HEALTH WEALTH CAREER

CITY OF LOS ANGELES
INVESTMENT TRAINING FOR THE BOARD OF DEFERRED COMPENSATION ADMINISTRATION

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Bonds (Fixed Income)

- A **bond** is debt issued by a company, government, or financial institution which promises the investor regular payments and final repayment at the bond's maturity
- Returns generally attributable to interest payments, though capital appreciation may be accomplished through opportunistic trading
- Bonds are traded between investors in a secondary market ("over the counter"). For this reason, bond prices can be far less transparent than stocks
- Stable Value
  - A portfolio that invests in high quality, short to intermediate, diversified fixed income securities that are protected against interest rate volatility (guarantee a specific minimum return) by contracts from banks and insurance companies

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Stocks (Equity)

- A **stock** is a claim of ownership share in a company
- There are different classifications of stocks, such as common, preferred and unlisted
- Stock returns are attributable to capital appreciation and income (dividends)
- Primarily exchange traded and pricing is highly transparent
- In liquidation, common stockholders have rights to a company's assets only after debt holders and preferred stockholders

Alternatives

- Asset classes with different return patterns than stocks and bonds (e.g., hedge funds, real estate, private equity, commodities, etc.)

Because bonds are more secure from default than stocks, they should generate less return but also be less volatile

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REVIEW OF ASSET CLASSES
BONDS – TYPES OF SECURITIES

- US Government Bonds
- US Treasury Inflation-Protected Securities (TIPS)
- Corporate Bonds
  - Investment Grade (BBB or better)
  - Non-Investment Grade (High Yield or "Junk")
- Mortgage-Backed Securities (MBS)
  - Gov't sponsored agencies and non-agency MBS
- Other Asset-Backed Securities or collateralized bonds
- Yankee Bonds
  - Foreign entities issue bonds payable in USD
- Non-Dollar Bonds
  - Foreign Governments (Developed and Emerging Countries), Foreign Corporations
- Synthetic Bonds (Futures and Swaps)

Investment Grade Ratings

Rating/Quality	Moody's	S&P
Highest Grade	Aaa	AAA
	Aa1	AA+
	Aa2	AA
	Aa3	AA-
Upper Medium Grade	A1	A+
	A2	A
	A3	A-
Medium Grade	Baa1	BBB+
	Baa2	BBB
	Baa3	BBB-

Non-Investment Grade Ratings

Rating/Quality	Moody's	S&P
Speculative Grade	Ba1	BB+
	Ba2	BB
	Ba3	BB-
	B1	B+
	B2	B
	B3	B-
Highly Speculative	Caa	CCC+
	Ca	CCC
	C	CCC-
		CC
		C
Default	D	D

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REVIEW OF ASSET CLASSES
BONDS – CHARACTERISTICS

Bonds characteristics include:

- **Maturity**: Life of a bond
- **Coupon**: Amount of interest the borrower pays (may be fixed or floating rate) typically based on $1,000 par value of bond
- **Payment period**: How often interest payments made (typically every 6 months)
- **Yield:** Generally, the amount of interest income expected from a bond divided by its current price. In practice, there are several different ways to calculate. A bond’s yield reflects the prevailing interest rate that investors are willing to accept for that particular type of bond

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REVIEW OF ASSET CLASSES
BONDS – RISK

- Bond prices fluctuate based on market perception of various risks, including:
  - **Credit risk -** risk that interest and principal payments will not be made
  - **Interest rate risk -** risk that rates go up and the bonds an investor holds fall in value since these are now paying interest at below market rates
  - **Inflation risk -** risk that increasing prices significantly erodes purchasing power of investment interest received
  - **Re-investment risk -** the risk that when interest and/or principal is received, market interest rates are far lower, affording less attractive opportunities
  - **Liquidity risk -** many bonds have low liquidity

US Treasury bonds are regarded as having very low credit risk, and they are very liquid. Consequently investors demand lower yields from these securities

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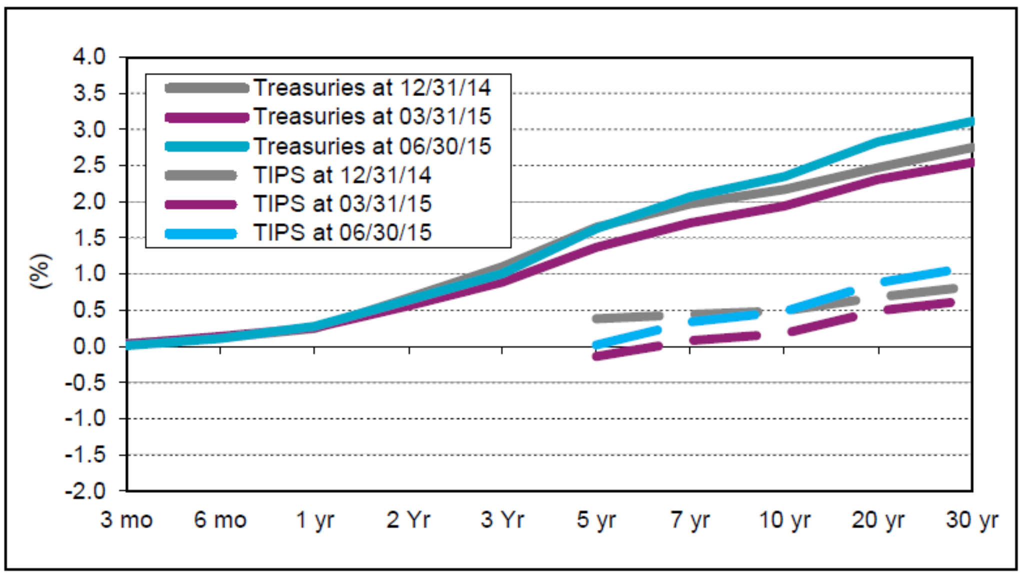
REVIEW OF ASSET CLASSES
BONDS – YIELD CURVE

- The yield curve is a measure of what the market is paying (in the form of yield or interest) for bonds of different maturities (time to repayment)
- Typically, longer-term bonds have higher yields than shorter-term bonds to compensate investors for the longer holding period (i.e. a maturity premium)
- Market participants often refer to changes in the US Treasury yield curve from one period to the next. For example, below you can see that the long end of the yield curve shifted upwards and "steepened" from 3/31/2015 (solid purple line) to 6/30/2015 (solid blue line)
- If the short end of the treasury curve rose but long yields did not (or long yields fell while short yields did not), it would be said the curve "flattened"

Treasury Yield Curve



Source: Federal Reserve

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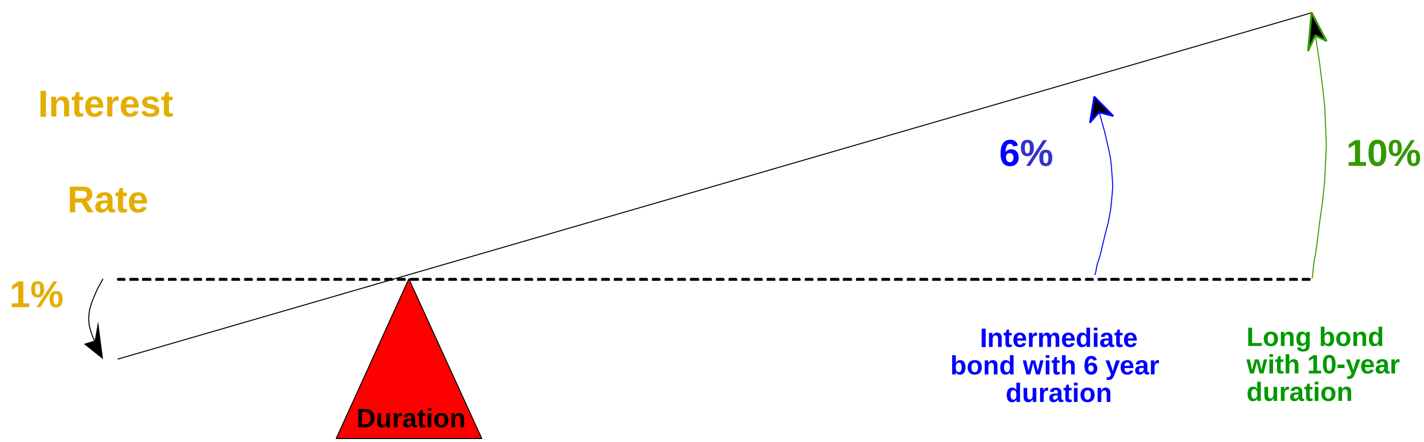
REVIEW OF ASSET CLASSES
BONDS – DURATION

