

MBA



W. P. CAREY
SCHOOL of BUSINESS

ARIZONA STATE UNIVERSITY

WPC MBA SIM Fund

December 7, 2012
Semi-Annual Board Update

Agenda

Introduction

Fund Objective

Asset Allocation Selection

Benchmarking

Performance

Next Steps

2012 – 2013 SIM Fund Team



Paul Balskus



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Chris Pettit
Portfolio Manager



Colin Porter



Eric Williams



Joe Zanck

Fund Objectives

- Manage approximately \$560,000 of the Arizona State Foundation
- Applying the MBA program's teachings on fundamental analysis, portfolio management, and fund administration
- Track portfolio's performance and continue to look for attractive investment opportunities
- Achieve positive returns relative to benchmarks

Asset Allocation Methodology

- Reviewed average asset allocations for two types of institutional investors
 - NCSE study of 823 endowments as of June 2011
 - Pension & Investments Top 1000 retirement funds as of December 2011
- Reasons for looking at these institutional average asset allocations
 - Long-term outlook
 - SIM Fund is part of ASU Foundation Fund

Average Asset Allocations

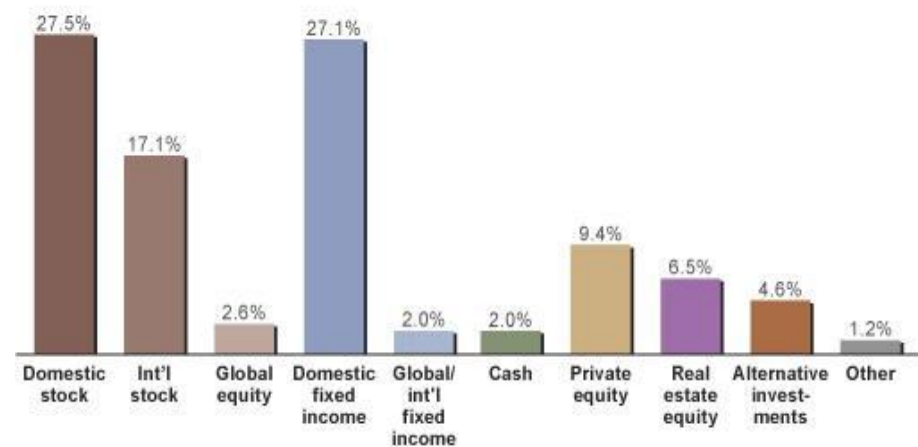
NCSE 2011 Report

<i>numbers in percent (%)</i>	Total Institutions		
	842	850	823
	'09	'10	'11
Domestic equities	18	15	16
Fixed income	13	12	10
International equities	14	16	17
Alternative strategies	51	52	53
Short-term securities/cash/other	4	5	4

Source: 2011 NACUBO-Commonfund Study of Endowment Results

P&I Online Top 1000 Funds

Top 1,000 defined benefit plans



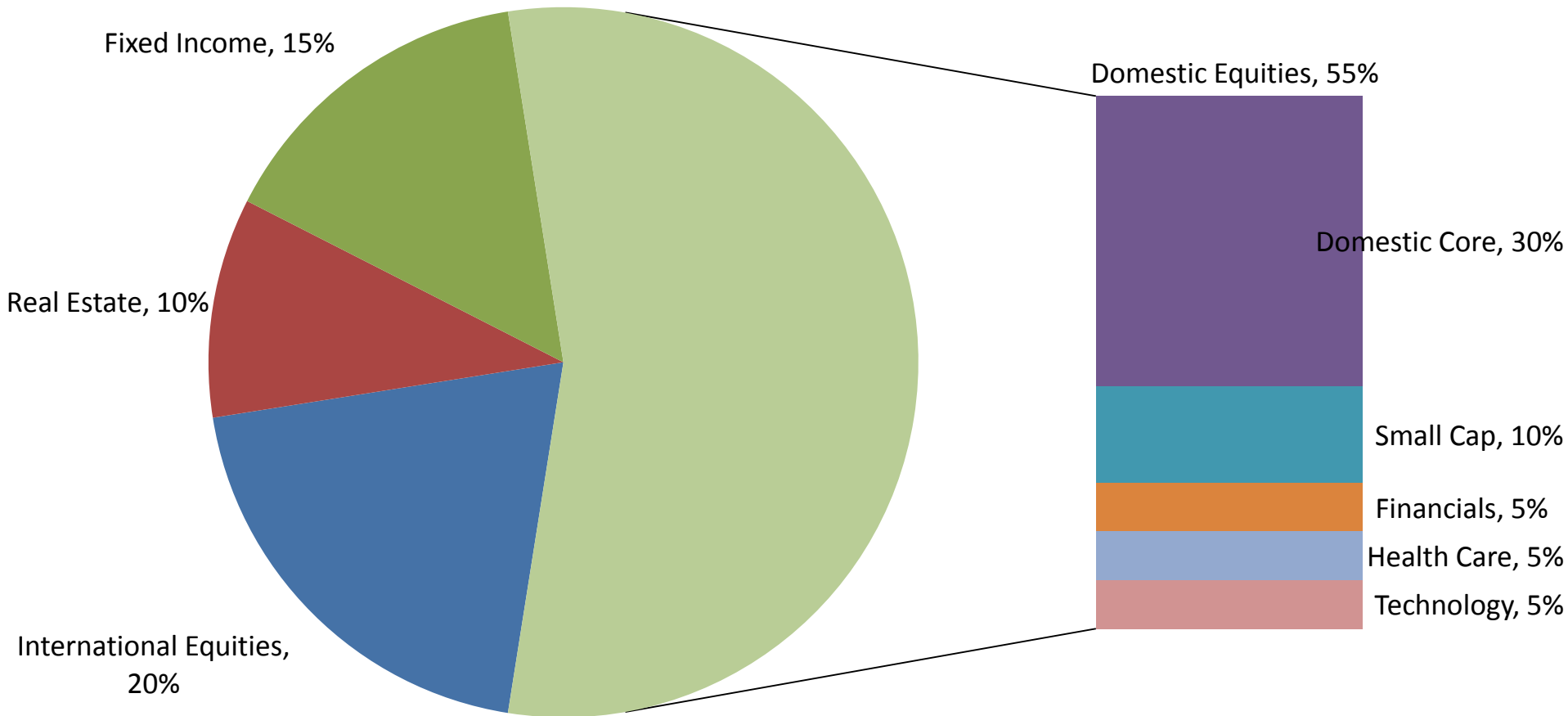
Source: Pension & Investments Online – February 6, 2012

Restrictions

The following investment restrictions, as outlined by our charter, affected our investment decisions.

