

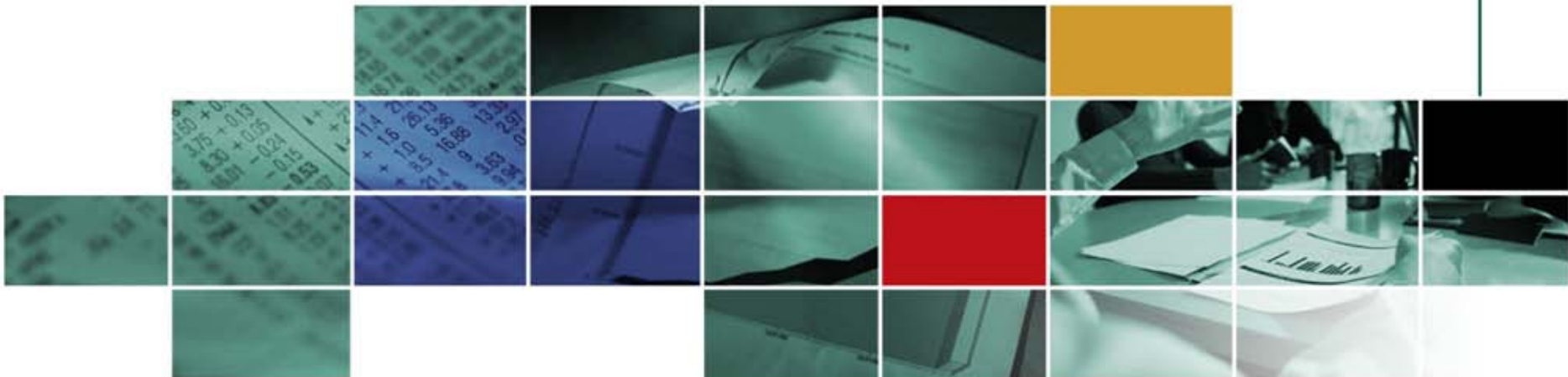
RVKuhns

▶▶▶ & ASSOCIATES, INC.

Diversification, Now and Next Year

Texas Municipal Retirement System

June 2010





Presentation Agenda

- I. TMRS Today: Diversification in Progress

- II. TMRS Tomorrow: What's Next?
 - I. Looking Forward: Equity
 - II. Looking Forward: Real Return
 - III. Looking Forward: Real Estate

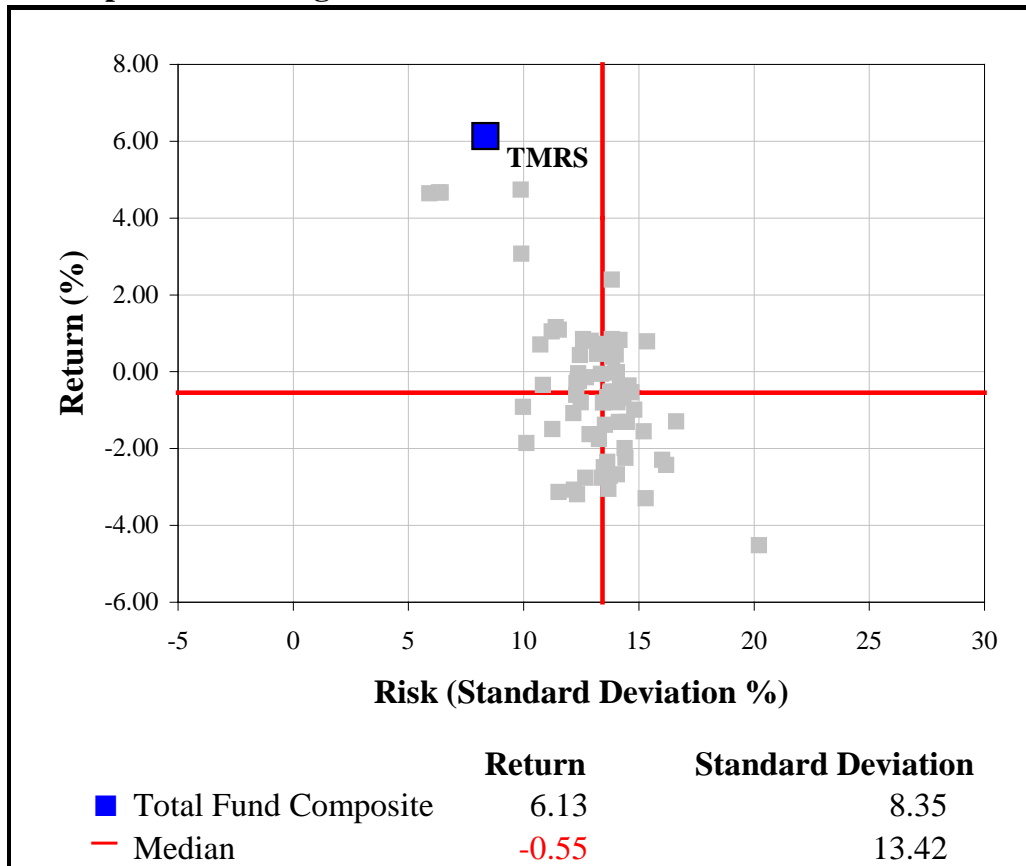
- III. What's Next? Summary

Public Fund Comparison March 31st 2010

TMRS Return and Risk

- ▶ 3 year risk and return profile compared to peers as of March 31, 2010

Plan Sponsor Scattergram - 3 Years





TMRS Today: Diversification In Progress



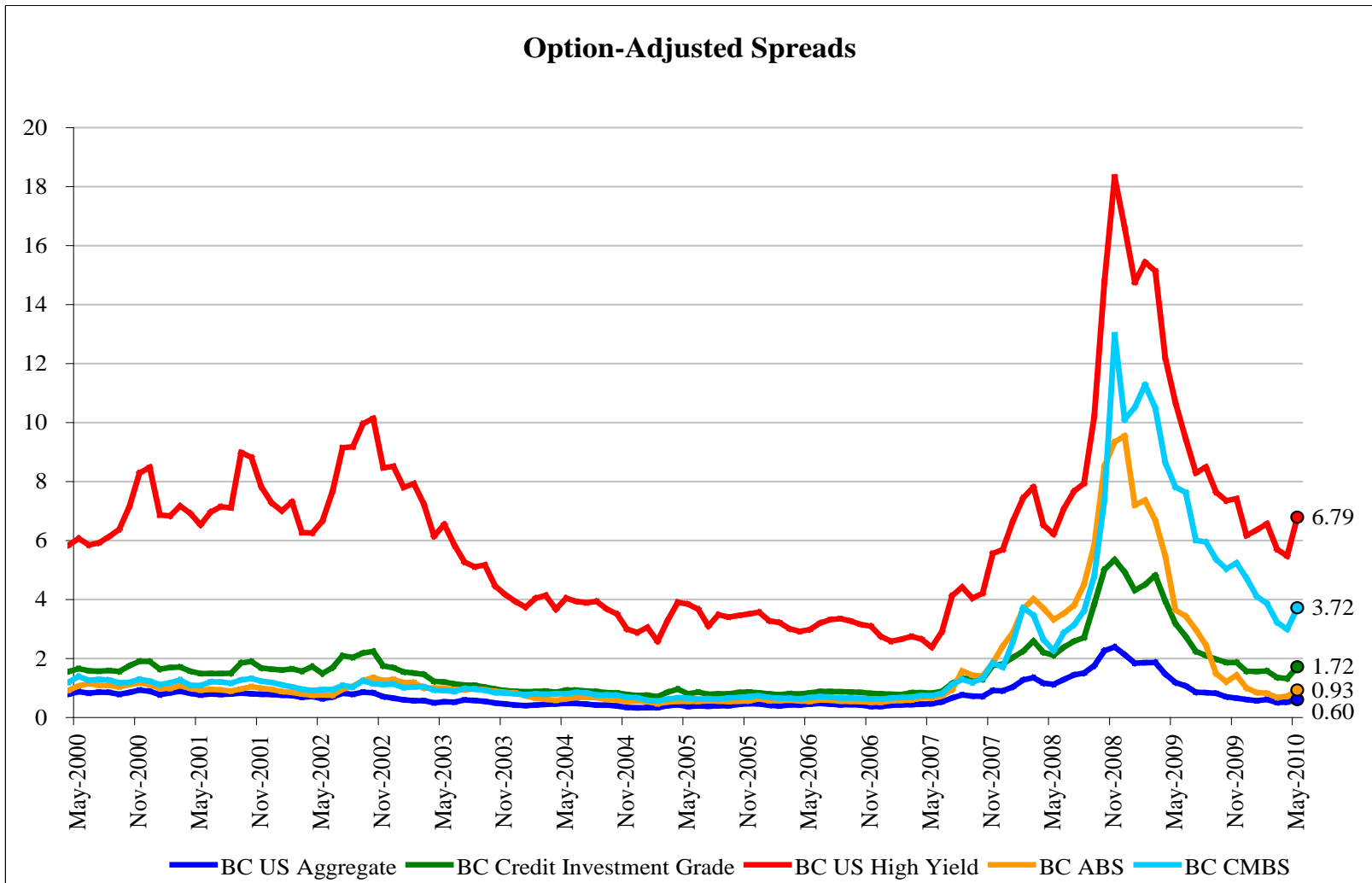
Current Market Environment

TMRS Portfolio

- ▶ Historic period in capital markets
 - ▶ TMRS original portfolio of high quality, long duration bonds were sold at an advantageous time
 - ▶ TMRS equity investments have been made in a period of high volatility and uncertainty, with relatively attractive valuations
- ▶ TMRS has weathered the storm well through implementing methodical change

Current Market Environment

Risky Assets Re-Priced, but Recovering

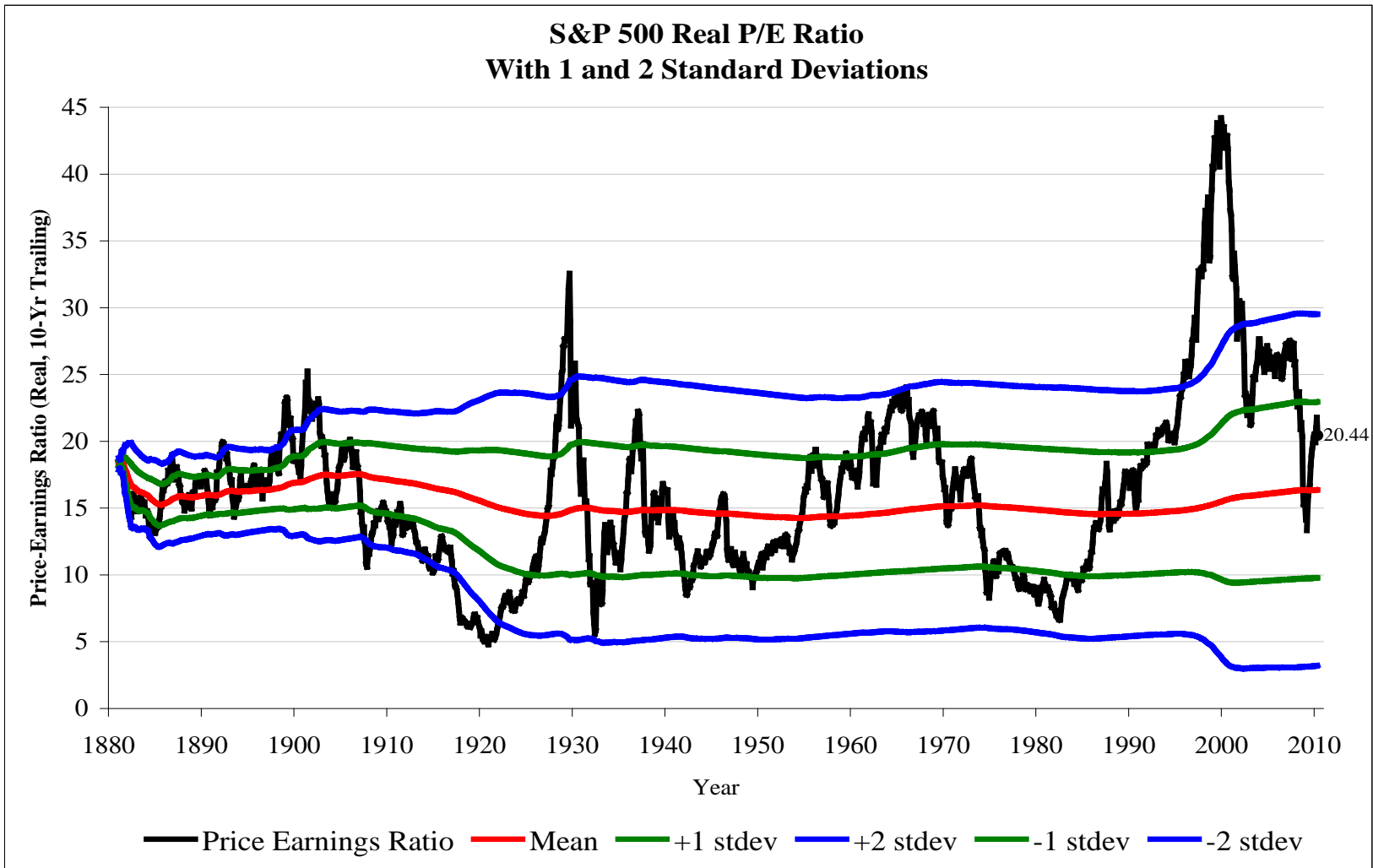


Basis point spreads are relative to Treasury securities (wider spread = cheaper price)