- **Relationship between yield and price:** Bond prices move inversely to changes in interest rates
  – As interest rates rise (fall), bond prices fall (rise)
- **Duration** is a measure of a bond price's sensitivity to interest rate changes
  – For example, the price of a bond with a 10 year duration <u>increases</u> by about 10% for each 1% <u>reduction</u> in rates
  – Typically, long-term bonds are more sensitive to changes in interest rates (i.e. the change in price would fluctuate more) than shorter-term bonds



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REVIEW OF ASSET CLASSES
STOCKS - CATEGORIZATIONS

Stocks may be categorized by:

- Market Capitalization (large, mid, small)
- Geographic Focus (US, international developed, emerging markets, regional)
- Style (value, core, growth)
- Sector and industry
- Economic sensitivity (cyclicals like energy and industrials or non-cyclicals like consumer staples or healthcare)

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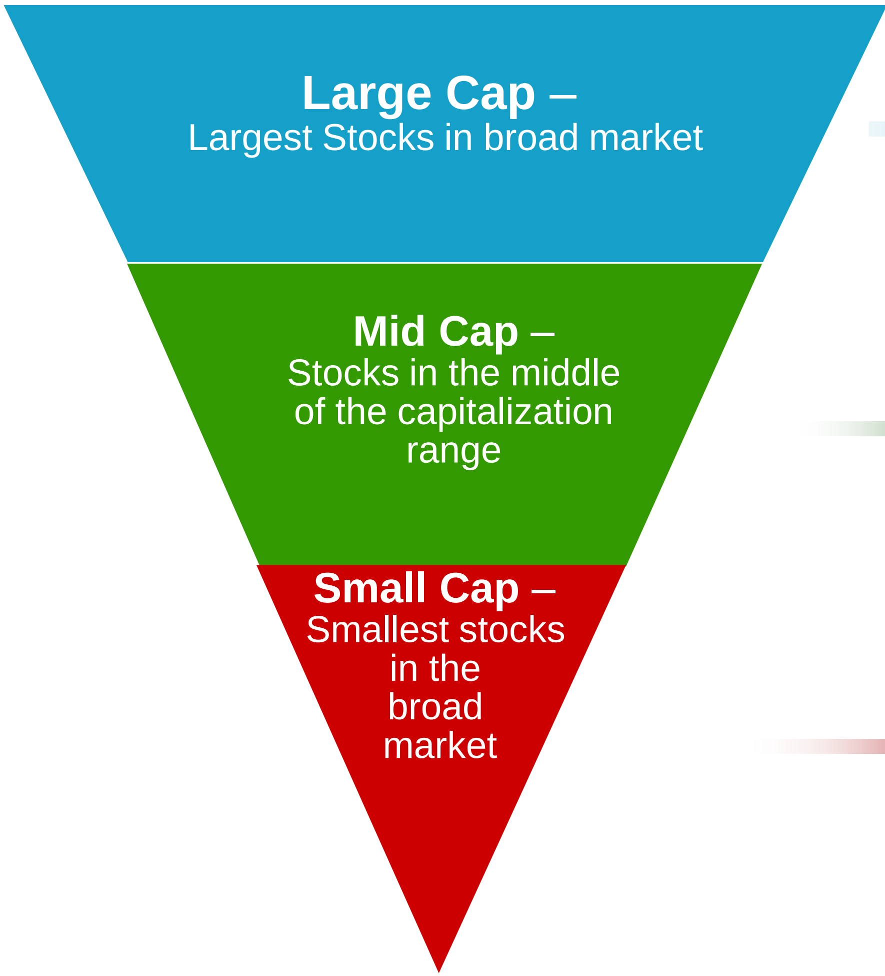
STOCKS – MARKET CAPITALIZATION

US Domestic Market



Large Cap
- Ranges from $22 B to $751 B
- Weight Average Market Cap: $165 B
- Example: Russell Top 200 Index

Mid Cap
- Ranges from $2 B to $29 B
- Weight Average Market Cap: $13 B
- Example: Russell Midcap Index

Small Cap
- Ranges from $177 M to $4 B
- Weight Average Market Cap: $1.9 B
- Example: Russell 2000 Index

Source: Russell website for Russell Top 200, Russell Midcap, and Russell 2000, respectively. As of 5/29/2015.

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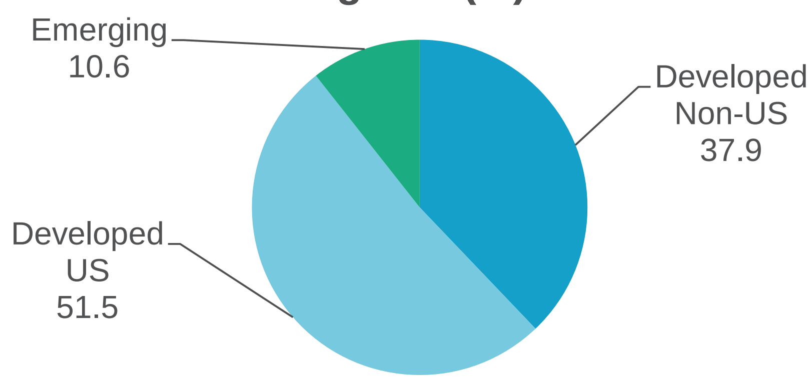
REVIEW OF ASSET CLASSES
STOCKS – COUNTRIES

- The City of Los Angeles offers an International Stock Fund that has stocks from developed non-US countries and emerging market countries
- Below are the countries included in the global equity market (i.e. MSCI All Country World Index, aka "ACWI")

DEVELOPED	% of ACWI	EMERGING	% of ACWI
AUSTRALIA	2.4	BRAZIL	0.8
AUSTRIA	0.1	CHILE	0.1
BELGIUM	0.4	CHINA	2.6
CANADA	3.2	COLOMBIA	0.1
DENMARK	0.6	CZECH REPUBLIC	0.0
FINLAND	0.3	EGYPT	0.0
FRANCE	3.4	GREECE	0.0
GERMANY	3.1	HUNGARY	0.0
HONG KONG	1.1	INDIA	0.8
IRELAND	0.1	INDONESIA	0.2
ISREAL	0.2	KOREA	1.5
ITALY	0.8	MALAYSIA	0.3
JAPAN	7.9	MEXICO	0.5
NETHERLANDS	1.0	PERU	0.0
NEW ZEALAND	0.0	PHILIPPINES	0.1
NORWAY	0.2	POLAND	0.2
PORTUGAL	0.1	QATAR	0.1
SINGAPORE	0.5	RUSSIA	0.4
SPAIN	1.2	SOUTH AFRICA	0.8
SWEDEN	1.0	TAIWAN	1.3
SWITZERLAND	3.2	THAILAND	0.2
UNITED KINGDOM	7.0	TURKEY	0.2
USA	51.5	UNITED ARAB EMIRATES	0.1