- Equities
 - No more than 25% in a industry or sector
 - All Equities must be traded actively, min average daily volume of 5000 shares
- Foreign Equities
 - Max 25%, can use ETFs
- Fixed Income
 - Max 20%, must meet or exceed investment grade (BBB- by Standard and Poor's and Baa3 by Moody's)
 - No maturities > 10 years

MBA Portfolio Allocation



US Core Equity – 30%

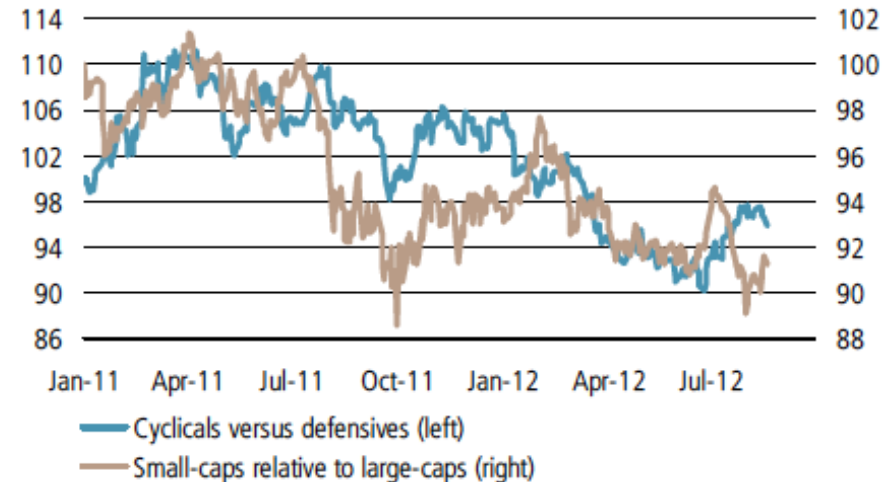
- Security: Vanguard Total Stock Market (VTI)
- Description:
 - 3,000 stocks representative of the whole U.S. market
 - Goal is to keep pace with U.S. stock market returns
 - Fund total net assets: \$201.4 billion
- Reasons for Investing:
 - Diversification
 - Expense ratio: 0.06% which is 95% lower than the average expense ratio of funds with similar holdings

US Small Cap Equity – 10%

- Historically have produced higher returns than large cap
- Diversified small-cap fund
- Vanguard Small Cap Index ETF (VB)
 - Expense Ratio: 0.16%

Fig. 27: Rebounding cyclical sector performance should boost small-caps

Relative performance of cyclical vs. defensive sectors and relative performance of Russell 2000 vs. Russell 1000



Source: FactSet, Bloomberg, UBS WMR, as of 20 August 2012

US Financial Sector – 5%

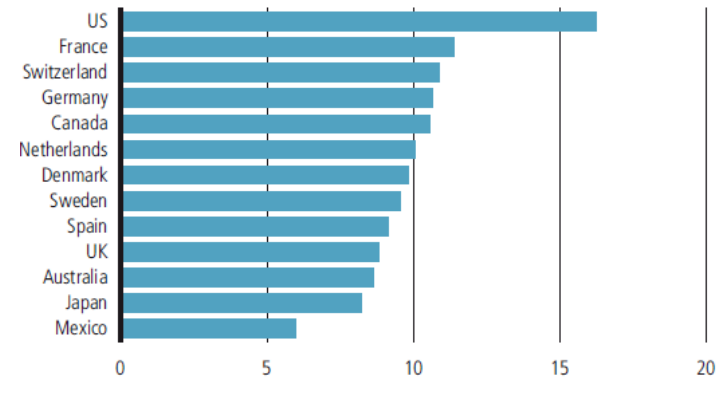
- Accommodative Fed
- Delinquent loan estimates have decreased
- Businesses are starting to increase borrowing

US Healthcare Sector – 5%

- Healthcare investment opportunities throughout this decade
- Expansion of Medicare and Medicaid
- 17% of US GDP, and could rise to 20% of US GDP by 2018 CMMS
- Balance sheets in the health-care sector remain flush with cash
- Aging population and rising obesity rates

Fig. 2: US spends more on healthcare than any other country

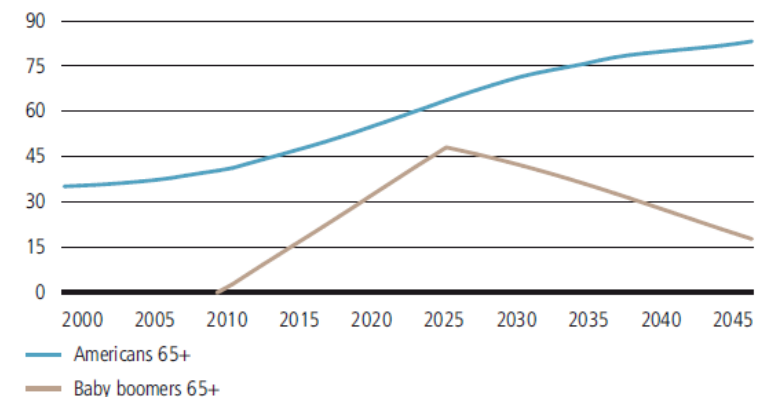
Healthcare spending as a share of GDP, in %, 2008