As of May 31, 2010

Current Market Environment

Historical P/E Ratio Averages



The S&P P/E ratio is based on real historical 10-year earnings.
Estimated through May 31, 2010



Recent Portfolio Events

Summary: 2009

- ▶ **Total Return Orientation**
 - ▶ Legislative change from income only orientation occurred in June 2009
 - ▶ Allows for meeting plan objectives through broader diversification
- ▶ **Investment Policy Review**
 - ▶ In-depth review and revisions of the TMRS investment policy
- ▶ **Asset Allocation Study Completed**
 - ▶ Approved interim target portfolios that build toward a final target allocation
- ▶ **Diversification**
 - ▶ Additional fixed income exposure by including small allocations to high yield and non-U.S. within new core plus mandate
 - ▶ Methodically increased U.S. and International equity exposure on a monthly basis
- ▶ **Risk Vendor Search**
 - ▶ Risk vendor search is well under way and selection is expected to be made in 2010



Recent Portfolio Events

Summary: 2009

▶ Fixed Income

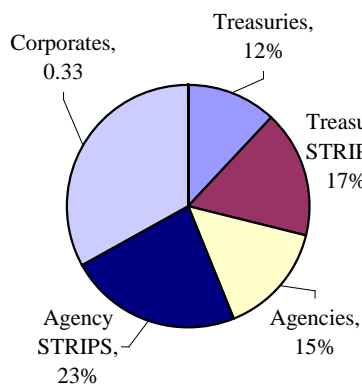
- ▶ Interest rate risk has been reduced and portfolio has become more diversified
- ▶ BlackRock is now managing to a more traditional core fixed income mandate
- ▶ Core plus fixed income manager search completed and mandate implemented
 - ▶ 5% allocation funded in Oct 2009
 - ▶ Balance of targeted 10% allocation funded in Jan 2010
- ▶ “Core plus” is the addition of non-index security types to the portfolio
 - ▶ High yield
 - ▶ Non-U.S. fixed income
- ▶ Adding the “plus” sectors introduces moderate risk yet enhances returns and provides diversification

Recent Portfolio Events

Summary: 2009

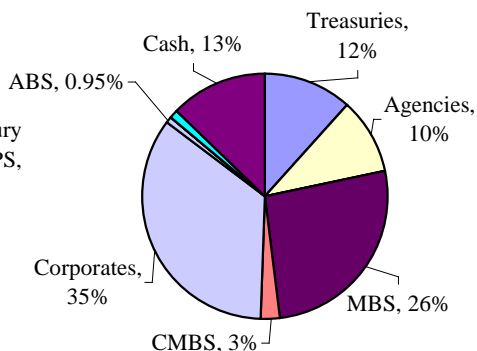
- ▶ TMRS fixed income previous and current allocations
 - ▶ Shortened duration to reduce interest rate risk
 - ▶ Additional sectors to diversify and enhance returns

TMRS May 2008



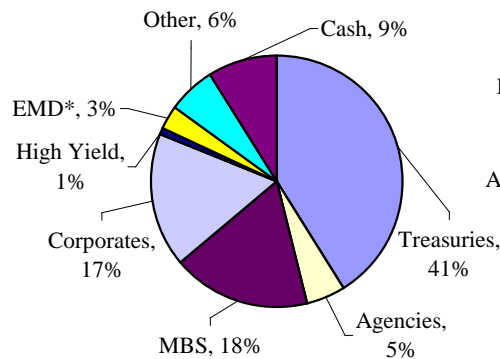
Duration
13.80

BlackRock April 2010



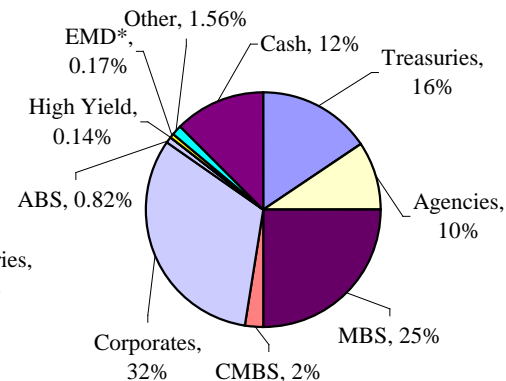
Duration
4.21

PIMCO April 2010



Duration
4.68

TMRS April 2010



Duration
4.27

* EMD = Emerging Market Debt

* Other includes municipals

Source: BlackRock and PIMCO



Recent Portfolio Events

Summary: 2009

▶ Equity

- ▶ Continued to methodically increase passive (indexed) domestic equity and international equity exposures
- ▶ Domestic Equity
 - ▶ Passive (indexed) exposure
 - ▶ Dollar cost averaging to minimize risk
 - ▶ 14% position as of 4/30/2010
- ▶ International Equity
 - ▶ Passive (indexed) exposure
 - ▶ Developed countries only to date
 - ▶ Dollar cost averaging to minimize risk
 - ▶ 13% position as of 4/30/2010

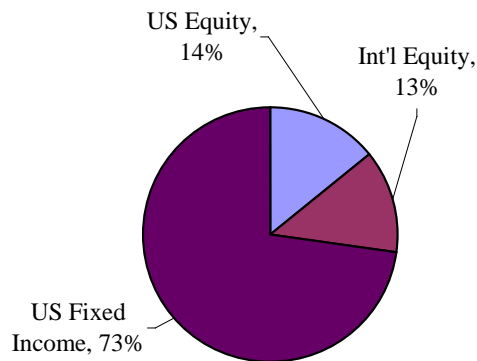
Recent Portfolio Events

Summary: 2009

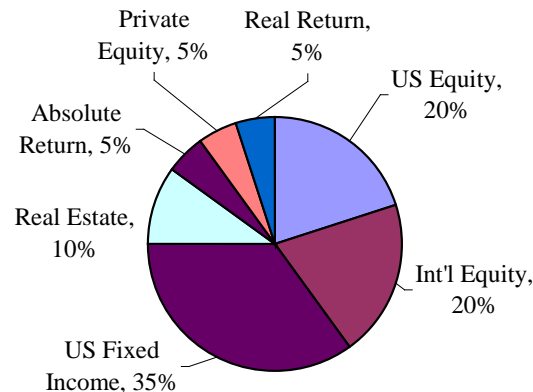
▶ Total Fund

- ▶ Current TMRS asset allocation (4/2010) and target allocation compared to the average public retirement fund asset allocation (12/2009)

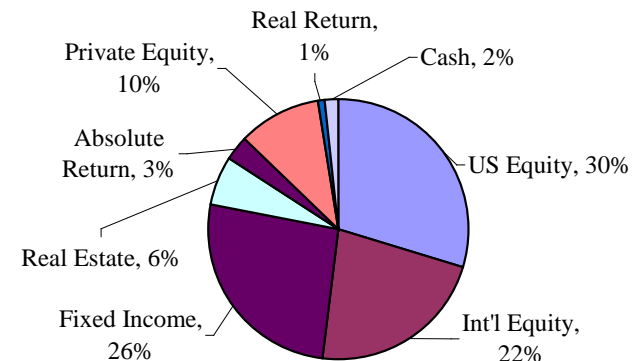
TMRS Current Allocation



TMRS Long-Term Allocation



Weighted Average Public Fund





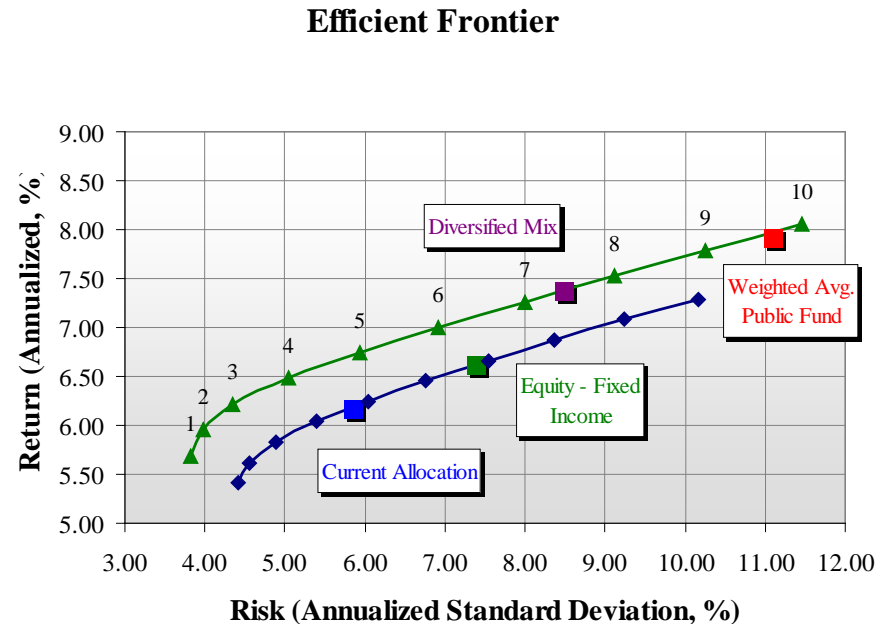
TMRS Tomorrow: What's Next?

What's Next?

Long-Term Path

- ▶ The long-term portfolio will be more diversified and similar to peers, yet unique to TMRS' risk tolerance and return objectives
- ▶ Many steps along the way, slow and methodical

Asset Classes	Min	Max	Current Allocation	Equity - Fixed Income	Diversified Mix	Weighted Avg. Public Fund
Cash Equivalents	0	0	0	0	0	2
Broad US Equity	0	30	14	20	20	30
Broad International Equity	0	30	13	20	20	22
US Core Fixed Income	0	100	73	60	35	26
Real Estate - Core	0	10	0	0	10	6
Real Return	0	5	0	0	5	1
Private Equity	0	5	0	0	5	10
Absolute Return	0	5	0	0	5	3
Total			100	100	100	100
Total Equity	0	60	27	40	40	52
Return			6.17	6.61	7.37	7.92
Risk (1 Year Holding Period)			5.85	7.38	8.48	11.09





What's Next?