MSCI All Country World Index Regions (%)



Source: MSCI as of 6/30/2015

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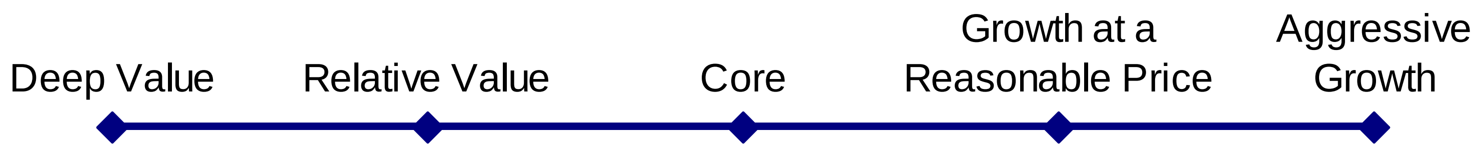
REVIEW OF ASSET CLASSES
STOCKS – GROWTH VERSUS VALUE

Value and growth stocks fall across a continuum



- **Value Stock Characteristics**
  - Cheap relative to other stocks in the index
  - May have higher debt loads
  - Market may perceive deteriorating fundamentals
  - Substantial portion of earnings are distributed to equity holders in the form of dividends
  - Valuation ratios like price-to-earnings (P/E) and price-to-book (P/B) are generally lower than the market
- **Growth Stocks Characteristics**
  - Sales and earnings are expanding faster than the general market and/or the industry average
  - Tend to be self-financing and hold relatively low levels of debt
  - Earnings are often plowed back into operations; therefore, dividend yield tends to be lower
  - Often the company maintains a solid position within an expanding part of the market
  - High valuation ratios and sometimes exhibit price volatility if earnings miss expectations

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BASIC CONCEPTS
RISK AND RETURN

- **Total Return:** Amount of capital appreciation and income earned during a period. Returns for periods greater than 1-year are typically annualized as opposed to cumulative returns
- **Excess Returns:** Portfolio return for the period minus the relevant index (aka "benchmark") return for the period. Often referred to as "alpha" or "value-add"
- **Risk:**
  - **Volatility** of returns of a portfolio, often measured by the standard deviation of its returns. Standard deviation is a measure of the dispersion of a set of data points from its mean
  - **Tracking Error**: The standard deviation (or volatility) of <u>excess</u> returns over a benchmark
- **Risk Adjusted Performance Measures:**
  - **Information Ratio**: Tilts or bets away from the benchmark lead to tracking error in the portfolio. The information ratio measures the success of these "tilts" away from the index. It measures the amount of "information" that the manager can extract from the market. It is the ratio of Excess Return divided by Tracking Error (i.e. excess return per unit of risk)
  - **Reward/Risk Ratio:** The annualized return divided by the annualized standard deviation (return per unit of risk). It is a measure of the trade-off between risk and return. The higher the result, the greater the level of return per unit of risk taken

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BASIC CONCEPTS
BENCHMARKS AND PEER COMPARISONS

Benchmark

- A measure against which performance is assessed
  - Most funds should have a stated benchmark which they aim to either match our outperform. Benchmarks tend to be a market index, such as the S&P 500 Index
  - A good benchmark is characterized by: being measurable, investable, and having a construction process that is known
    - Examples of appropriate benchmarks:
      - Large cap value➔ Russell 1000 Value Index
      - Developed non-US equity ➔ MSCI EAFE Index
      - Core US bond fund ➔ Barclays US Aggregate Index
  - Some portfolios are benchmark agnostic, meaning that they do not try to outperform a specified benchmark, but rather focus on achieving an absolute return

Peer group median

- In addition to evaluating active managers against a stated benchmark, it is also useful to measure performance relative to a group of comparable managers. Over the long-term, we expect active managers to exceed the performance of the median manager in the peer group

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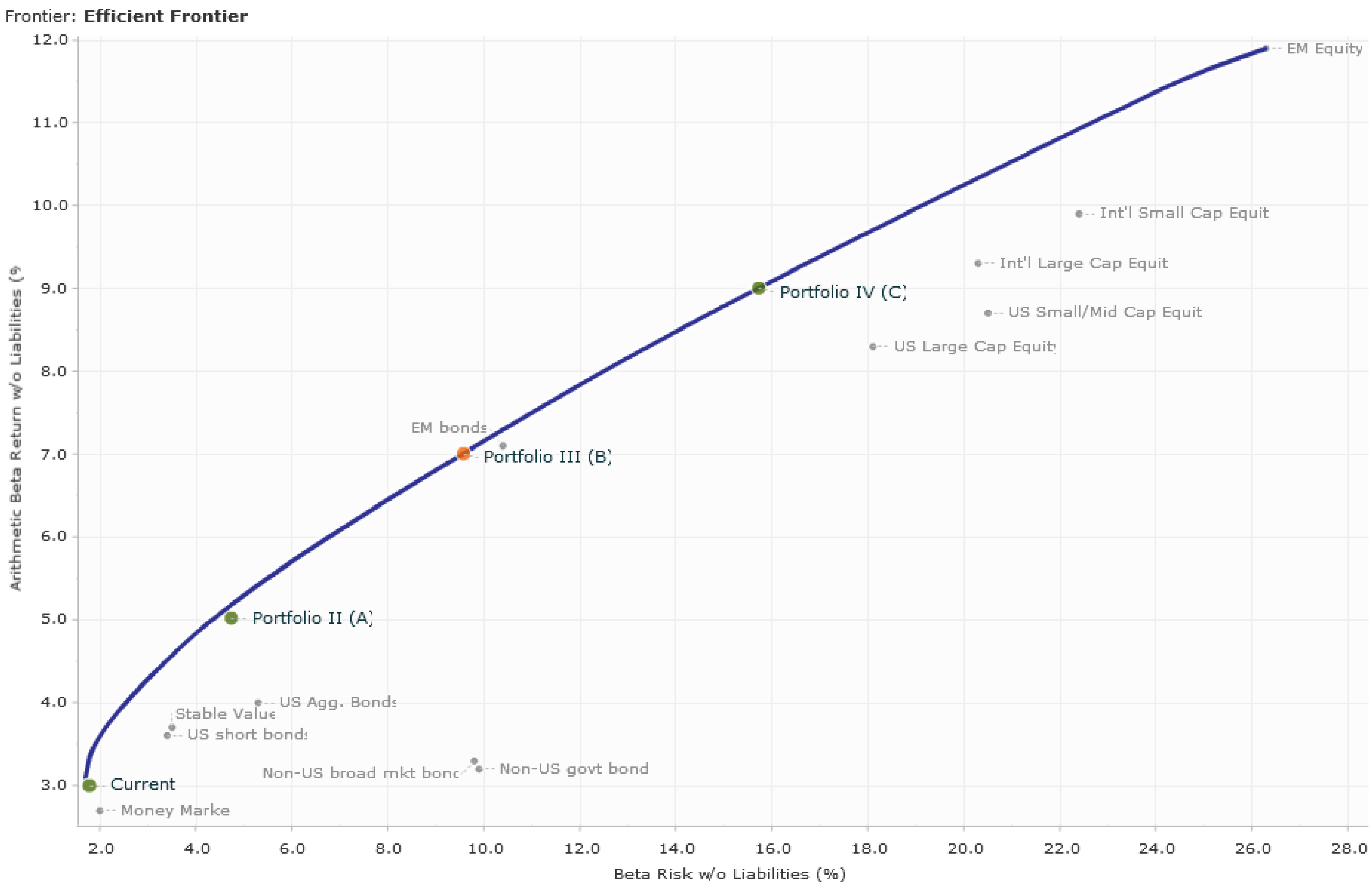
BASIC CONCEPTS
RISK/RETURN AND PORTFOLIO THEORY