Source: Organization for Economic Cooperation and Development

Fig. 4: Number of Americans age 65+ will double by 2030

Population of Americans age 65 and over, in millions



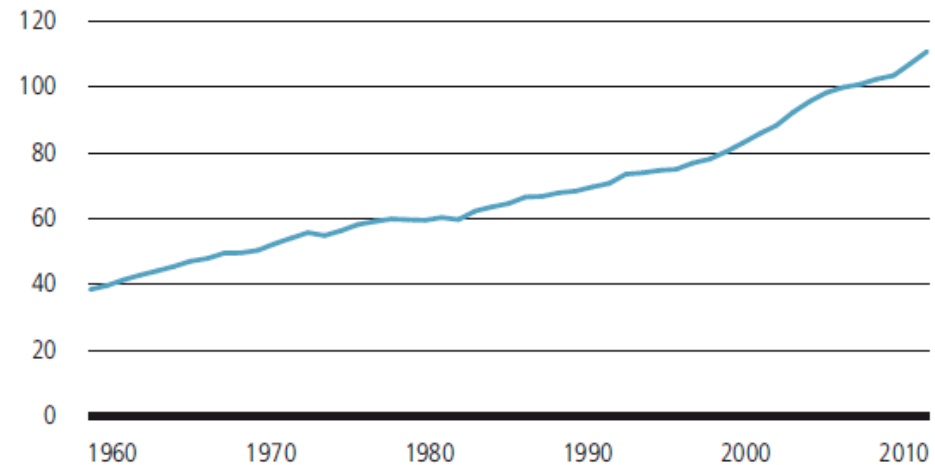
Source: US Census Bureau

US Technology Sector – 5%

- Applications penetrating new territory and devices become interconnected
- Cloud computing
- Compressed valuations and strong prospects for an earnings rebound
- Growth in business investment in technology is now outpacing growth in total business investment

Fig. 1: Dramatic improvements in productivity

Nonfarm business output per hour



Source: Bureau of Labor Statistics, UBS WMR

Sector Holdings

- Vanguard Sector ETFs
 - VFH – Financials
 - VHT – Healthcare
 - VGT – Information Technology
- Expense Ratios: 0.19-0.23% which is about 88% lower than comparable funds

International Equity – 20%



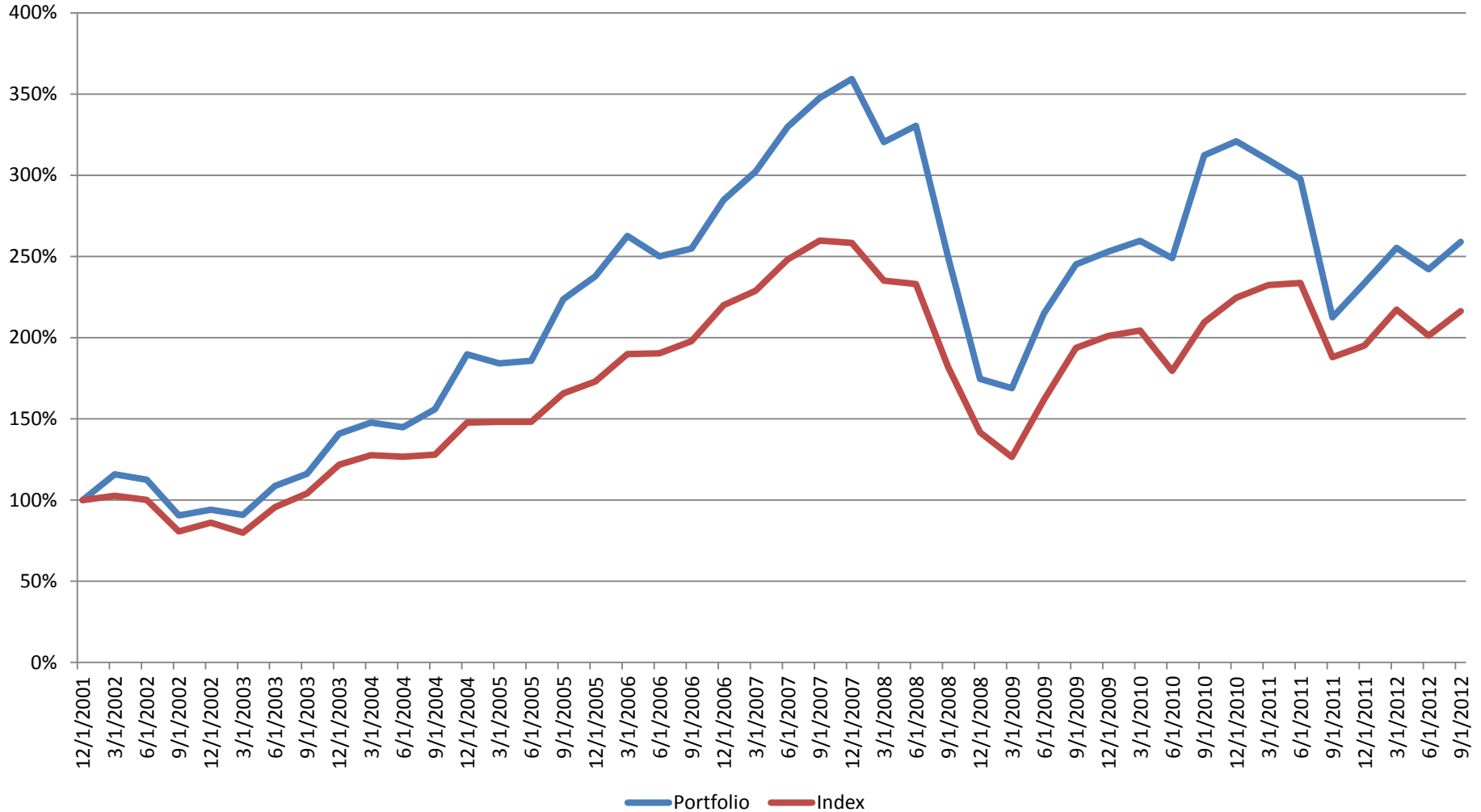
- Strategy: Momentum based approach
- Momentum is the tendency of investments, in every market and asset class, to exhibit persistence in their relative performance for some period of time
- Extensive evidence of momentum supported by almost two decades of academic research

Momentum Strategy



- Expanded the momentum strategy to pursue the top performing countries out of the 45 countries as indicated by the ACWI Ex US Index
 - Rank the $t-12$ to $t-2$ MSCI index returns for each of the 45 countries in the index
 - Equally allocate our 20% across the top five momentum countries

Momentum Backtest (2002-2012)



Current Country Allocation

- Ranked countries and arrived at the following five:



Thailand (THD)



Philippines (EPHE)



New Zealand (ENZL)



Turkey (TUR)



Mexico (EWW)

- Passed on two of original top five due to liquidity and total assets constraints of iShares ETFs