Looking Forward: 2010

- ▶ **Fixed Income**
 - ▶ Maintain current structure through 2010
 - ▶ PIMCO to manage 10% core plus target, BlackRock managing the remainder
- ▶ **Equity**
 - ▶ Continue averaging towards overall equity target (20% U.S., 20% non-U.S.)
 - ▶ Seek Board approval to broaden international exposure by converting from EAFE to ACW ex US IMI
 - ▶ Includes emerging markets, Canada and non-U.S. small cap
- ▶ **Introduce real return allocation (target 5% of total plan)**
 - ▶ Introduce inflation-linked bonds
 - ▶ Consider U.S. Treasury Inflation Protected Securities (TIPS) and global inflation-linked bonds
- ▶ **Introduce real estate allocation (target 10% of total plan)**
 - ▶ Real estate consultant has been selected
 - ▶ Real estate structure studies, investment policy development and possible manager selection



TMRS Tomorrow: International Equity Diversified



Looking Forward: Equity

International Equity Approach

- ▶ Convert the current TMRS International Equity portfolio to a passive ACW ex US IMI* approach rather than passive EAFE
 - ▶ Offers better coverage of the broad non-US equity markets
 - ▶ Emerging markets and small cap exposure provides higher expected long-term returns and additional diversification
 - ▶ Further diversification with addition of Canada (8.3% of ACW ex US IMI)

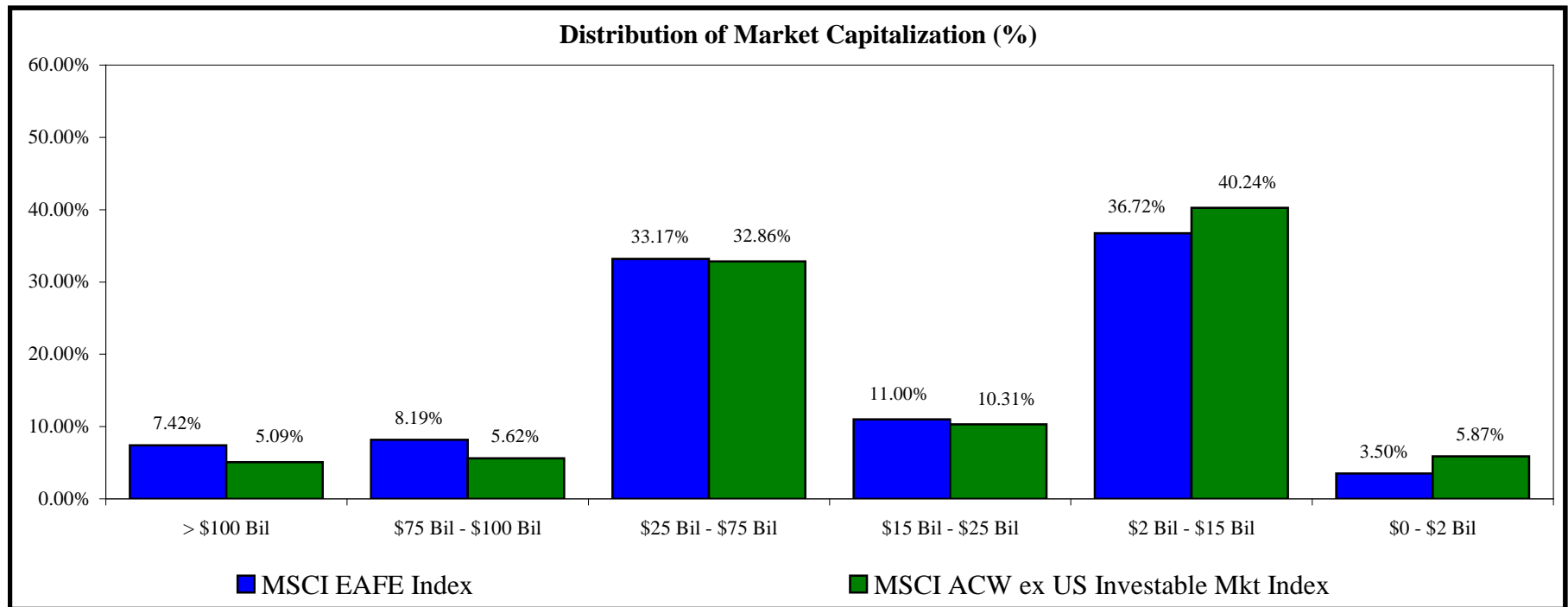
* All-Country World excluding United States Investable Market Index

Looking Forward: Equity

MSCI ACW ex US Investable Market Index

- ▶ A broad international (developed and emerging markets) index that also includes allocations to international small cap securities

May 31, 2010





Looking Forward: Equity

Index Comparison

- ▶ The MSCI EAFE index excludes countries considered emerging markets and does not include Canada
- ▶ Emerging markets are developing countries (instead of developed)
- ▶ The MSCI ACW ex US IMI currently consists of 23% emerging markets and 8% Canada

Looking Forward: Equity

Index Comparison cont.

EAFE

Large Cap
82.49%
794 Securities

Mid Cap
17.51%
169 Securities

Total # of securities: 963

ACW ex. US IMI

Canada
Large/Mid
Cap
7.21%

316
Securities

EAFE
Large/Mid Cap
60.43%

963 Securities

Emerging
Markets
Large/Mid Cap
20.38 %

769 Securities

International Developed
Small Cap
9.06%

2,354 Securities

Emerging
Markets
Small Cap
2.92%

1881 Securities

Total # of securities: 6,283

ACWI ex US

ACW ex. US IMI
includes large,
mid and small
cap stocks

Looking Forward: Equity

Index Comparison cont.

MSCI EAFE	
Australia	8.2%
Austria	0.3%
Belgium	1.0%
Denmark	1.0%
Finland	1.1%
France	9.9%
Germany	7.8%
Greece	0.3%
Hong Kong	2.5%
Ireland	0.3%
Israel Domestic	0.9%
Italy	2.8%
Japan	23.5%
Netherlands	2.6%
New Zealand	0.1%
Norway	0.7%
Portugal	0.3%
Singapore	1.6%
Spain	3.4%
Sweden	2.8%
Switzerland	7.6%
United Kingdom	21.3%

Total Developed (22): 100%

MSCI ACW ex US Investable Market Index (Canada + EAFE + EM)

MSCI EAFE	
Australia	5.7%
Austria	0.3%
Belgium	0.7%
Denmark	0.7%
Finland	0.8%
France	6.3%
Germany	5.2%
Greece	0.3%
Hong Kong	1.7%
Ireland	0.3%
Israel Domestic	0.6%
Italy	2.0%
Japan	16.4%
Netherlands	1.8%
New Zealand	0.1%
Norway	0.6%
Portugal	0.2%
Singapore	1.2%
Spain	2.2%
Sweden	2.0%
Switzerland	4.9%
United Kingdom	14.5%

Canada	8.3%
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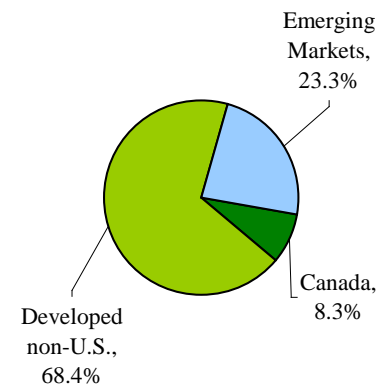
Total Developed (23): 76.7%

+

MSCI Emerging Markets	
Brazil	3.4%
Chile	0.4%
China	4.3%
Colombia	0.2%
Czech Republic	0.1%
Egypt	0.1%
Hungary	0.1%
India	2.0%
Indonesia	0.5%
Korea	3.1%
Malaysia	0.7%
Mexico	1.0%
Morocco	0.0%
Peru	0.1%
Philippines	0.1%
Poland	0.4%
Russia	1.4%
South Africa	1.8%
Taiwan	2.8%
Thailand	0.4%
Turkey	0.4%

Emerging Markets (21): 23.3%

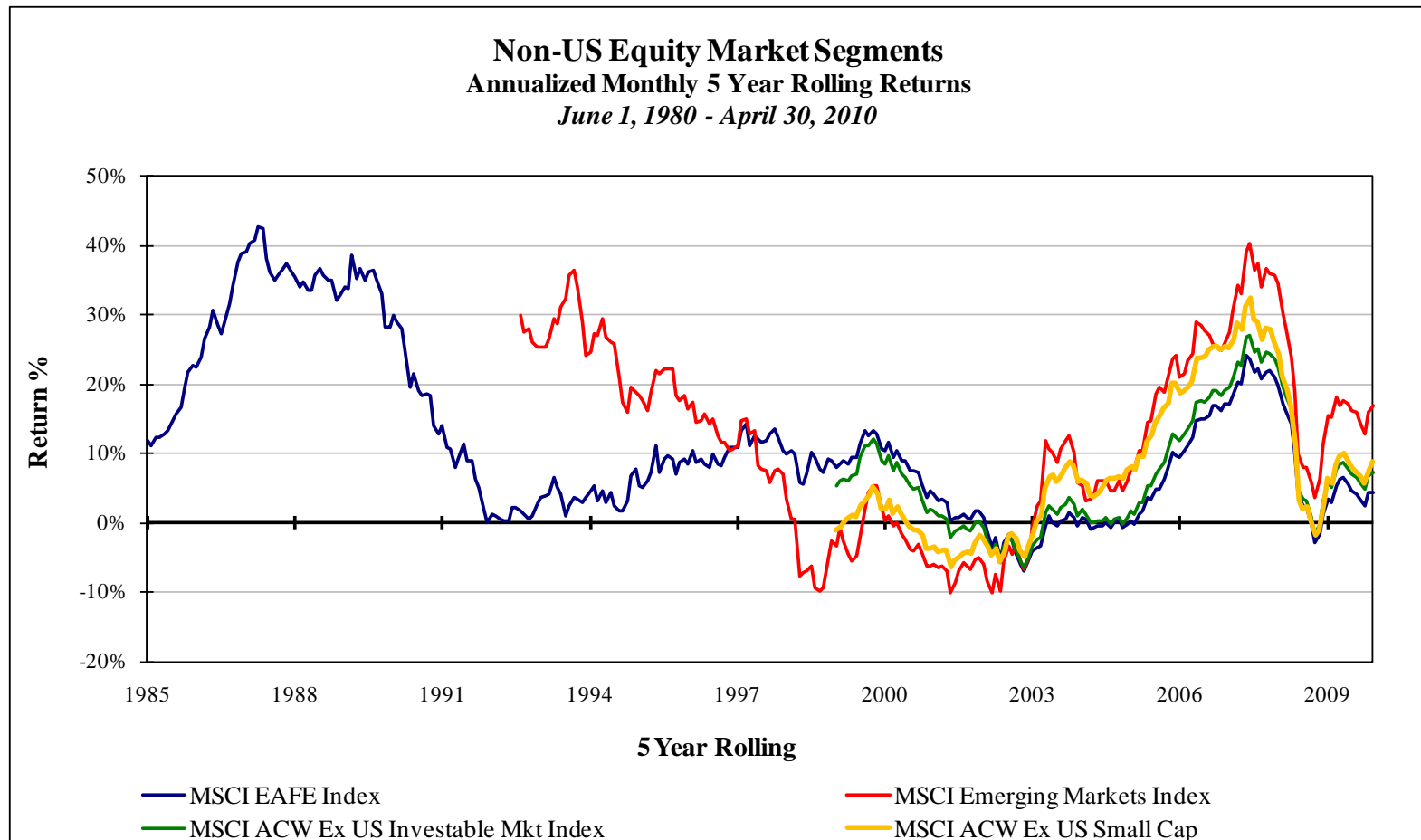
MSCI ACW ex US IMI Region/Country Allocation



