	5.08	11.54
2011	.96	N.A	.40	51						Standar	d Devia	[	5.12	2.01
2010	17.09	N.A	14.48	85						Median		24	4.54	11.32
2009	28.70	N.A	29.57	62	6) DVD	Curr	Income	Cap. G	ain	Dividen	d Statisti	ics		
2008	-37.04	N.A	-38.77	62	YTD	USD	.538000	.0000	000	12 Mont	h Yield			1.79%
2007	5.87	N.A	7.08	52	2012	USD	.720000	.0000	000	Indicate	ed Yield			1.77%
2006	15.51	N.A	14.03	73	2011	USD	.562000	.0000	000	1 Yr Div	ridend Gr	rowth		25.47%
2005	5.98	N.A	5.49	62	2010	USD	.530000	.0000	000	3 Yr Div	ridend Gr	rowth		14.02%
2004	12.52	N.A	10.24	83	2009	USD	.515000	.0000	000	5 Yr Div	ridend Gr	rowth		5.35%
2003	31.35	N.A	28.54	88	2008	USD	.586000	.0000	000	Dividen	d Freque	ncy	(	Quarter
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VTSMX US Equity	98) Re	eport 🦳 🕅	Feedback	Page 3	/4 Description:	Holdings
1) Profile	2) Per	formance	3) Holdi	ngs	4) Organiza	itional
Holdings As Of 6/30/	13 Portfoli	o Stats As Of	6/30/13		Alloc As Of	6/30/13
6) Top Holdings (MHD)		Position	% Net	Value	Top Asset Alloca	tion
Exxon Mobil Corp		63.13M	2.254%		Equity	99.57%
Apple Inc		13.33M	2.086%	5.28B	Cash and Other	.40%
Microsoft Corp		106.72M	1.456%	3.68B	Government	.03%
Johnson & Johnson		39.88M	1.353%	3.42B		
General Electric Co		146.80M	1.345%	3.40B		
Google Inc		3.85M	1.339%	3.39B		
Chevron Corp		27.54M	1.288%	3.26B		
Wells Fargo & Co		75.19M	1.226%	3.10B	Top Sector Alloc	ation
International Business Machi	ine	15.74M	1.189%	3.01B	Oil&Gas	7.43%
Procter & Gamble Co/The		38.91M	1.184%	3.00B	Banks	7.15%
					Pharmaceutical	6.35%
					Retail	6.34%
					Computers	5.10%
					Insurance	4.29%
7) Port Stats (PORT)					Top Geo. Allocat	ion
Top 10 Hldings % Port	14.72	Avera	ge P/C	9.14	U.S.	96.84%
Median Mkt Cap	38.65B	Avera	ge P/S	1.38	Ireland	.89%
Avg Wtd Mkt Cap	87.08B	Avera	ge P/E	19.56	Switzerland	.57%
Avg Div Yield	2.08	Avera	ge P/B	2.37	U.K.	.45%
Australia 61 2 9777 8600 Brazil Japan 81 3 3201 8900 Singap	5511 3048 4 ore 65 6212	500 Europe 44 20 1000 U.S.	1 212 318 2000	Copuright	1210 Hong Kong 852 2013 Bloomberg Fi )-3971-1 22-Oct-201	nance L.P.

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1) Profile	2) Performance 3) Holdings	4) Organizational
5) Management (MGMT)	Contact Information	Identifiers
6) Gerard C O'Reilly Fund Manager 1994 – Present	Vanguard Group Inc/The Address The Vanguard Group P.O. Box 2600 Valley Forge, PA 19482-2600 1-610-669-1000 1-800-997-2798 11) www.vanguard.com	Sedol 2486028 US Valor N.A. WPK N.A. Sicovam N.A. CUSIP 922908306 ISIN
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#### Exchange Traded Funds

- First introduce in 1993
- Mutual funds that allow investor to trade index portfolio as a shares of stocks
- Spider SPDR S&P's depository receipt
  Can be traded throughout the day
  - Diamonds
  - Cubes
  - WEBS

#### Exchange Traded Funds

- Potential advantages
  - Trade continuously
  - Short or traded in margin
  - Lower taxes; redeem many→fund sells securities→capital gain tax
  - Lower costs; for fund doesn't market to investors, who buy from brokers. So low management fees
- Potential disadvantages
  - Prices can depart by small amounts from NAV