Belgium



Denmark

Country ETF Detail

Description	THD: NYSE Arca	EPHE: NYSE Arca	ENZL: NYSE Arca	EWW: NYSE Arca	TUR: NYSE Arca
Fund Name	iShares MSCI Thailand Index Fund	iShares MSCI Philippines Invstable Market Index Fund	iShares MSCI New Zealand Investable Market Index Fund	iShares MSCI Mexico Investable Market Index Fund	iShares MSCI Turkey Index Fund
Category	Pacific/Asia ex-Japan Stk	Pacific/Asia ex-Japan Stk	Pacific/Asia ex-Japan Stk	Latin America Stock	Diversified Emerging Mkts
Average Volume (10 day)	174,565	155,473	57,664	2,363,707	248,373
Total Assets	\$672.7M	\$133.0M	\$139.0M	\$1.5B	\$621.5M
Net Expense Ratio	0.59%	0.59%	0.51%	0.52%	0.59%
Inception Date	03/26/2008	09/28/2010	09/01/2010	03/12/1996	03/26/2008

Description	EWK: NYSE Arca	EDEN: Consolidated I...
Fund Name	iShares MSCI Belgium Capped Investable Market Index Fund	iShares MSCI Denmark Capped Investable Market Index
Category	Europe Stock	Europe Stock
Average Volume (10 day)	73,703	408
Total Assets	\$28.8M	\$3.0M
Net Expense Ratio	0.53%	0.53%
Inception Date	03/12/1996	01/25/2012

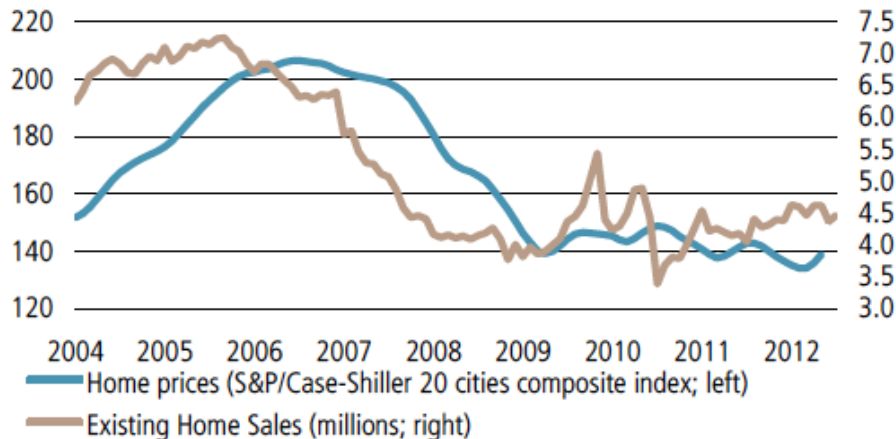
Real Estate – 10%

- Diversification benefit
- Real estate prices are recovering

	Std Dev	REITS
Cash	0.62	(0.05)
Bonds	3.72	0.16
Int Bnds	8.57	0.24
Lg Cap	15.11	0.59
Sm Cap	19.67	0.68
Intl Eq	17.80	0.51
Emg Eq	24.16	0.47
REITS	20.40	1.00
Hdge Fds	7.13	

Source: ING

Fig. A7: US housing market is recovering
Home price index and existing home sales (in million)



Source: UBS, Bloomberg, as of 23 August 2012

Real Estate Investment

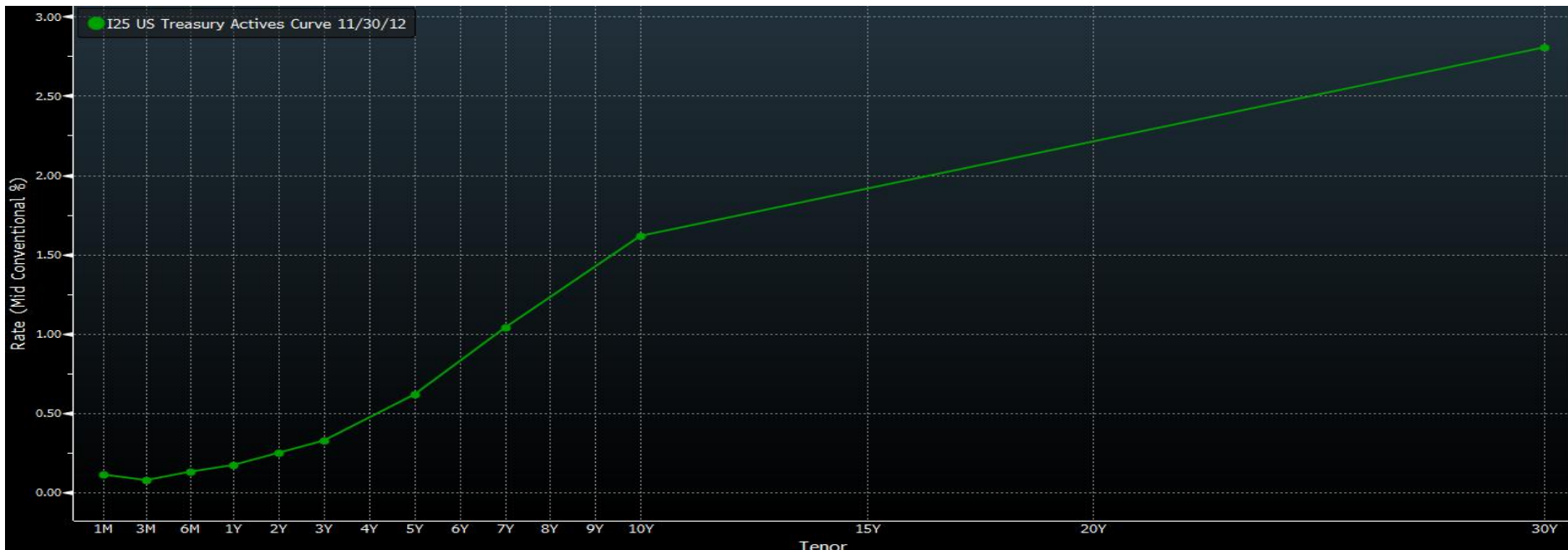
- Investment: VGRSX - Vanguard REIT Index Fund Signal Shares
- Expense Ratio: 0.10%

Fixed Income – 15%

- Diversification benefit
- Low end investment grade products
- Middle term investment horizon
- Interest rate forecasts