Looking Forward: Equity

International Equity: Return

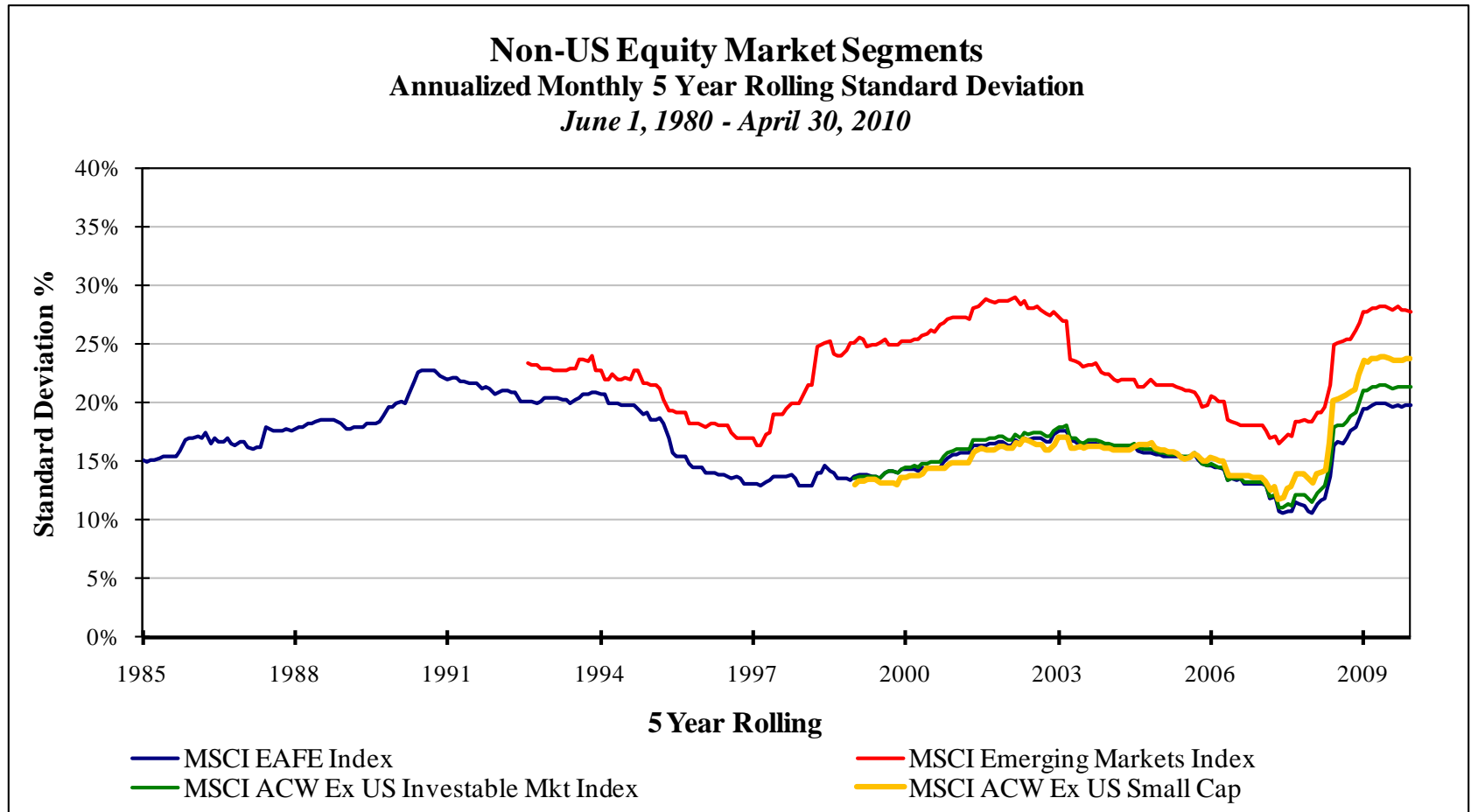
- ▶ Both emerging markets and international small cap exhibit greater volatility than developed large cap equities, but with an increased opportunity for larger returns



Looking Forward: Equity

International Equity: Risk

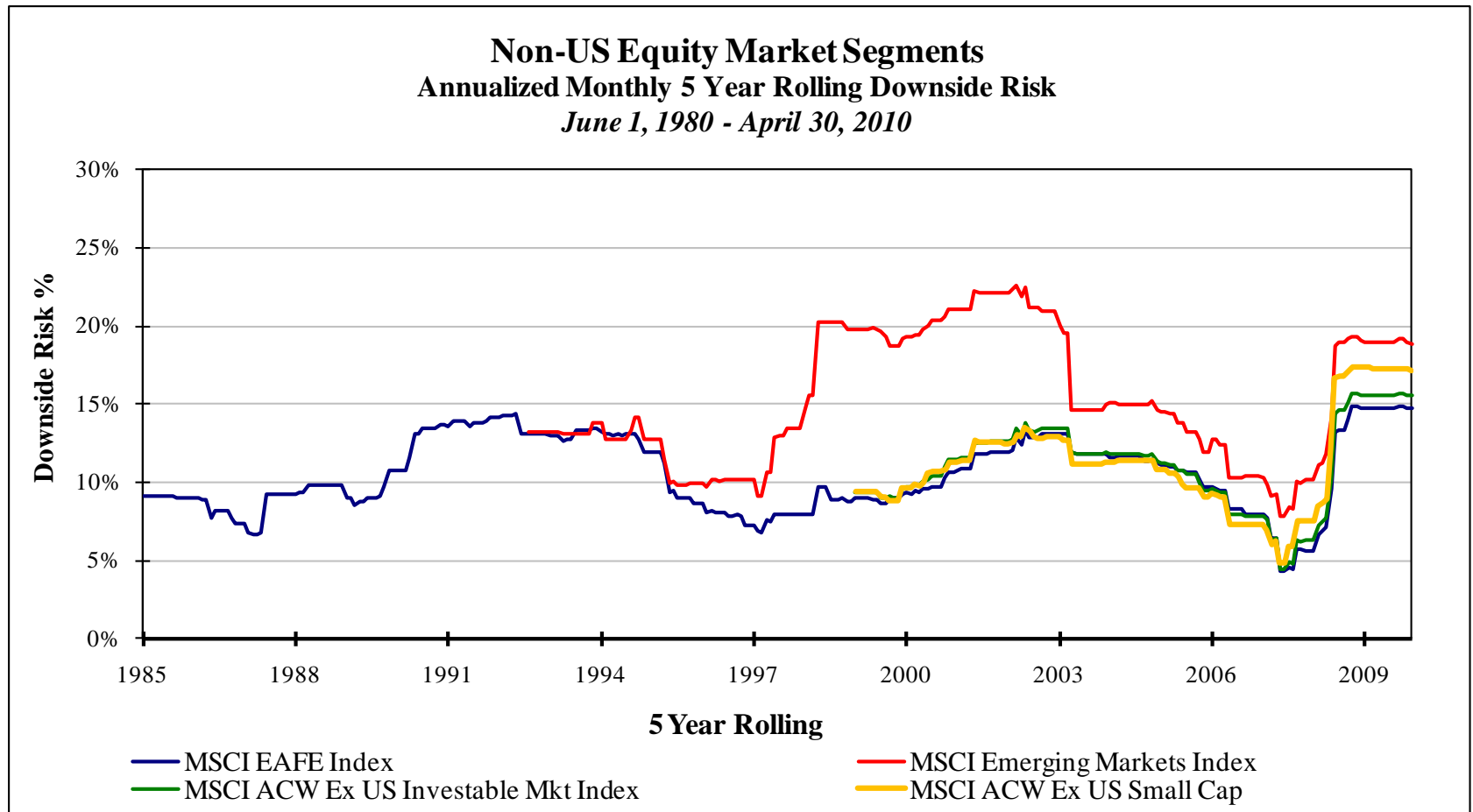
- ▶ Diversification and breadth of index reduces influence of volatile segments



Looking Forward: Equity

International Equity: Risk cont.

- ▶ Diversification and breadth of index reduces influence of volatile segments



Looking Forward: Equity

Return and Risk

Annualized Return as of 4/30/2010

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	-4.56	3.28	6.68	0.50	7.89	9.13	11.40
MSCI EAFE Index	-8.45	4.34	10.48	2.05	4.85	5.57	10.10
MSCI ACW ex US IMI	-5.22	7.21	13.17	3.92	5.59	N/A	N/A
MSCI Emerging Markets	4.30	16.92	22.59	11.35	8.23	10.81	N/A
BC Aggregate Index	6.32	5.38	4.84	6.43	6.55	7.25	8.83
BC TIPS Index	6.59	4.91	5.76	7.41	N/A	N/A	N/A
ML Global Govt Inflation Linked	4.22	4.22	6.67	7.49	N/A	N/A	N/A

Annualized Standard Deviation as of 4/30/2010

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	20.99	16.93	15.13	16.43	16.07	15.18	15.61
MSCI EAFE Index	24.18	19.81	17.77	17.77	16.65	17.26	17.44
MSCI ACW ex US IMI	26.19	21.39	19.06	18.79	17.36	N/A	N/A
MSCI Emerging Markets	33.15	27.84	25.05	24.85	24.88	24.10	N/A
BC Aggregate Index	4.18	3.67	3.96	3.82	3.75	3.83	5.33
BC TIPS Index	8.94	7.41	7.35	6.76	N/A	N/A	N/A
ML Global Govt Inflation Linked	11.77	9.76	9.45	8.56	N/A	N/A	N/A

Sharpe Ratio as of 4/30/2010

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	-0.20	0.11	0.35	-0.05	0.33	0.40	0.41
MSCI EAFE Index	-0.32	0.17	0.52	0.05	0.15	0.17	0.41
MSCI ACW ex US IMI	-0.14	0.30	0.62	0.15	0.20	N/A	N/A
MSCI Emerging Markets	0.24	0.61	0.85	0.45	0.30	N/A	N/A
BC Aggregate Index	1.05	0.68	0.60	0.93	0.77	0.85	0.57
BC TIPS Index	0.56	0.30	0.47	0.69	N/A	N/A	N/A
ML Global Govt Inflation Linked	0.26	0.18	0.48	0.57	N/A	N/A	N/A

Looking Forward: Equity

Diversification Benefits: Maintain Correlation

- ▶ Similar correlation benefits between MSCI EAFE and MSCI ACW ex US IMI

Correlation Matrix
1/1/1998 - 4/30/2010

	Russell 3000 Index	MSCI EAFE Index	MSCI ACW ex US IMI	MSCI Emerging Markets	BC Aggregate Index	BC TIPS Index	ML Global Govt Inflation Linked	FTSE NAREIT All REITS	DJ UBS Commodity Index	HFN Multi- Strategy
Russell 3000 Index	1.00									
MSCI EAFE Index	0.87	1.00								
MSCI ACW ex US IMI	0.87	0.99	1.00							
MSCI Emerging Markets	0.80	0.83	0.89	1.00						
BC Aggregate Index	-0.04	0.02	0.01	-0.04	1.00					
BC TIPS Index	0.04	0.10	0.12	0.11	0.76	1.00				
ML Global Govt Inflation Linked	0.22	0.38	0.38	0.28	0.66	0.81	1.00			
FTSE NAREIT All REITS	0.59	0.55	0.55	0.49	0.15	0.22	0.37	1.00		
DJ UBS Commodity Index	0.29	0.40	0.45	0.45	0.10	0.32	0.42	0.24	1.00	
HFN Multi-Strategy	0.58	0.67	0.72	0.72	0.02	0.18	0.30	0.33	0.52	1.00



Looking Forward: Equity

Risks of MSCI ACW ex US IMI

- ▶ Risks:
 - ▶ Introducing small amounts of emerging markets and non-US small cap potentially increases:
 - ▶ Volatility
 - ▶ Small increase in volatility expected, offset through breadth of exposure
 - ▶ Currency risk
 - ▶ Developing country currency risk would be added
 - ▶ Some currencies will be beneficial from a return perspective
 - ▶ Currency risk may also be a diversification benefit
 - ▶ Geo-political risk
 - ▶ Inclusion of more constituent countries increases likelihood of negative event
 - ▶ Least stable countries politically have small market weights
 - ▶ Fees
 - ▶ Small potential increase in fees
 - ▶ Expected to be insignificant