- There is a fundamental relationship between risk and return: as expected when risk increases, so does its potential for reward
- The bold arc below ("efficient frontier") demonstrates the set of portfolios that deliver the greatest level of return for a given level of risk. Overall risk can be optimized by diversifying across numerous asset classes



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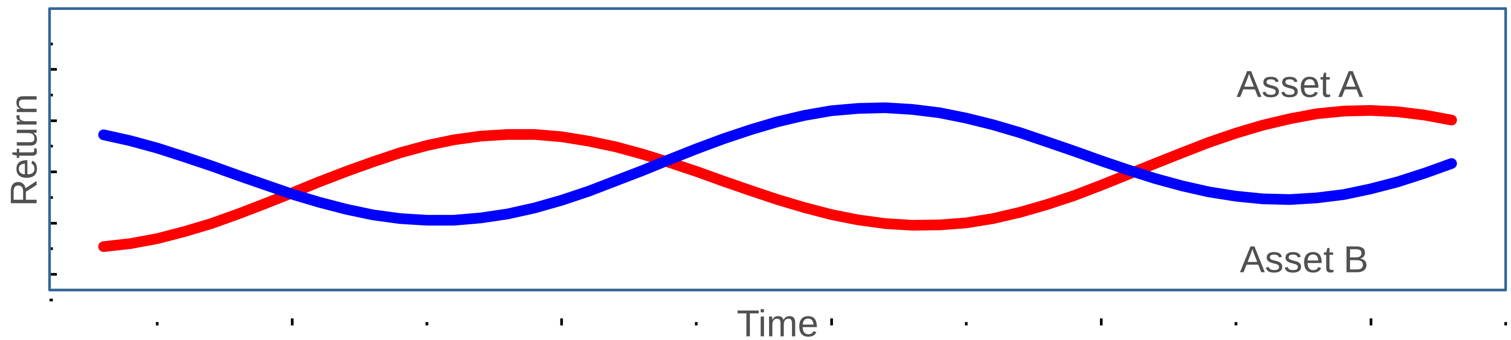
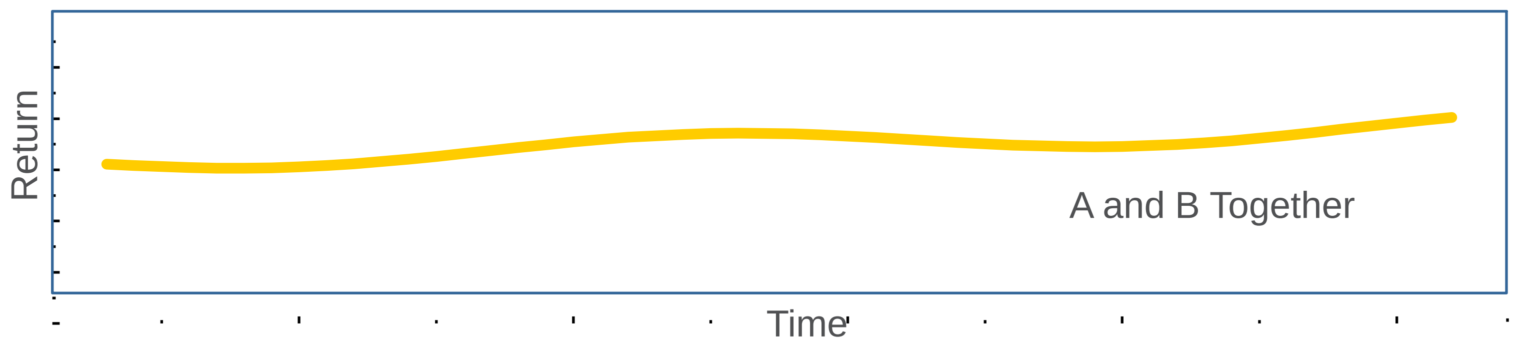
BENEFITS OF DIVERSIFICATION

- **Correlation:** Measure of the degree to which the movement of two asset classes is related. *The lower the correlations between assets in a portfolio, the better the portfolio diversification*
- **Example:** Assets A and B are negatively correlated so blending them together creates a more predictable return pattern





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ACTIVE VERSUS PASSIVE MANAGEMENT
PASSIVE

- **Passively Managed Portfolio**
  - Portfolio manager creates a portfolio of securities that replicates or closely follows a specified benchmark. No excess performance is sought and primary goal is to minimize tracking error with the benchmark and overall costs of the portfolio
- **What to expect with passively managed portfolios (i.e. index funds)**
  - No potential to add value
  - No surprises (i.e. index returns)
  - Lower fees
  - Cannot protect value in down markets
  - Low monitoring requirements (portfolio dictated by index)
  - Little flexibility to react to concentration issues (required new index to be established)

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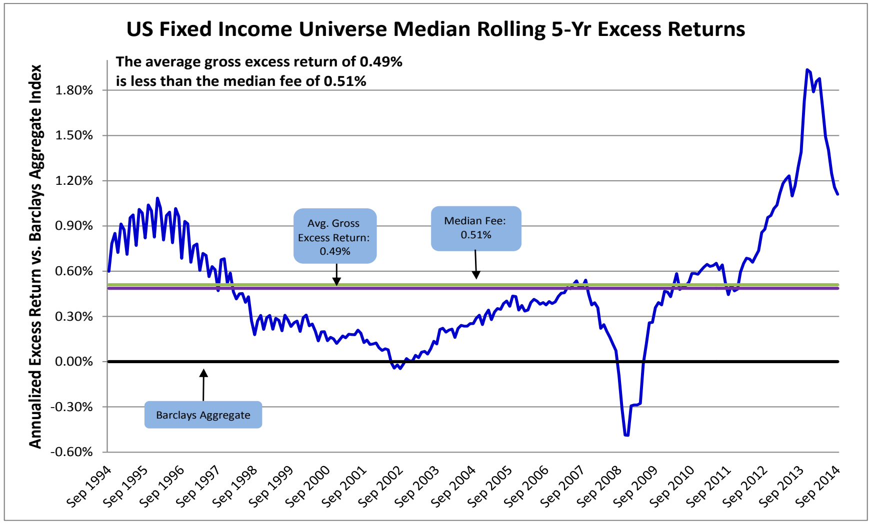
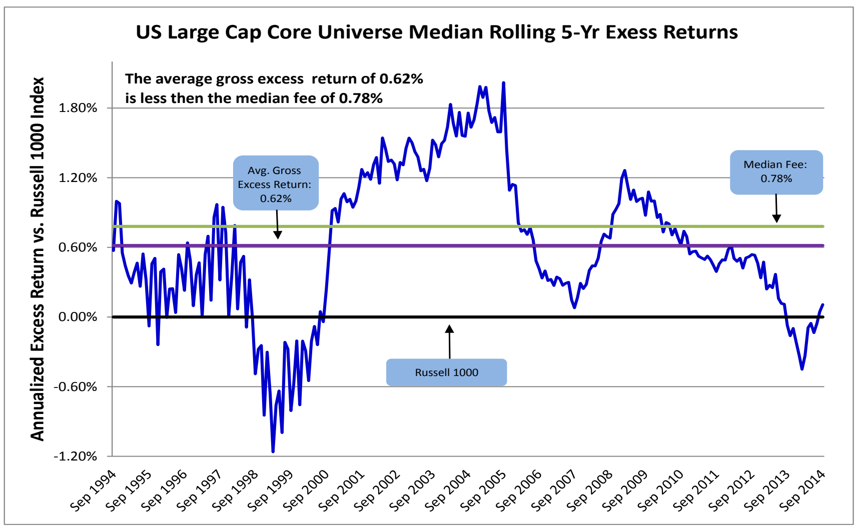
ACTIVE VERSUS PASSIVE MANAGEMENT
ACTIVE