	Std Dev	Bonds
Cash	0.62	0.05
Bonds	3.71	1.00
Large Cap	15.09	0.13
Sm Sap	19.64	0.02
Intl Eq	17.77	0.09
Emg Eq	24.12	0.00
REITs	20.36	0.16

Source: ING

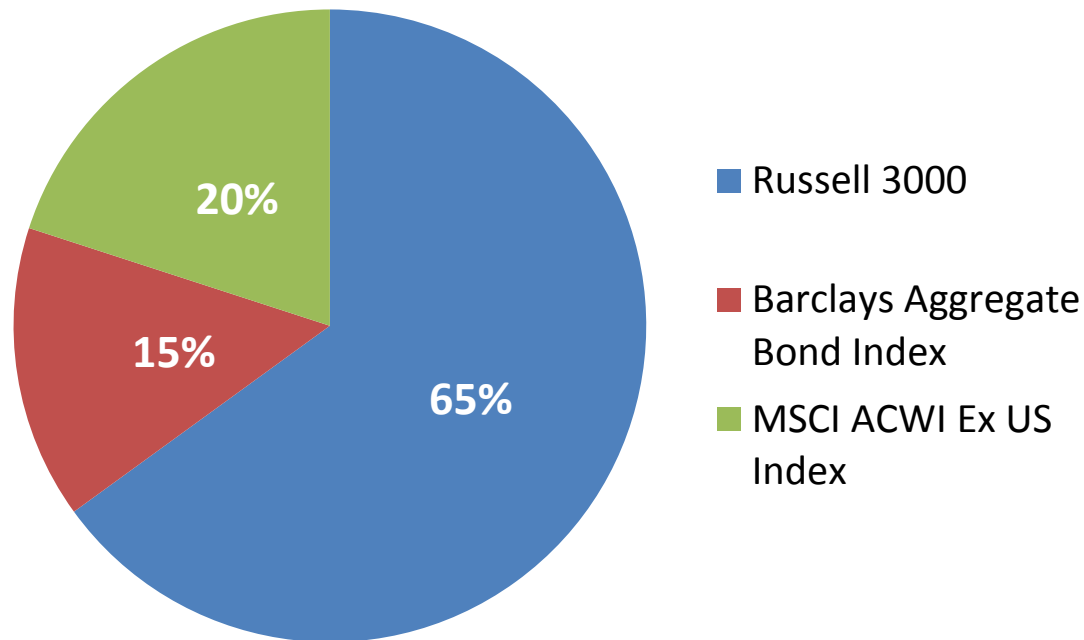


Fixed Income Investment

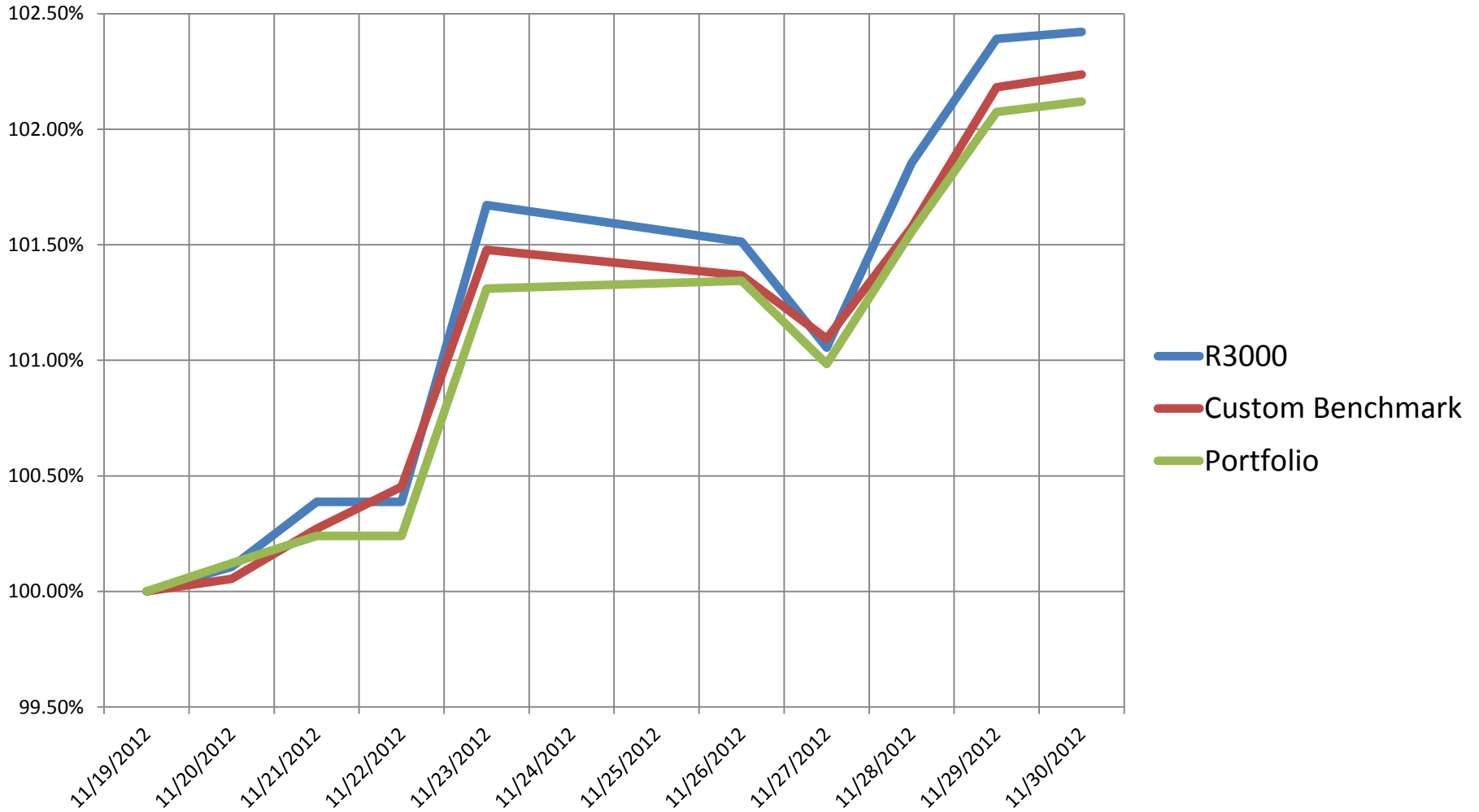
- VFIDX – Vanguard Intermediate Term Investment Grade Fund Admiral Shares
- Expense Ratio: 0.10%
- Low Investment Grade Bonds (Baa-A): 66.9%
- Current Yield: 2.04%
- Avg Maturity: 6.4 Years
- Avg Duration: 5.4 Years