Looking Forward: Equity

Benefits of MSCI ACW ex US IMI

- ▶ Benefits:
 - ▶ Maintains total portfolio diversification benefits
 - ▶ Already accounted for in asset allocation
 - ▶ Increases diversification within international portfolio
 - ▶ Improves the opportunity set
 - ▶ Covers international broad market
 - ▶ Developed and developing countries
 - ▶ Large cap, mid cap, small cap securities
- ▶ Expected enhancement to returns from current EAFE exposure



TMRS Tomorrow: Inflation Oriented Strategies (Real Return)



Looking Forward: Real Return

Overview

- ▶ Real return investments are oriented to protect against inflation
 - ▶ Often more goal-oriented than benchmark-specific:
 - ▶ C.P.I. + 3-4%
 - ▶ Blended benchmarks
 - ▶ Barclays Capital U.S. TIPS Index
 - ▶ Commodities
- ▶ Potential components of real return include:
 - ▶ **Inflation linked bonds (U.S. and global)**
 - ▶ Commodities (futures contracts)
 - ▶ Currencies (or global bond exposures)
 - ▶ **Real estate (often a separate target allocation)**
 - ▶ Timber (can be included in real estate)
 - ▶ Infrastructure (can be included in real estate)
 - ▶ Global natural resource stocks (precious metals, energy)

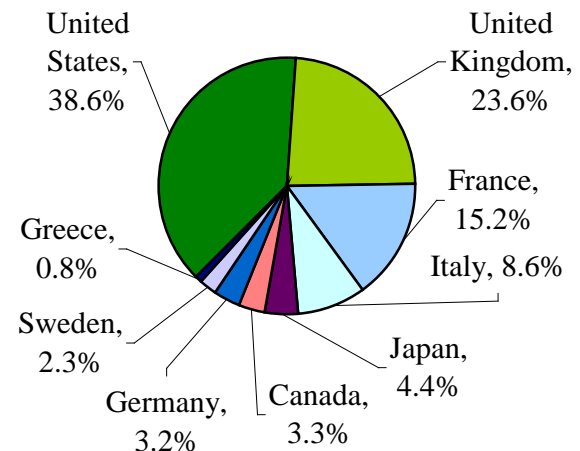
Looking Forward: Real Return

Inflation-Linked bonds

- ▶ Treasury Inflation-Protected Securities (TIPS) or Global “Linkers”
 - ▶ Offered by sovereign issuers such as U.S., Canada, UK, Germany, etc
 - ▶ Approximately \$529 billion of U.S. TIPS outstanding
 - ▶ About \$1.4 trillion worldwide inflation-linked bond market

Global Inflation-Linked Bond Market

Country	Total ILBs (\$billions)	% of Total ILBs
United States	\$529	38.6%
United Kingdom	\$324	23.6%
France	\$209	15.2%
Italy	\$118	8.6%
Japan	\$60	4.4%
Canada	\$45	3.3%
Germany	\$44	3.2%
Sweden	\$32	2.3%
Greece	\$11	0.8%





Looking Forward: Real Return

Inflation-Linked bonds

- ▶ TIPS and Global Linkers are inflation-adjusting:
 - ▶ A coupon is paid semi-annually on an inflation-adjusted principal
 - ▶ Coupon rate is fixed
 - ▶ Payment amount (\$) is variable due to the inflation-adjusted principal
 - ▶ The principal is adjusted for inflation and paid at maturity
 - ▶ Linked to CPI in the U.S. (RPI in the UK, and EU HICP for Germany, etc)
 - ▶ Many sovereign issuers offer a deflation-floor on the principal
 - ▶ E.g., TIPS holders guaranteed nominal principal value at maturity

Looking Forward: Real Return

Inflation-Linked Bonds: Performance Cycles

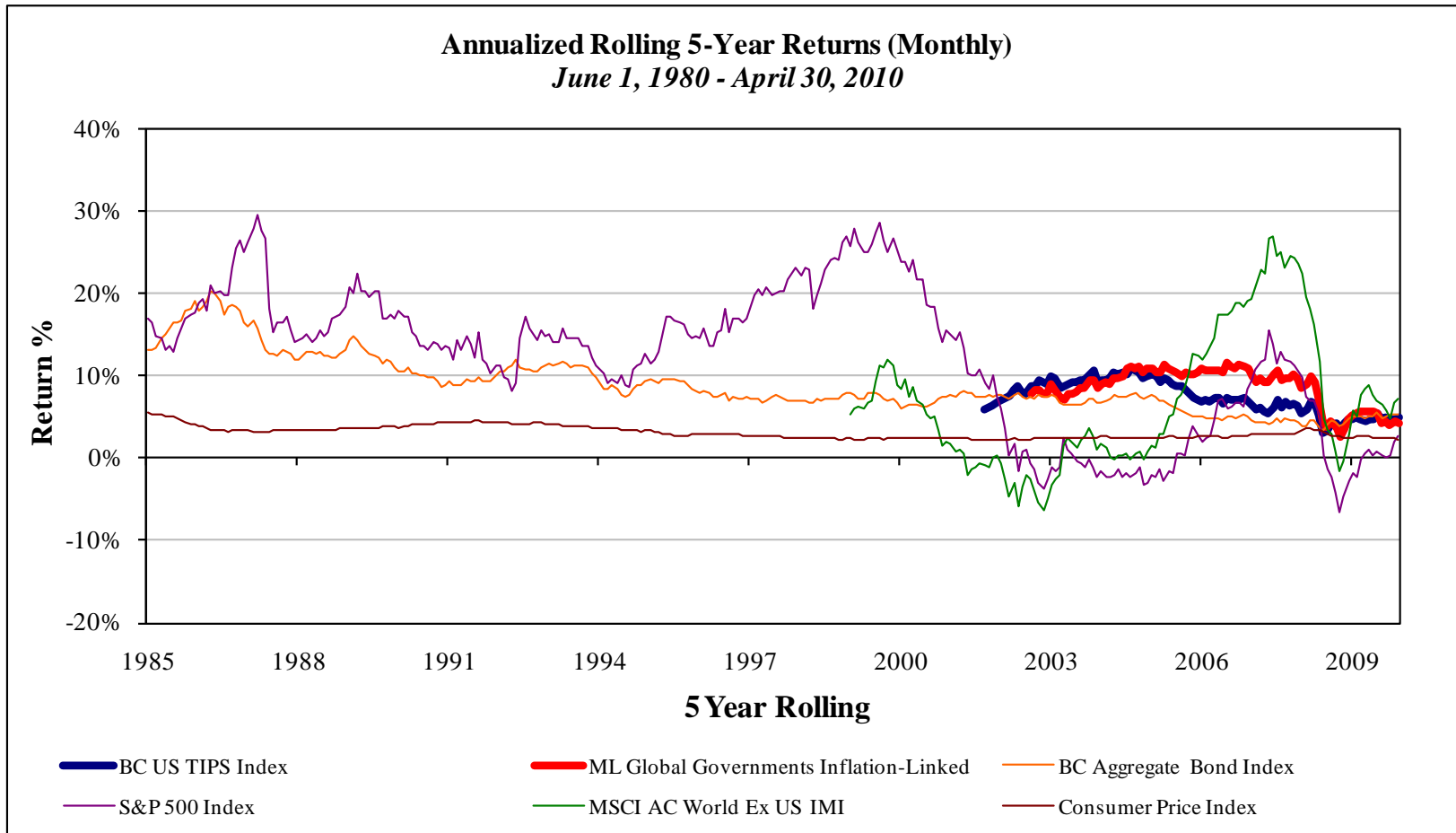
- ▶ Inflation-linked bonds have performance cycles based on economic and market environment
- ▶ The majority of market environments are expected to be favorable to neutral for inflation-linked bonds

Inflation ↑ High ↓ Low	Best Inflation-Linked Bonds Environment	Good / Neutral Inflation-Linked Bonds Environment
	<ul style="list-style-type: none"> ▶ Falling real rates <u>increase bond prices</u> (capital gains) ▶ High inflation <u>increases income and principal</u> <ul style="list-style-type: none"> ▶ Risk-averse market ▶ Expectations of high inflation ▶ Steady nominal rates ▶ Weak outlook for equities 	<ul style="list-style-type: none"> ▶ Rising real rates cause <u>bond price declines</u> (capital losses) ▶ High inflation <u>increases income and principal</u> (offsets price declines) <ul style="list-style-type: none"> ▶ Risk-seeking market ▶ Rising Nominal rates ▶ Tightening Fed policy
	Good / Neutral Inflation-Linked Bonds Environment	Worst Inflation-Linked Bonds Environment
	<ul style="list-style-type: none"> ▶ Falling real rates <u>increase bond prices</u> (capital gains) ▶ Low inflation accruals <u>reduce expected income</u> (offsets increased bond prices) <ul style="list-style-type: none"> ▶ Risk-neutral market ▶ Nominal rates steady or falling ▶ Expectations of lower inflation 	<ul style="list-style-type: none"> ▶ Rising real rates cause <u>bond price declines</u> (capital losses) ▶ Low inflation accruals <u>reduce expected income</u> <ul style="list-style-type: none"> ▶ Risk-seeking market ▶ Rising Nominal rates ▶ Tightening Fed policy
	← Falling	Rising →
	Real Interest Rates	

Looking Forward: Real Return

Inflation-Linked Bonds: Return

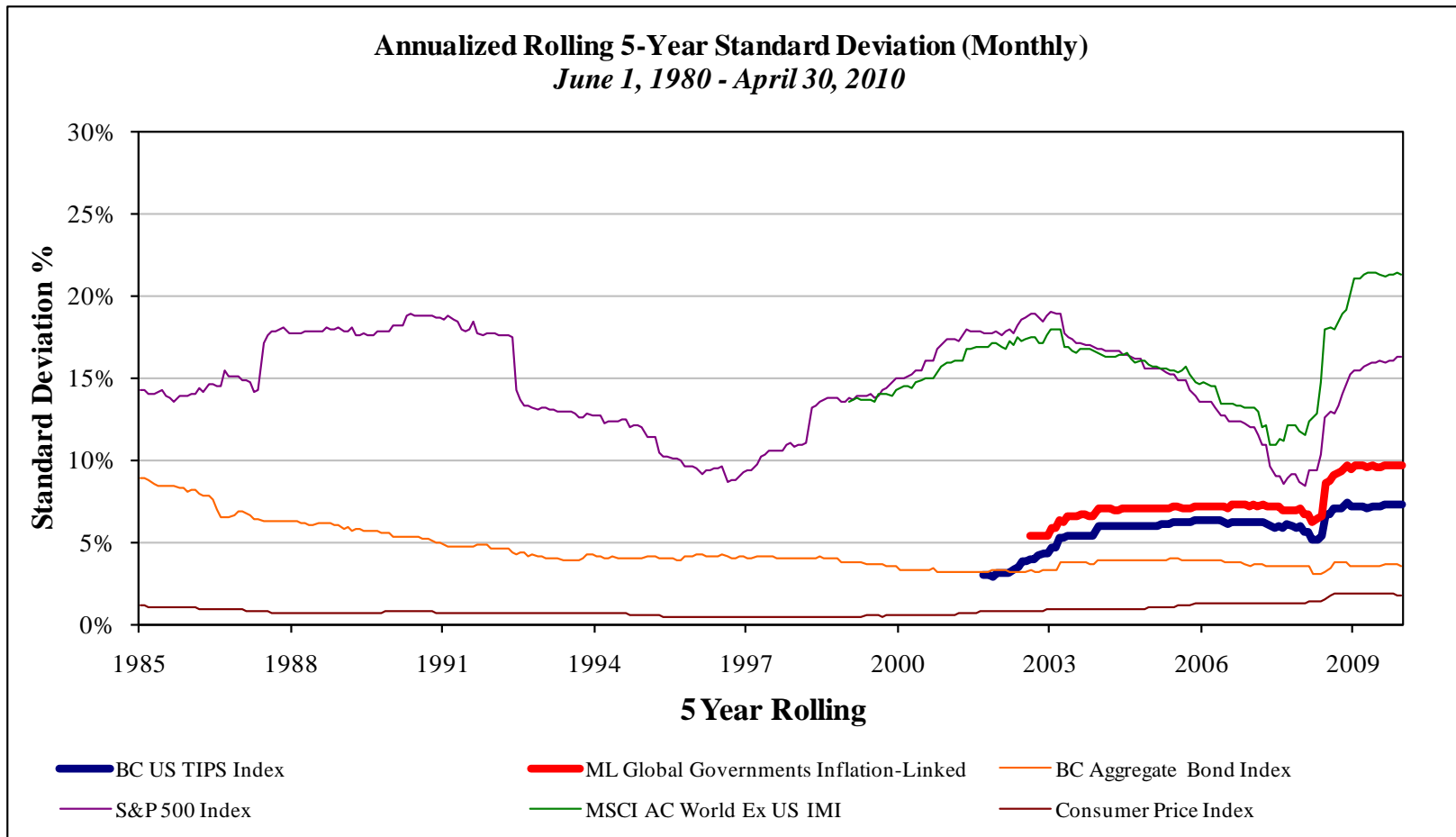
- ▶ Inflation-linked bonds provide competitive returns and diversification, as well as help to protect against inflation