SPY US \$ Market 	Vol 208		74.39/174.3	39 P	5×1	
	98) Report	99) Feedba	ack		Page 1/5	Description: Profile
	Performance	e 3) Ho	ldings	4) Allo	cations	5) Organizational
SPDR S&P 500 ETF TRUST			Objectiv	•	e-cap	
SPDR S&P 500 ETF Trust i	s a unit inv	estment trus			e United Sta	ates. The Trust
consists of a portfolio re						
BBG000BDTBL9]						
6) Current Data (COMP)		Bloomberg Cla	assification		Appropriatio	
Lyr Tet Fet va Listen 5718. Julian 21.946		Fund Type	ETF		Leverage	No
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	<b>-</b> 15	Market Cap	Large-cap		Swap Base	
and the second s	► 10 	Strategy	Blend		Derivatives	Based No
- y mart		Geo. Focus Co	U.S.		Currency H	
V.	- 5				Replication	
Def     Non     Dec     Jan     Feb     Har     Apr     Nop     Jan     Jal       2012     2013	Aug Sep Det				Securities l	
		Trading Data			Characteris	
		Bid Ask Sprea		0.030	Und. Index	10) SPX
INAV		30D Avg Volur		125.9M	Index Weig	ht Market Cap
Fund Percent Premium	0.063%	Implied Liquid	dity	46.9M	Px Track. E	rror .298
52 Wk H 10/22/13	USD 175.93	Market Cap	USD	158.06B	NAV Track.	Error .038
52 Wk L 11/16/12	JSD 134.70	Shares Out		901.1M	Inception D	Date 01/29/93
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	Profile	2) Performa		oldings		llocatior			nizational
SPY Retur		10/22/13	Inception Date	_	/29/93		ndex Re		10/22/13
Return	SPY	SPTR	Absolute Measu	re - 1Yr			SP	Ϋ́Υ	SPTR
1 Month	+2.75%	+2.77%	Max Return				4.5	3	4.59
3 Month	+3.99%	+4.04%	Min Return				-2.4	-0	-2.32
YTD	+24.98%	+25.14%	Sharpe Ratio				2.2	.7	2.27
1 Year	+25.00%	+25.11%	Downside Risk				7.6	7	7.72
3 Year	+16.40%	+16.51%	Periods Up(%)				63.4	-6	63.46
5 Year	+16.59%	+16.93%	Periods Down(ፃ	riods Down(%) 36.54				i4	36.54
Rel. Meas	ure	7) BETA	Dividend Inform	nation	10) DVD		Curr		Cap. Gain
Benchma	rk	8) SPX	12 Month Yield		1.93%	YTD	USD	2.37	0.00
Raw Beta	i 6M		Net Indicated Y		1.91%	2012	USD	3.10	0.00
Adjusted	Beta 6M	.998	1 Yr Dividend G	rowth	18.97%	2011	USD	2.58	0.00
Raw Beta	ı 1Yr	1.003	3 Yr Dividend G	rowth	15.46%	2010	USD	2.27	0.00
Adjusted	Beta 1Yr	1.002	5 Yr Dividend G	rowth	4.08%	2009	USD	2.18	0.00
Correlatio	n	.994	Dividend Freque	ency	Quarter	2008	USD	2.72	0.00
Standard	Deviation	9.110							
Volatility	30 Day	12.733							
	al Fund Analy:								
Australia Japan 81 3	61 2 9777 8600   3201 8900	Brazil 5511 3048 Singapore 65 62	8 4500 Europe 44 20 212 1000	1 212 318 20	)00 <sup>–</sup> 00(	Copuriaht	2013 BI	oombera Fi	inance L.P.
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Data 175 4	rket	 208,460	⊤174.40 / 17	4.41P	1×3	
SPY US Equity	98) Repo		) Feedback		Page 4/5 Desc	cription: Allocations
1) Profile	2) Performa		3) Holdings	4) /	Allocations	5) Organizational
Allocations as of	10/22/13			.,,,		-,
Top Sector Allocation		Top Geogr	raphic Allocation		Top Asset Allo	ocation
Oil&Gas	8.21%	U.S.		97.50%	Equity	99.49%
Banks	7.51%	Ireland		.98%	Cash and Oth	er .51%
Pharmaceuticals	7.06%	Switzerla	nd	.64%		
Retail	6.42%	U.K.		.34%		
Computers	5.86%	Bermuda		.03%		
Insurance	4.40%					
Internet	3.93%					
Software	3.65%					
Media	3.61%					
Telecommunications	3.60%					
Ø Port Stats (PORT)	10/22/13	7) Shares	Outstanding (GP)	)		
Top 10 Hldings % Port	17.86	(In Millions) \$7Y US Equity 901.0821				N M
Median Mkt Cap	USD 66.15B					ha An And h M in
Avg Wtd Mkt Cap	USD 112.37B				www.mu/	
Avg Div Yield	2.01	A WAY	has the set	$M$ $h_{n}$	NA WANT	► 760
Average P/B	2.42	WW W	Marin Marine Marine	1 W T		= 300
Average P/E	18.03		r			-61
Average P/S	1.69	200 Dec 1	tar''''Am'''Sap'''D 3013	es Nor	3un 5up 5up	Har 2an Sep 2011
Average P/C	11.63	0 1500 5	44 00 7000 7500			V 050 0077 0007
Australia 61 2 9777 8600 Japan 81 3 3201 8900	Brazil 5511 304 Singapore 65 (		U.S. 1 212 318 2	2000 -	Copuright 2013	ong Kong 852 2977 6000 Bloomberg Finance L.P. 0 23–Oct–2013 13:05:35

### Thank you for your attention