Benchmarking

- Benchmark our returns against the Russell 3000 and a custom benchmark of the following:



Performance



Next Steps

- Monitor portfolio daily
- Rebalance in January
- Further develop our portfolio management skills

Appendix

Vanguard Total Stock Market ETF (VTI)

	Total Stock Market ETF	MSCI US Broad Market Index
Consumer Discretionary	12.30%	12.30%
Consumer Staples	9.70%	9.70%
Energy	10.30%	10.30%
Financials	16.20%	16.20%
Health Care	11.90%	11.90%
Industrials	10.90%	10.90%
Information Technology	18.40%	18.40%
Materials	3.90%	3.90%
Telecommunication Services	2.80%	2.80%
Utilities	3.60%	3.60%

Month-end ten largest holdings

(16.9% of total net assets) as of 10/31/2012

- 1 Apple Inc
- 2 Exxon Mobil Corp
- 3 General Electric Co
- 4 Chevron Corp
- 5 Microsoft Corp
- 6 International Business Machines Corp
- 7 AT&T Inc
- 8 Johnson & Johnson
- 9 Procter & Gamble Co/The
- 10 Pfizer Inc

Vanguard Small-Cap ETF (VB)

	Small-Cap ETF	MSCI US Small Cap 1750 Index
Consumer Discretionary	13.40%	13.50%
Consumer Staples	3.20%	3.20%
Energy	5.50%	5.50%
Financials	23.00%	23.00%
Health Care	12.00%	12.00%
Industrials	16.90%	16.90%
Information Technology	15.70%	15.60%
Materials	5.90%	5.90%
Telecommunication Services	0.80%	0.80%
Utilities	3.60%	3.60%

Month-end ten largest holdings

(2.6% of total net assets) as of 10/31/2012

- 1 Royal Gold Inc
- 2 American Campus Communities Inc
- 3 Cooper Cos Inc/The
- 4 AMERIGROUP Corp
- 5 Ocwen Financial Corp
- 6 Fortune Brands Home & Security Inc
- 7 Wabtec Corp/DE
- 8 American Capital Ltd
- 9 Apartment Investment & Management Co
- 10 tw telecom inc

Vanguard Financials ETF (VFH)

	Financials ETF		
Asset Management & Custody Banks	7.80%	Life & Health Insurance	4.70%
Consumer Discretionary	0.00%	Materials	0.00%
Consumer Finance	5.30%	Mortgage REITs	2.40%
Consumer Staples	0.00%	Multi-line Insurance	3.10%
Diversified Banks	9.60%	Multi-Sector Holdings	0.20%
Diversified Capital Markets	0.00%	Office REITs	2.50%
Diversified Real Estate Activities	0.10%	Other Diversified Financial Services	14.90%
Diversified REITs	1.30%	Property & Casualty Insurance	10.40%
Energy	0.00%	Real Estate Development	0.10%
Health Care	0.00%	Real Estate Operating Companies	0.10%
Industrial REITs	0.80%	Real Estate Services	0.50%
Industrials	0.00%	Regional Banks	9.40%
Information Technology	0.00%	Reinsurance	1.40%
Insurance Brokers	2.00%	Residential REITs	3.00%
Investment Banking & Brokerage	4.80%	Retail REITs	4.70%
		Specialized Finance	2.20%
		Specialized REITs	7.30%
		Telecommunication Services	0.00%
		Thriffs & Mortgage Finance	1.40%

Month-end ten largest holdings

(35.5% of total net assets) as of 10/31/2012

- 1 Wells Fargo & Co
- 2 JPMorgan Chase & Co
- 3 Citigroup Inc
- 4 Bank of America Corp
- 5 Berkshire Hathaway Inc
- 6 US Bancorp
- 7 American Express Co
- 8 Goldman Sachs Group Inc/The
- 9 Simon Property Group Inc
- 10 American International Group Inc

Vanguard Health Care ETF (VHT)

	Health Care ETF	MSCI US IMI Health Care 25/50
Biotechnology	15.40%	15.40%
Consumer Discretionary	0.00%	—
Consumer Staples	0.00%	—
Energy	0.00%	—
Financials	0.00%	—
Health Care Distributors	3.30%	3.30%
Health Care Equipment	14.60%	14.60%
Health Care Facilities	1.60%	1.60%
Health Care Services	5.30%	5.30%
Health Care Supplies	1.30%	1.30%
Health Care Technology	1.10%	1.10%
Industrials	0.00%	—
Information Technology	0.00%	—
Life Sciences Tools & Services	4.30%	4.30%
Managed Health Care	7.60%	7.60%
Materials	0.00%	—
Pharmaceuticals	45.40%	45.40%

Month-end ten largest holdings

(52.3% of total net assets) as of 10/31/2012

- 1 Johnson & Johnson
- 2 Pfizer Inc
- 3 Merck & Co Inc
- 4 Abbott Laboratories
- 5 Amgen Inc
- 6 UnitedHealth Group Inc
- 7 Bristol-Myers Squibb Co
- 8 Gilead Sciences Inc
- 9 Eli Lilly & Co
- 10 Express Scripts Holding Co

Vanguard Information Technology ETF (VGT)