Looking Forward: Real Return

Inflation-Linked Bonds: Risk

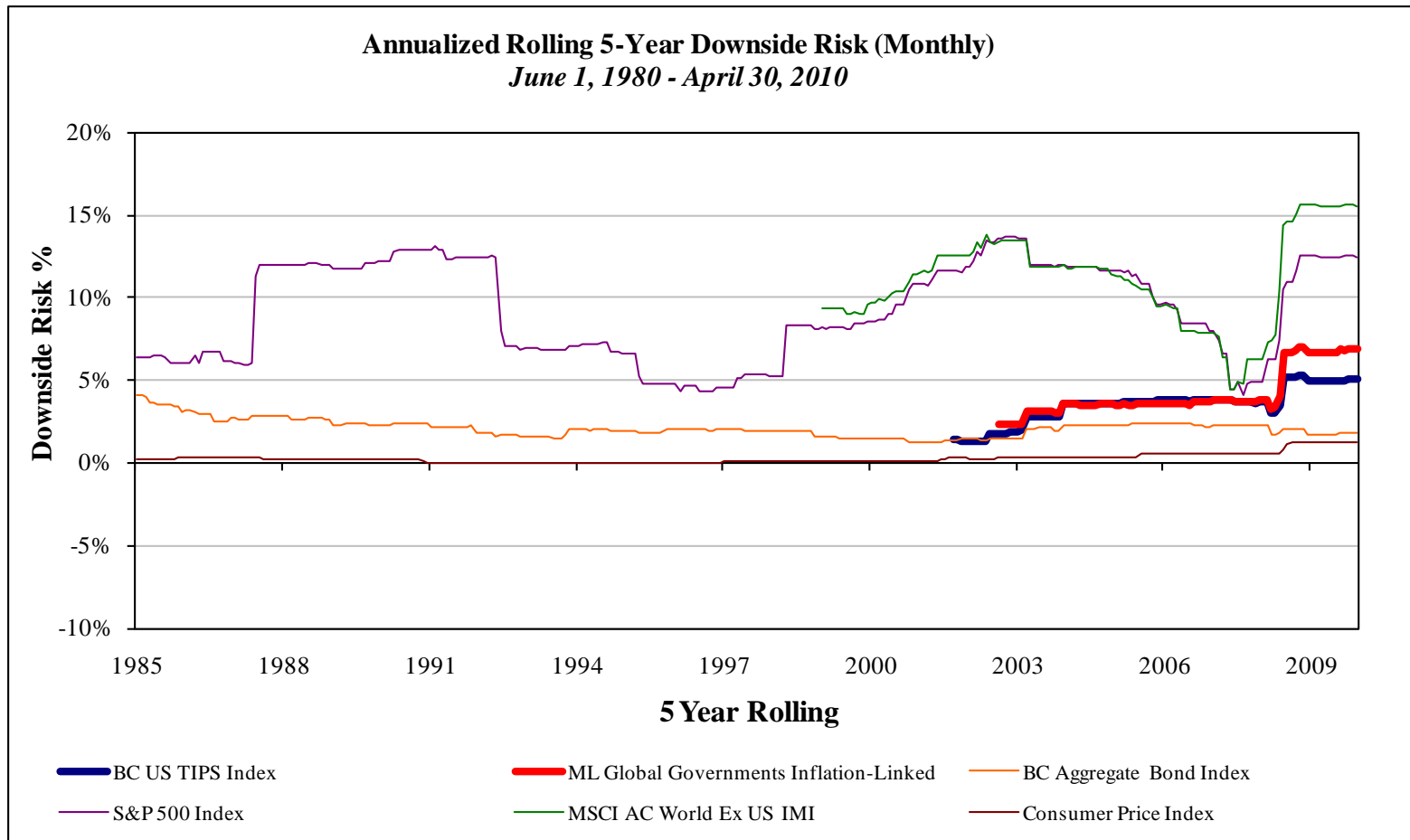
- ▶ Slightly higher volatility than core fixed income
- ▶ Significantly lower volatility than equities



Looking Forward: Real Return

Inflation-Linked Bonds: Risk cont.

- ▶ Slightly higher downside risk than core fixed income
- ▶ Significantly lower downside risk than equities



Looking Forward: Real Return

Return and Risk

Annualized Return as of 3/31/2010

	3 Years	5 Years	7 Years	10 Years	Since ML Inception	15 Years	20 Years	30 Years
Russell 3000 Index	-3.99	2.39	7.56	-0.07	3.69	7.92	8.86	11.51
MSCI EAFE Index	-6.55	4.24	12.26	1.68	4.96	5.23	5.62	10.50
MSCI ACW ex US IMI	-3.63	6.77	14.73	3.24	6.39	5.86	N/A	N/A
MSCI Emerging Markets	5.46	16.00	23.88	10.11	10.33	8.46	11.12	N/A
BC Aggregate Index	6.14	5.44	4.81	6.29	5.94	6.57	7.15	9.18
BC TIPS Index	6.01	4.82	5.37	7.30	6.83	N/A	N/A	N/A
ML Global Govt Inflation Linked	4.53	4.40	6.66	7.38	7.27	N/A	N/A	N/A
Active Manager Median	6.21	5.28	7.35	N/A	N/A	N/A	N/A	N/A

Annualized Standard Deviation as of 3/31/2010

	3 Years	5 Years	7 Years	10 Years	Since ML Inception	15 Years	20 Years	30 Years
Russell 3000 Index	21.09	16.95	15.39	16.46	16.83	16.12	15.23	15.64
MSCI EAFE Index	24.34	19.83	18.06	17.84	17.61	16.70	17.29	17.52
MSCI ACW ex US IMI	26.33	21.43	19.31	18.93	18.54	17.42	N/A	N/A
MSCI Emerging Markets	33.22	27.90	25.18	25.08	26.40	24.97	24.19	N/A
BC Aggregate Index	4.16	3.69	3.95	3.83	3.68	3.76	3.85	5.68
BC TIPS Index	8.88	7.39	7.32	6.74	6.19	N/A	N/A	N/A
ML Global Govt Inflation Linked	11.79	9.78	9.45	8.57	7.94	N/A	N/A	N/A
Active Manager Median	8.62	7.12	6.63	N/A	N/A	N/A	N/A	N/A

Sharpe Ratio as of 3/31/2010

	3 Years	5 Years	7 Years	10 Years	Since ML Inception	15 Years	20 Years	30 Years
Russell 3000 Index	-0.18	0.06	0.39	-0.09	0.12	0.33	0.38	0.41
MSCI EAFE Index	-0.24	0.17	0.60	0.03	0.16	0.17	0.18	0.33
MSCI ACW ex US IMI	-0.08	0.28	0.69	0.12	0.24	0.21	N/A	N/A
MSCI Emerging Markets	0.27	0.58	0.89	0.40	0.42	0.31	N/A	N/A
BC Aggregate Index	0.98	0.68	0.59	0.88	0.72	0.76	0.83	0.54
BC TIPS Index	0.48	0.29	0.42	0.67	0.61	N/A	N/A	N/A
ML Global Govt Inflation Linked	0.27	0.20	0.47	0.55	0.54	N/A	N/A	N/A
Active Manager Median	0.51	0.36	0.58	N/A	N/A	N/A	N/A	N/A

ML Global Govt Inflation Linked inception date is January 1, 1998.

7 Year Manager Median data includes only two products.

Looking Forward: Real Return

Diversification Benefits: Correlation

- ▶ Low historical correlations to equity asset classes

Correlation Matrix
1/1/1998 - 4/30/2010

	Russell 3000 Index	MSCI EAFE Index	MSCI ACW ex US IMI	MSCI Emerging Markets	BC Aggregate Index	BC TIPS Index	ML Global Govt Inflation Linked	FTSE NAREIT All REITS	DJ UBS Commodity Index	HFN Multi- Strategy
Russell 3000 Index	1.00									
MSCI EAFE Index	0.87	1.00								
MSCI ACW ex US IMI	0.87	0.99	1.00							
MSCI Emerging Markets	0.80	0.83	0.89	1.00						
BC Aggregate Index	-0.04	0.02	0.01	-0.04	1.00					
BC TIPS Index	0.04	0.10	0.12	0.11	0.76	1.00				
ML Global Govt Inflation Linked	0.22	0.38	0.38	0.28	0.66	0.81	1.00			
FTSE NAREIT All REITS	0.59	0.55	0.55	0.49	0.15	0.22	0.37	1.00		
DJ UBS Commodity Index	0.29	0.40	0.45	0.45	0.10	0.32	0.42	0.24	1.00	
HFN Multi-Strategy	0.58	0.67	0.72	0.72	0.02	0.18	0.30	0.33	0.52	1.00



Looking Forward: Real Return

Inflation-Linked Bonds: Risks

- ▶ Risks:
 - ▶ Inflation-linked bonds are relatively less liquid than similar bonds without an inflation adjustment feature
 - ▶ Highly liquid compared to non-sovereigns and alternatives
 - ▶ Selection is more limited from a duration and issuer perspective
 - ▶ U.S. TIPS mandate – constrained to one issuer (U.S. government)
 - ▶ Longer duration issues are most prevalent
 - ▶ Global Linkers mandate
 - ▶ Non-U.S. issuers introduce potential currency, political, and economic risk



Looking Forward: Real Return

Inflation-Linked Bonds: Benefits

- ▶ Benefits:
 - ▶ Diversification
 - ▶ Attractive correlations and risk adjusted returns
 - ▶ Important and missing piece of the allocation (inflation protection)
 - ▶ Inflation-orientation
 - ▶ Through explicit inflation link and foreign currency exposure
 - ▶ High quality
 - ▶ Backed by sovereign credit
 - ▶ Global linkers versus U.S. only mandate
 - ▶ Broader opportunity set and greater flexibility
 - ▶ Transparent, liquid, low-risk, and straightforward approach to inflation hedging
 - ▶ Mandate aligns with current staff resources



TMRS Tomorrow: Real Estate



Looking Forward: Real Estate

Institutional Real Estate: Fundamentals

- ▶ Real estate produces returns primarily in two ways
 - ▶ Income: Returns from rental income of the subject property
 - ▶ Appreciation: Returns from price appreciation of the subject property
- ▶ Two types of real estate investments
 - ▶ Equity interest: Direct real estate investments such as privately-held pooled investment funds and publicly traded real estate securities
 - ▶ Debt interest: Purchase of whole mortgages or portions of mortgages and other real estate debt