- **Actively Managed Portfolio**
  - Portfolio manager attempts to achieve excess performance by taking positions that are meaningfully different than the benchmark in an attempt to beat the index
  - The term “alpha” is the excess return generated due to the “skill” of the portfolio manager
- **What to expect with actively managed portfolios**
  - Opportunity to add value above the index
  - Opportunity to protect value in down markets
  - Greater flexibility to react to market bubbles and position the portfolio elsewhere
  - Higher fees
  - Need to monitor managers’ portfolio construction
  - Possibility of underperformance
- **In what markets does active management work best?**
  - The more inefficient the market, the more opportunity there is for an investor to get an informational advantage over other investors
    - Markets with lots of research analyst coverage (e.g. large cap equity) are relatively efficient
    - Small cap and international equity markets are less efficient
  - Markets that are driven by the performance of individual companies (i.e. company fundamentals), versus markets that are driven by macro economic events/news

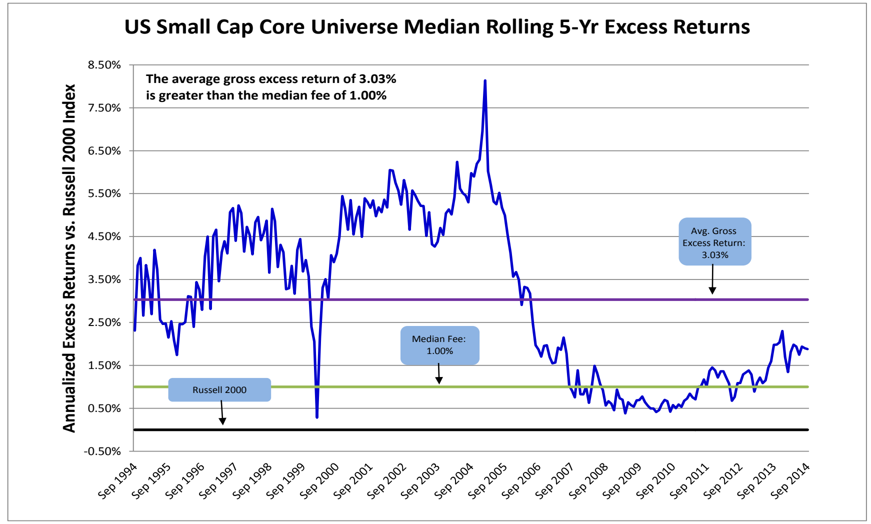
ACTIVE VERSUS PASSIVE MANAGEMENT
ASSET CLASS IMPACTS

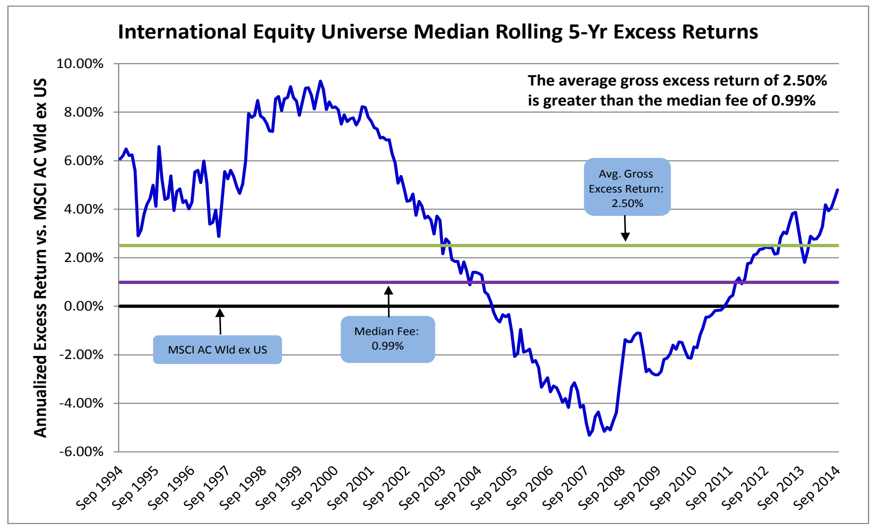
Core Fixed Income and US Large Cap Equity – Preference for Passive





US Small Cap and International Equity – Preference for Active





QUARTERLY PERFORMANCE REPORTING
PERFORMANCE SUMMARY TABLE

- Returns for various time periods as of an ending date (e.g. June 30, 2015).
- Example: **DCP Mid Cap Stock** consists of three underlying funds (Vanguard, RidgeWorth, and Voya). We show the performance for each fund.

	Market Value	% of Portfolio	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank
			Ending June 30, 2015							
Domestic Equity										
DCP Large Cap Stock Fund**	$1,566,622,692	31.6%	0.3%	25	1.2%	31	7.4%	25	17.3%	31
S&P 500			*0.3%*	*27*	*1.2%*	*32*	*7.4%*	*25*	*17.3%*	*30*
DCP Mid Cap Stock Fund**	$232,229,846	4.7%	-1.3%	67	2.7%	59	8.3%	20	19.6%	20
*DCP Mid Cap Custom Benchmark***			*-1.5%*	*72*	*2.4%*	*63*	*8.0%*	*23*	*19.5%*	*22*
Mercer Mutual Fund US Equity Mid Cap Core Median			*-0.8%*		*3.4%*		*5.8%*		*17.9%*	
Vanguard Mid Cap Index Fund Instl Plus			-1.2%	60	3.1%	56	8.7%	19	19.7%	20
*Vanguard Spliced Mid Cap***			*-1.2%*	*60*	*3.1%*	*56*	*8.7%*	*19*	*19.7%*	*20*
Mercer Mutual Fund US Equity Mid Cap Core Median			*-0.8%*		*3.4%*		*5.8%*		*17.9%*	
RidgeWorth Mid Cap Value Equity Fund I			-1.4%	58	-1.0%	93	0.0%	80	17.7%	62
Russell MidCap Value			*-2.0%*	*78*	*0.4%*	*72*	*3.7%*	*51*	*19.1%*	*37*
Mercer Mutual Fund US Equity Mid Cap Value Median			*-1.1%*		*1.7%*		*3.8%*		*18.3%*	
Voya Mid Cap Opportunities Fund R6			-1.5%	92	3.7%	86	10.4%	41	15.8%	77
Russell MidCap Growth			*-1.1%*	*87*	*4.2%*	*80*	*9.5%*	*49*	*19.2%*	*28*
Mercer Mutual Fund US Equity Mid Cap Growth Median			*0.5%*		*6.4%*		*9.2%*		*17.4%*	

- Each fund is compared against a:
  - **Benchmark**
  - **Peer group median**

- **Percentile ranks** of the fund and index returns relative to peer group (1st percentile is the best. 100th percentile is the worst).

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PERFORMANCE ATTRIBUTION
FUND-LEVEL ATTRIBUTION

- **Example:** Breaking down the performance of the **DCP Mid Cap Stock Fund**, which consists of: 50% Vanguard Mid-Cap Index, 25% RidgeWorth Mid Cap Value, and 25% Voya MidCap Opportunities Fund.