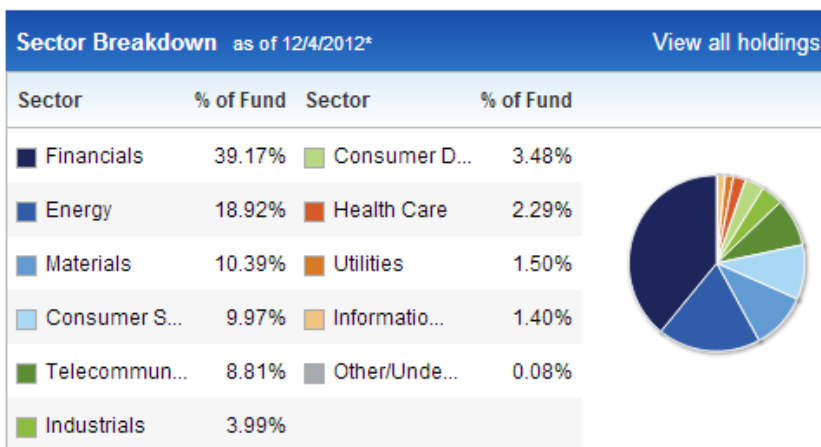
	Information Tech ETF	MSCI US IMI Info Technology 25/50
Application Software	5.30%	5.30%
Communications Equipment	9.10%	9.10%
Computer Hardware	21.40%	21.40%
Computer Storage & Peripherals	3.40%	3.40%
Consumer Discretionary	0.00%	—
Consumer Staples	0.00%	—
Data Processing & Outsourced Services	8.40%	8.40%
Electronic Components	1.20%	1.20%
Electronic Equipment & Instruments	0.60%	0.60%
Electronic Manufacturing Services	1.30%	1.30%
Energy	0.00%	—
Financials	0.00%	—
Health Care	0.00%	—
Home Entertainment Software	0.40%	0.30%
Industrials	0.00%	—
Internet Software & Services	11.60%	11.60%
IT Consulting & Other Services	10.70%	10.70%
Materials	0.00%	—
Office Electronics	0.40%	0.40%
Semiconductor Equipment	1.60%	1.60%
Semiconductors	9.90%	9.90%
Systems Software	14.00%	14.10%
Technology Distributors	0.60%	0.60%

Month-end ten largest holdings

(60.4% of total net assets) as of 10/31/2012

1	Apple Inc
2	Microsoft Corp
3	International Business Machines Corp
4	Google Inc
5	Oracle Corp
6	Intel Corp
7	QUALCOMM Inc
8	Cisco Systems Inc
9	Visa Inc
10	eBay Inc

MSCI Thailand Investable Market Index Fund

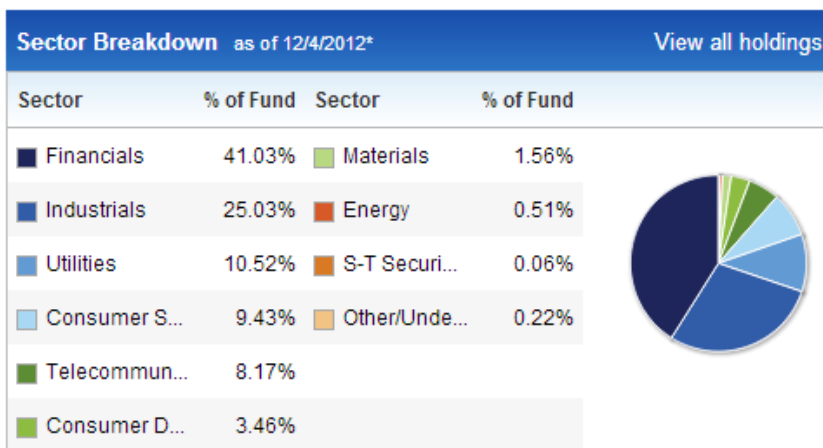


*Holdings are subject to change

Top Holdings* as of 12/4/2012 [View all holdings](#)

Name	% of Fund
SIAM COMMERCIAL BANK P-NVDR	8.79%
PTT PCL-NVDR	8.51%
ADVANCED INFO SERVICE-NVDR	7.91%
KASIKORNBANK PCL-FOREIGN	6.73%
PTT EXPLOR & PROD PCL-NVDR	5.47%
CP ALL PCL-NVDR	4.87%
BANGKOK BANK PCL-FOREIGN REG	4.82%
KASIKORNBANK PCL-NVDR	3.96%
SIAM CEMENT PUB CO-FOR REG	3.53%
PTTGC MERGED CO NVDR	3.32%
Total	57.90%

MSCI Philippines Investable Market Index Fund

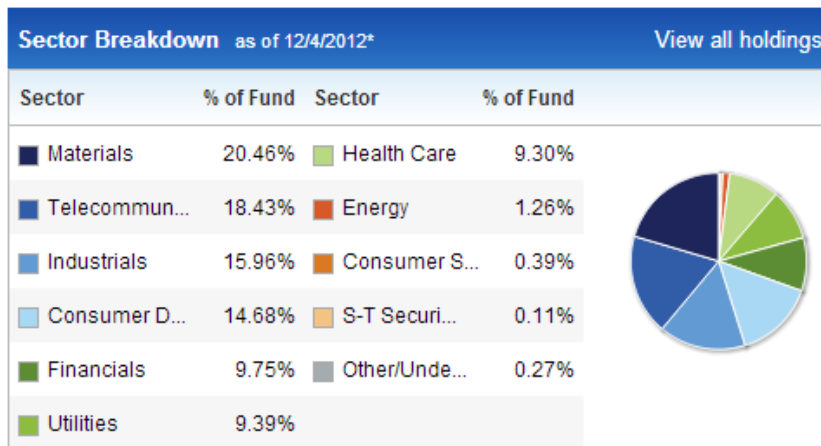


*Holdings are subject to change

Top Holdings* as of 12/4/2012 [View all holdings](#)

Name	% of Fund
SM INVESTMENTS CORP	10.30%
AYALA LAND INC	7.32%
SM PRIME HOLDINGS INC	6.43%
PHILIPPINE LONG DISTANCE TEL	6.12%
BDO UNIBANK INC	5.75%
ABOITIZ EQUITY VENTURES INC	5.63%
AYALA CORPORATION	4.94%
UNIVERSAL ROBINA CORP	3.92%
BANK OF PHILIPPINE ISLANDS	3.81%
ABOITIZ POWER CORP	3.74%
Total	57.97%