Looking Forward: Real Estate

Institutional Real Estate: Fundamentals

- ▶ Traditional commercial sectors
 - ▶ Office
 - ▶ Retail
 - ▶ Apartments/Residential
 - ▶ Industrial
 - ▶ Hotels/Hospitality

- ▶ Nontraditional commercial sectors
 - ▶ Senior housing
 - ▶ Health care
 - ▶ Infrastructure

- ▶ Mechanisms for private real estate investment
 - ▶ Open-Ended Funds
 - ▶ Closed-Ended Funds



Looking Forward: Real Estate

Institutional Real Estate: Risk Spectrum

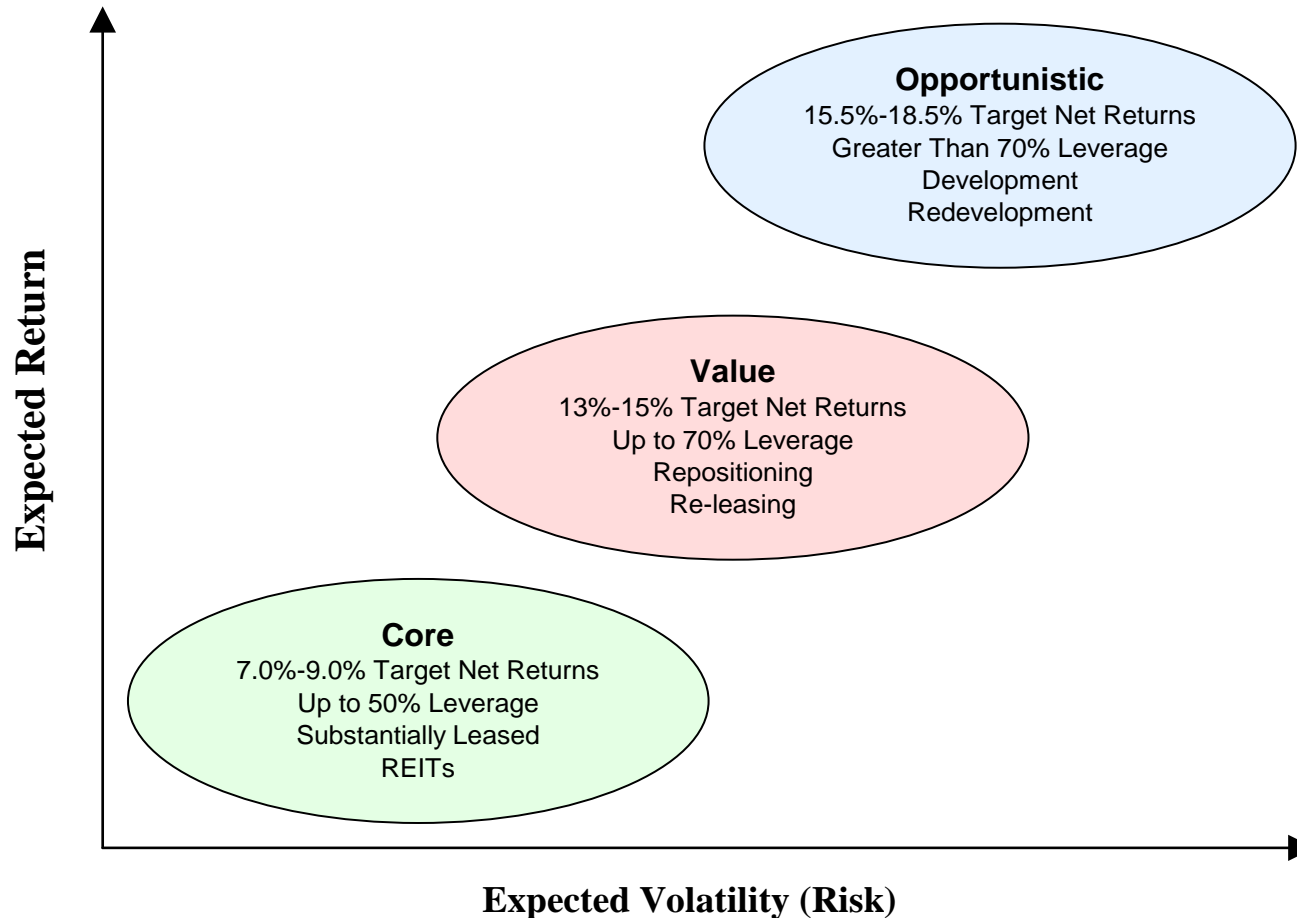
- ▶ Core
 - ▶ Long-term investments
 - ▶ Lower risk/return
 - ▶ High income yield and lower appreciation; inflation-hedging benefits
 - ▶ Includes most publicly-traded securities (e.g., REITs)

- ▶ Value-added
 - ▶ Moderately higher risk/return
 - ▶ Shorter-term investments (typically three-to-seven years)
 - ▶ Contains both income and appreciation components
 - ▶ Redevelopment, re-leasing, or expansion

- ▶ Opportunistic
 - ▶ Highest risk/return strategy
 - ▶ Appreciation represents majority of total return
 - ▶ Time horizon varies

Looking Forward: Real Estate

Institutional Real Estate: Risk Spectrum



Target Net Return Numbers Based upon Global Return Expectations

Domestic Target Net Return Numbers Are Approximately 1 Percentage Point Lower



Looking Forward: Real Estate

Institutional Real Estate: Investment Vehicles

- ▶ Private Real Estate Investments
 - ▶ Direct Investments
 - ▶ Direct ownership of single property
 - ▶ Significant risk due to volatility and concentration risks
 - ▶ Commingled Funds
 - ▶ Pooling of institutional capital to invest in a series of real estate opportunities
 - ▶ Diversified and broad, or diversified yet specialized
 - ▶ Joint Ventures/Separate Accounts
 - ▶ Hybrid of direct investment and commingled fund philosophies



Looking Forward: Real Estate

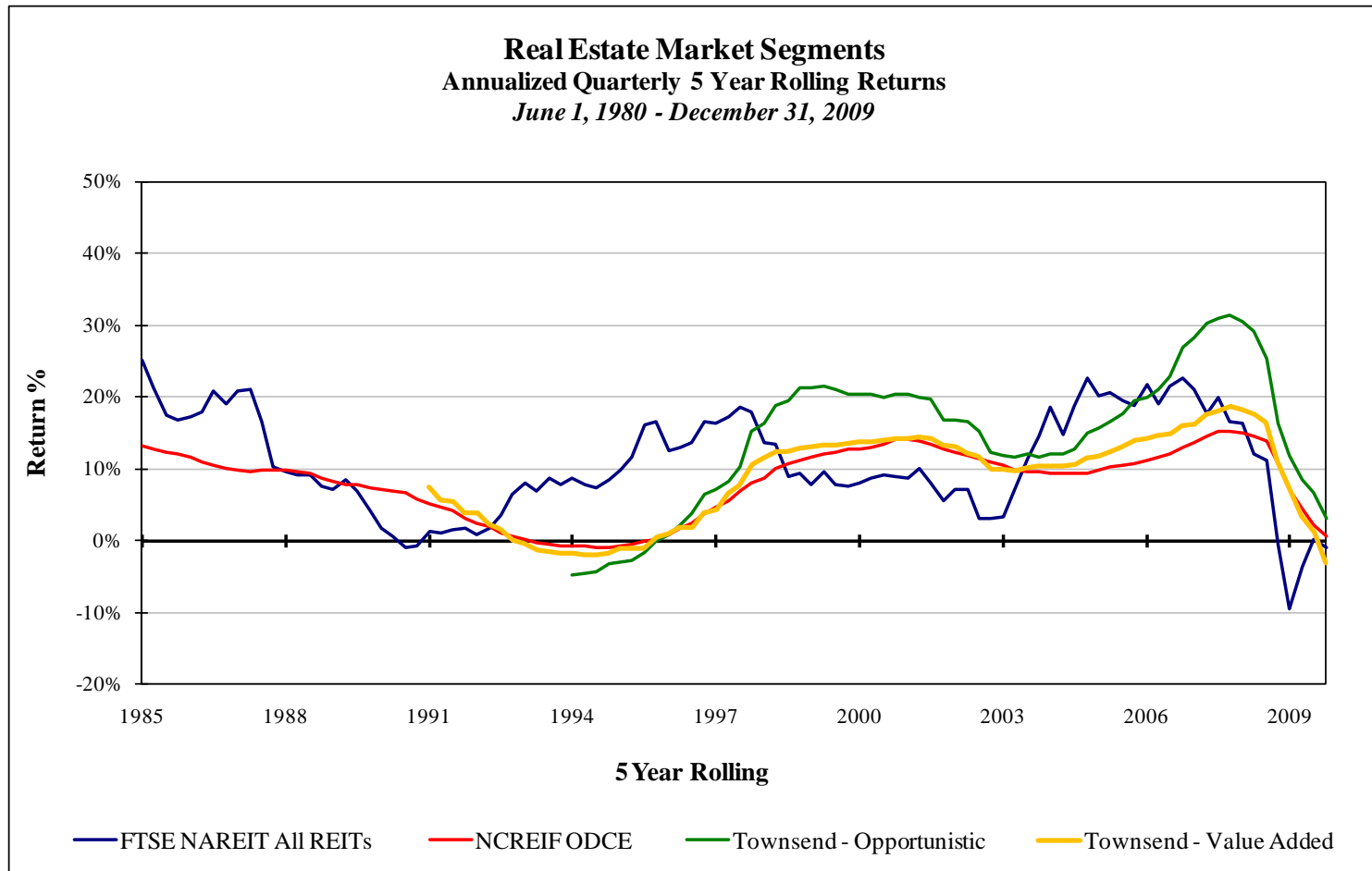
Institutional Real Estate: Investment Vehicles

- ▶ Public Real Estate Investments
 - ▶ Domestic Real Estate Investment Trusts
 - ▶ Public securitized funds which invest in all forms of real estate sectors
 - ▶ Most liquid option, trades on listed exchanges
 - ▶ Global Real Estate Securities
 - ▶ Favorable REIT legislation globally increases opportunities
 - ▶ Listed on foreign exchanges and denominated in local currencies
- ▶ Unlike privately-held real estate, REITs are significantly correlated with U.S. equities