	Actual Return 2Q 2015	
DCP Mid Cap Stock Fund *Russell Mid Cap Index*	**-1.3%** *-1.5%*	The overall fund outperformed the Russell Mid Cap Index. To see why, look at the performance of the underlying funds (see below)
50% Vanguard Mid Cap Index Fund *CRSP US Mid Cap Index*	**-1.2%** *-1.2%*	**Passive (Index) Fund**: Return matched its index
25% RidgeWorth Mid Cap Value Equity *Russell MidCap Value*	**-1.4%** *-2.0%*	**Active Value Fund:** Outperformed its index and therefore contributed to the outperformance of the DCP Mid Cap Fund
25% Voya Mid Cap Opportunities *Russell MidCap Growth*	**-1.5%** *-1.1%*	**Active Growth Fund:** Underperformed its index and therefore detracted from the relative performance of the DCP Mid Cap Fund

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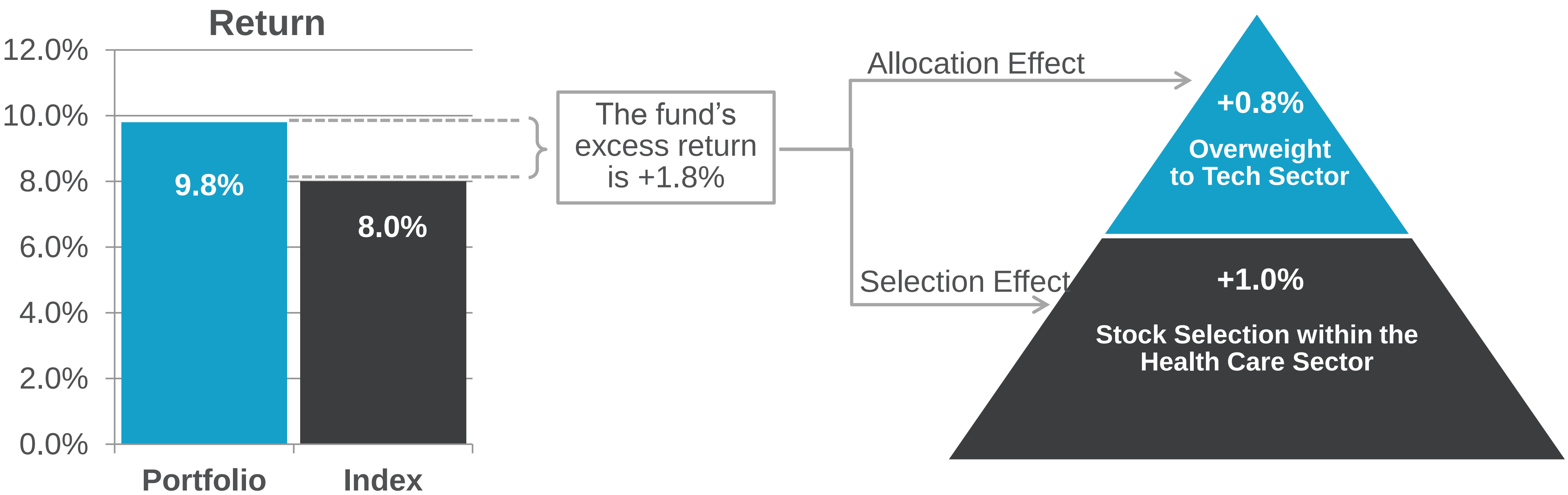
PERFORMANCE ATTRIBUTION
EQUITY PORTFOLIO

- **Sector Allocation Effect**: The impact of under/overweight sector allocation decisions
- **Stock Selection Effect**: The impact of selecting stocks that out/underperform those within the index



Sectors	Portfolio Weight	Benchmark Weight	Difference in Weight	Portfolio Return	Benchmark Return	Difference in Return	Allocation Effect	Selection Effect	Total Excess Return Attribution
Technology	23.0	19.0	4.0	20.0	20.0	0.0	0.8	0.0	0.8
Health Care	13.5	13.5	0.0	11.4	4.0	7.4	0.0	1.0	1.0
							0.8	**1.0**	**1.8**

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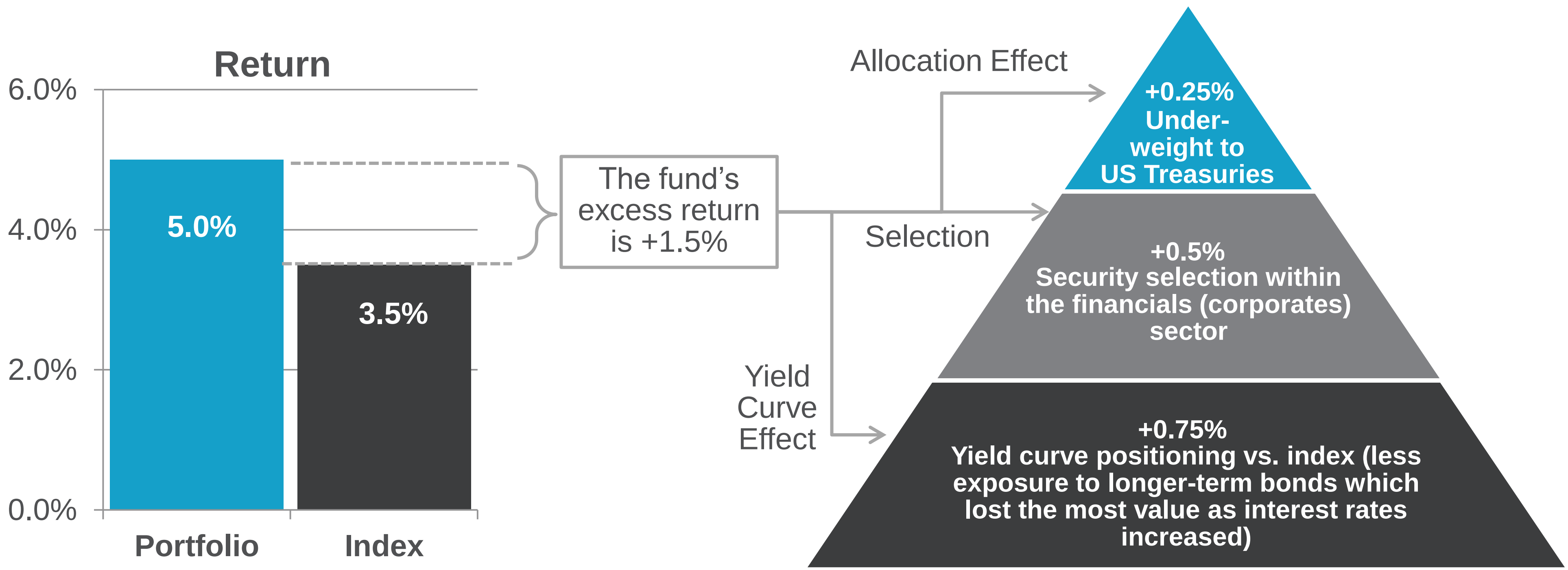
PERFORMANCE ATTRIBUTION
FIXED INCOME PORTFOLIO

- **Yield Curve:** Measures the impact of the portfolio's yield curve positioning relative to the index
- **Sector Allocation Effect:** The impact of under/overweight sector allocation decisions
- **Security Selection Effect:** The impact of selecting securities that out/underperform those within the index