MSCI New Zealand Investable Market Index Fund

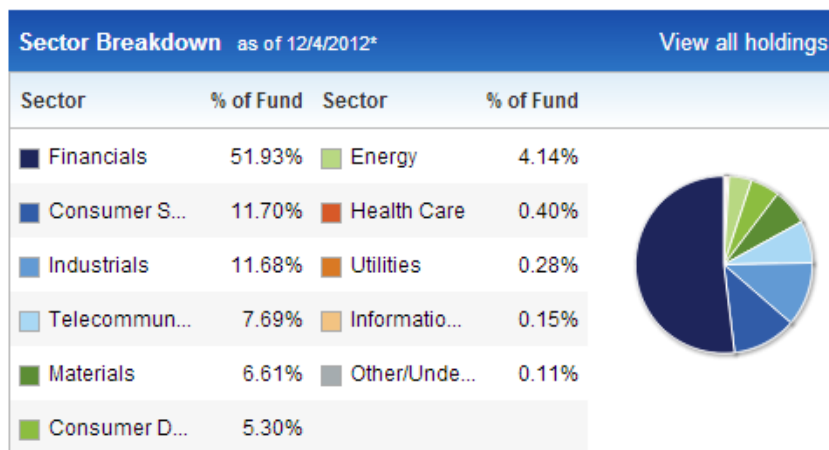


*Holdings are subject to change

Top Holdings* as of 12/4/2012 [View all holdings](#)

Name	% of Fund
FLETCHER BUILDING LTD	18.43%
TELECOM CORP OF NEW ZEALAND	14.58%
AUCKLAND INTL AIRPORT LTD	8.36%
SKYCITY ENTERTAINMENT GROUP	7.10%
CONTACT ENERGY LTD	4.95%
FISHER & PAYKEL HEALTHCARE C	4.83%
RYMAN HEALTHCARE LIMITED	4.47%
INFRATIL LTD	4.44%
CHORUS LTD	3.85%
MAINFREIGHT LTD	3.56%
Total	74.57%

MSCI Turkey Investable Market Index Fund

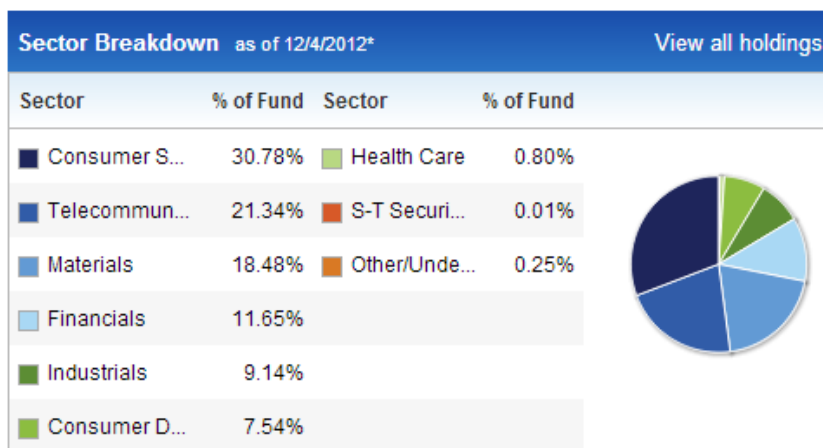


*Holdings are subject to change

Top Holdings* as of 12/4/2012 [View all holdings](#)

Name	% of Fund
TURKIYE GARANTI BANKASI	13.40%
AKBANK T.A.S.	10.11%
TURKIYE HALK BANKASI	7.06%
TURKIYE IS BANKASI-C	6.02%
BIM BIRLESIK MAGAZALAR AS	5.73%
TURKCELL ILETISIM HIZMET AS	5.40%
HACI OMER SABANCI HOLDING	5.00%
TUPRAS-TURKIYE PETROL RAFINE	4.01%
KOC HOLDING AS	3.51%
ANADOLU EFES BIRACILIK VE	3.45%
Total	63.69%

MSCI Mexico Investable Market Index Fund



*Holdings are subject to change

Top Holdings* as of 12/4/2012 [View all holdings](#)

Name	% of Fund
AMERICA MOVIL SAB DE C-SER L	21.22%
FOMENTO ECONOMICO MEXICA-UBD	9.52%
WALMART DE MEXICO-SER V	8.51%
GRUPO MEXICO SAB DE CV-SER B	6.22%
GRUPO FINANCIERO BANORTE-O	5.03%
CEMEX SAB-CPO	4.67%
GRUPO TELEVISA SAB-SER CPO	4.56%
INDUSTRIAS PENOLES SAB DE CV	3.42%
COCA-COLA FEMSA SAB-SER L	3.19%
ALFA S.A.B.-A	3.07%
Total	69.39%

Vanguard REIT Index Fund Signal Shares (VGRSX)

	REIT Index Fund Inv		
Asset Management & Custody Banks	0.00%	Office REITs	14.20%
Consumer Discretionary	0.00%	Other Diversified Financial Services	0.00%
Consumer Finance	0.00%	Property & Casualty Insurance	0.00%
Consumer Staples	0.00%	Real Estate Development	0.00%
Diversified Banks	0.00%	Real Estate Operating Companies	0.00%
Diversified Capital Markets	0.00%	Real Estate Services	0.00%
Diversified Real Estate Activities	0.00%	Regional Banks	0.00%
Diversified REITs	7.30%	Reinsurance	0.00%
Energy	0.00%	Residential REITs	17.70%
Health Care	0.00%	Retail REITs	27.70%
Industrial REITs	4.90%	Specialized Finance	0.00%
Industrials	0.00%	Specialized REITs	28.10%
Information Technology	0.00%	Telecommunication Services	0.00%
Insurance Brokers	0.00%	Thriffs & Mortgage Finance	0.00%
Investment Banking & Brokerage	0.00%	Utilities	0.00%

Month-end ten largest holdings

(45.7% of total net assets) as of 10/31/2012

- 1 Simon Property Group Inc
- 2 Public Storage
- 3 HCP Inc
- 4 Ventas Inc
- 5 Equity Residential
- 6 Boston Properties Inc
- 7 Prologis Inc
- 8 Health Care REIT Inc
- 9 Vornado Realty Trust
- 10 AvalonBay Communities Inc

Vanguard Intermediate-Term Investment-Grade Fund Admiral Shares (VFIDX)

	Inter-Term Invest-Gr Adm
U.S. Government	8.2%
Aaa	9.8%
Aa1	3.3%
Aa2	3.8%
Aa3	6.1%
A1	10.3%
A2	17.0%
A3	20.0%
Baa1	7.0%
Baa2	7.8%
Baa3	4.8%
Ba1	0.3%
NR	1.6%
Total	100.0%

Characteristics as of 10/31/2012

Fund total net assets	\$19.6 billion
Number of bonds	1670
Average maturity	6.4 years 
Average duration	5.4 years 