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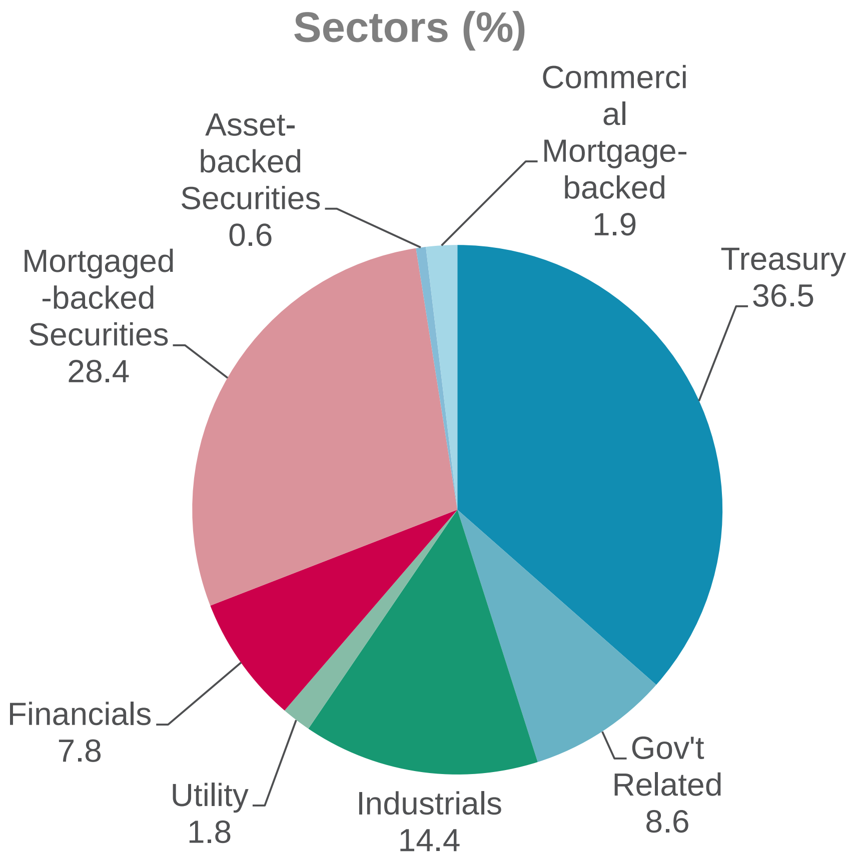
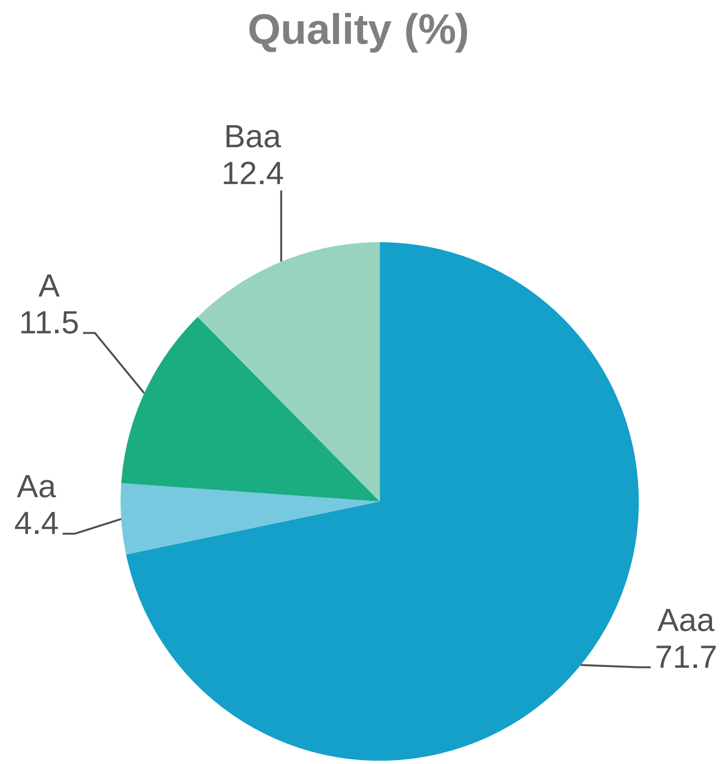
APPENDIX

APPENDIX - REVIEW OF ASSET CLASSES
BONDS – INVESTMENT GRADE BOND MARKET

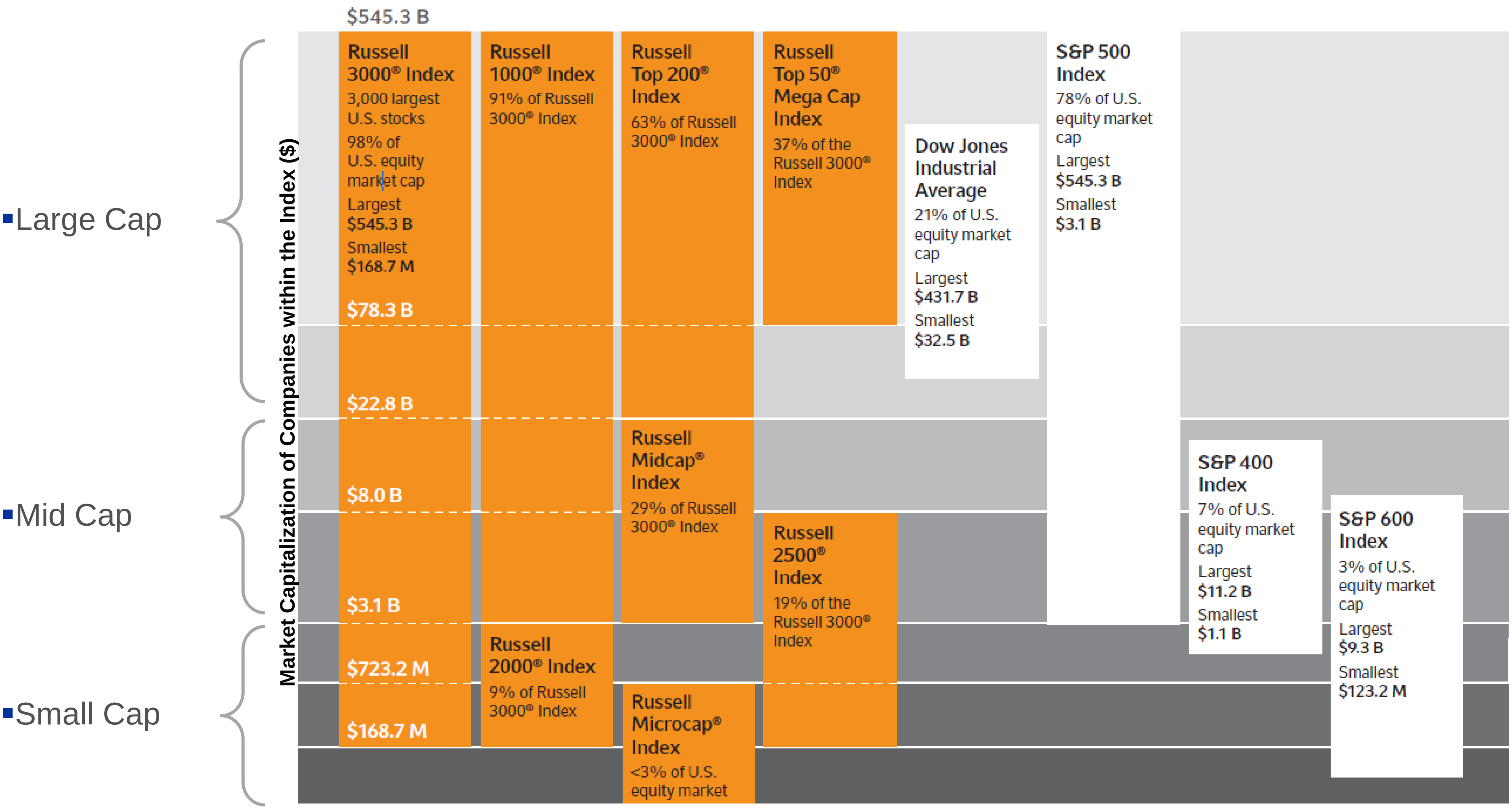
Barclays US Aggregate Bond Index % of Market Value
As of September 30, 2015





Total Market Value
$18.2 Trillion

STOCKS – MARKET CAPITALIZATION



Source: Russell U.S. Indexes. Data as of 5/31/2014.

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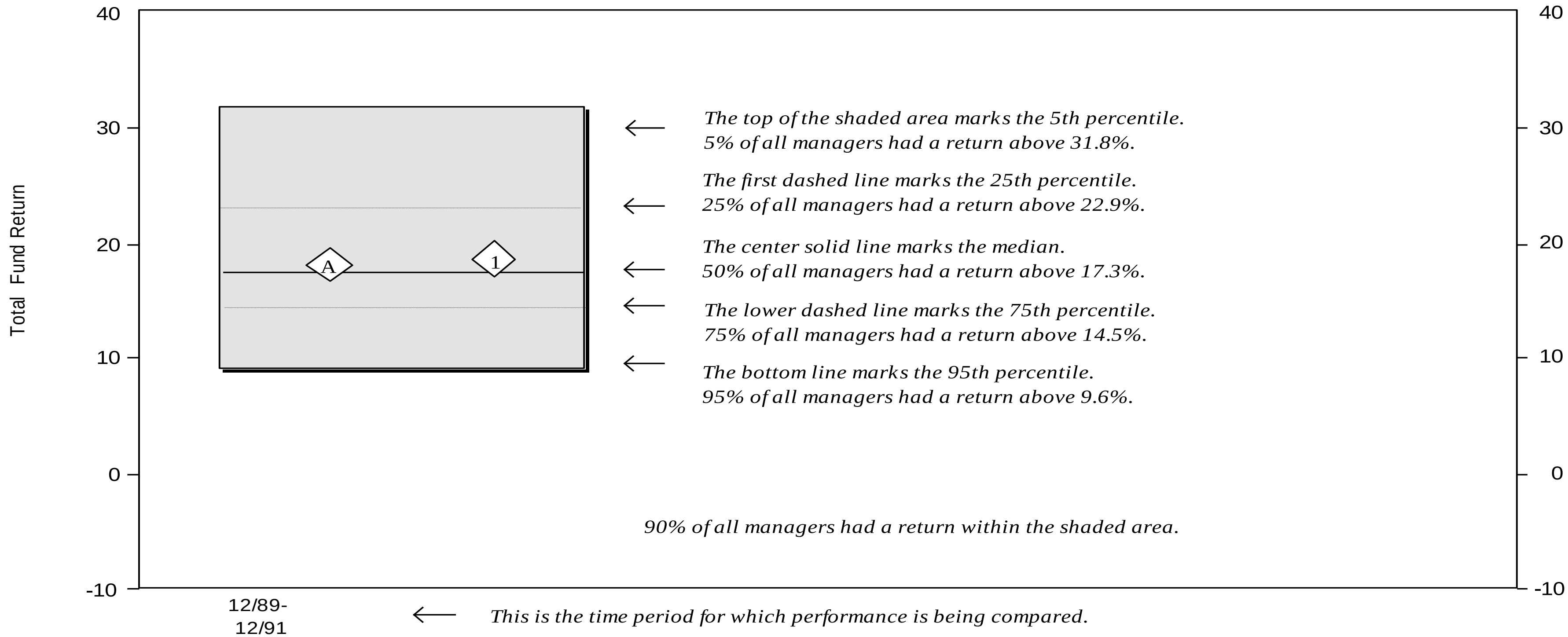
APPENDIX – QUARTERLY PERFORMANCE REPORTING
DESCRIPTION OF PERFORMANCE GRAPH



This is the time period for which performance is being compared.

5th Percentile	31.8	
25th Percentile	22.9	
MEDIAN	17.9	
75th Percentile	14.5	
95th Percentile	9.6	
Manager (A)	18.3	48
Index (1)	18.5	45

These are the returns for each of the percentiles mentioned above.

This is the return for the manager. It is representated by the diamond labeled "A" above.

This is the return for the Index or "benchmark" specified by the Investment Policy. It is representative by the diamond labeled "1" above.

These are the percentile rankings for manager & index, respectively.

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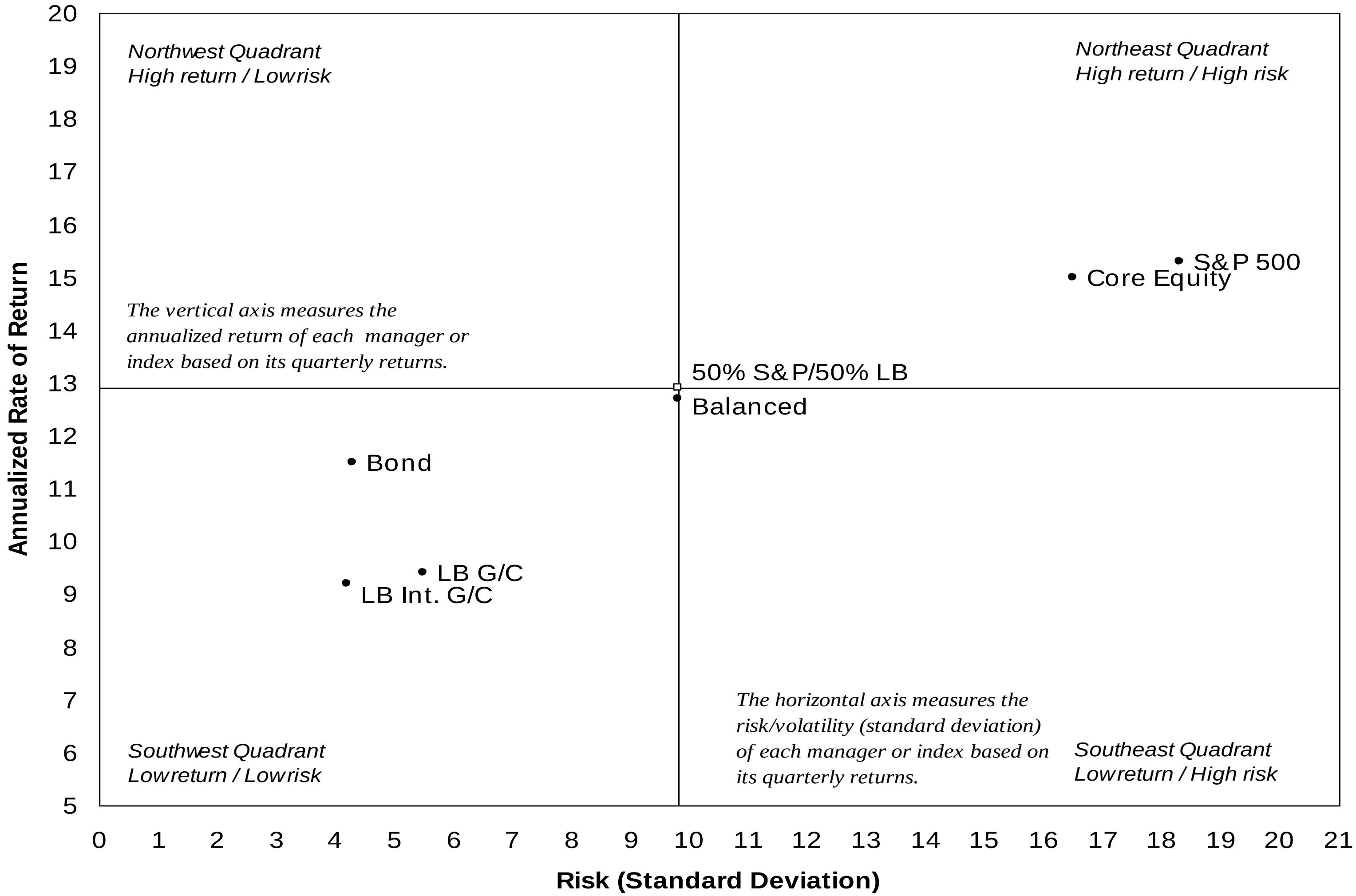
APPENDIX – QUARTERLY PERFORMANCE REPORTING
DESCRIPTION OF RETURN/RISK GRAPH



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