Looking Forward: Real Estate

Institutional Real Estate: Return

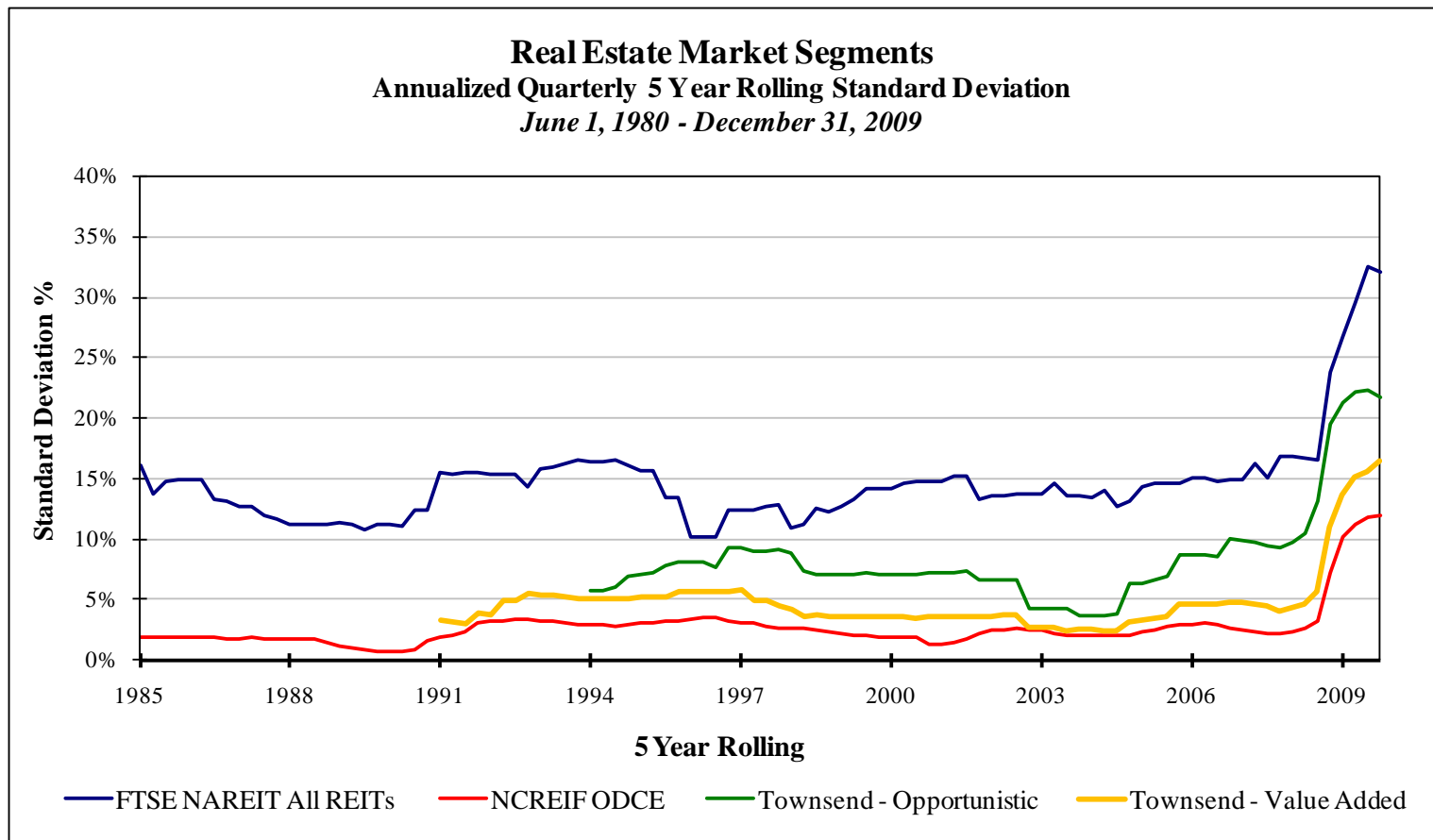
- ▶ Attractive long-term returns, as well as helps to protect against inflation



Looking Forward: Real Estate

Institutional Real Estate: Risk

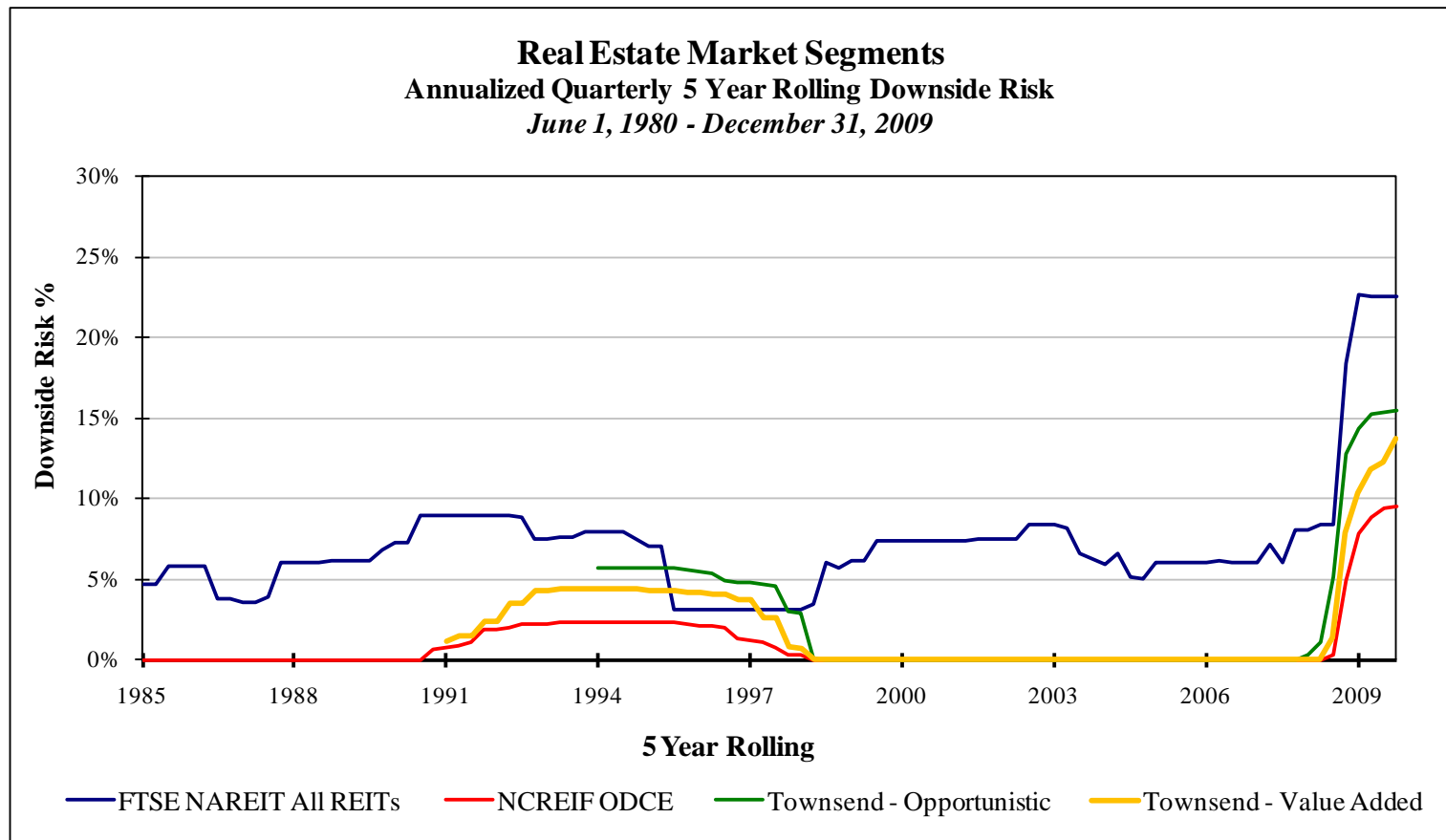
- ▶ Can be a volatile asset class on a stand alone basis, but can reduce total portfolio risk



Looking Forward: Real Estate

Institutional Real Estate: Risk cont.

- ▶ Can be a volatile asset class on a stand alone basis, but can reduce total portfolio risk



Looking Forward: Real Estate

Return and Risk

Annualized Return as of 12/31/2009

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	-5.42	0.76	6.20	-0.20	8.13	8.37	11.05
MSCI ACW ex US IMI	-2.99	6.49	13.25	3.07	5.71	N/A	N/A
BC Aggregate Index	6.04	4.97	4.75	6.33	6.80	7.01	8.79
ML Global Govt Inflation Linked	5.40	4.36	7.41	7.70	N/A	N/A	N/A
FTSE NAREIT All REITS	-13.10	-0.92	8.09	10.18	9.35	9.14	10.25
NCREIF ODCE	-9.81	0.71	3.59	5.01	7.50	5.35	7.06
Townsend - Opportunistic	-17.49	3.02	8.34	8.82	12.52	8.36	N/A
Townsend - Value Added	-17.59	-3.14	1.65	3.89	7.03	4.78	N/A

Annualized Standard Deviation as of 12/31/2009

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	22.81	18.15	17.32	18.52	18.25	16.95	17.26
MSCI ACW ex US IMI	30.42	24.47	23.20	22.61	20.74	N/A	N/A
BC Aggregate Index	3.67	3.55	3.52	3.62	3.85	4.11	6.94
ML Global Govt Inflation Linked	9.69	7.75	7.64	7.25	N/A	N/A	N/A
FTSE NAREIT All REITS	39.47	32.11	28.64	24.60	21.59	20.26	18.61
NCREIF ODCE	12.83	11.92	10.25	8.67	7.31	6.73	5.73
Townsend - Opportunistic	20.52	21.77	19.04	15.98	13.78	12.87	N/A
Townsend - Value Added	16.90	16.44	14.36	12.14	10.27	9.43	N/A

Sharpe Ratio as of 12/31/2009

	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	30 Years
Russell 3000 Index	-0.24	-0.03	0.29	-0.08	0.32	0.32	0.36
MSCI ACW ex US IMI	-0.04	0.25	0.55	0.11	0.19	N/A	N/A
BC Aggregate Index	0.98	0.55	0.64	0.91	0.77	0.69	0.41
ML Global Govt Inflation Linked	0.34	0.20	0.65	0.66	N/A	N/A	N/A
FTSE NAREIT All REITS	-0.22	0.04	0.34	0.41	0.36	0.34	0.31
NCREIF ODCE	-0.92	-0.13	0.15	0.27	0.53	0.21	0.20
Townsend - Opportunistic	-0.93	0.11	0.39	0.43	0.67	0.38	N/A
Townsend - Value Added	-1.18	-0.29	0.01	0.14	0.36	0.12	N/A

Looking Forward: Real Estate

Diversification Benefits: Low Correlation

- ▶ Low correlations to traditional asset classes

Correlation Matrix
1/1/1998 - 12/31/2009 (Quarterly Returns)

	Russell 3000 Index	MSCI ACW ex US IMI	BC Aggregate Index	ML Global Govt Inflation Linked	FTSE NAREIT All REITS	NCREIF ODCE	Townsend Fund Index - Opportunistic	Townsend Fund Index - Value Added	DJ UBS Commodity Index	HFN Multi-Strategy
Russell 3000 Index	1.00									
MSCI ACW ex US IMI	0.91	1.00								
BC Aggregate Index	-0.40	-0.34	1.00							
ML Global Govt Inflation Linked	0.18	0.36	0.42	1.00						
FTSE NAREIT All REITS	0.58	0.56	0.00	0.35	1.00					
NCREIF ODCE	0.16	0.11	-0.12	0.10	0.19	1.00				
Townsend Fund Index - Opportunistic	0.36	0.38	-0.15	0.28	0.35	0.84	1.00			
Townsend Fund Index - Value Added	0.20	0.18	-0.15	0.15	0.22	0.93	0.89	1.00		
DJ UBS Commodity Index	0.20	0.37	-0.14	0.45	0.33	0.24	0.35	0.25	1.00	
HFN Multi-Strategy	0.67	0.73	-0.26	0.29	0.42	0.29	0.51	0.37	0.51	1.00



Looking Forward: Real Estate

Institutional Real Estate: Risks

- ▶ Liquidity issues
 - ▶ Investment in direct properties or private equity commingled funds cannot be liquidated as quickly as equities or fixed income securities
- ▶ Valuation process
 - ▶ Three main approaches to valuing real estate: (i) cost approach, (ii) comparative sales approach, and (iii) income approach (discounted cash flow)
- ▶ Performance measurement issues
 - ▶ More difficult to measure private equity commingled real estate fund returns compared to returns of most REITs, equities, and fixed income investments
- ▶ Higher fees
 - ▶ Private real estate investments have higher fees than traditional asset classes



Looking Forward: Real Estate

Institutional Real Estate: Benefits

- ▶ Attractive long-term returns with low correlation to other traditional asset classes
 - ▶ Correlation benefits to traditional asset classes
 - ▶ Can enhance returns while reducing risk of entire portfolio
- ▶ Inflationary hedge
 - ▶ Rental growth and appraised values tied to inflation
 - ▶ May also include infrastructure and timber
- ▶ Increased transparency
 - ▶ Accessibility of opportunities and stronger corporate governance protections for investors are now available
- ▶ Liability matching
 - ▶ Longer-term nature of real estate acts as a long-term hedge against long-term liabilities



What's Next?

Summary



What's Next?

Summary

- ▶ Continue progress toward optimal diversification in an incremental manner by approving interim 2010 target implementation
 - ▶ Continued to diversify fixed income allocation
 - ▶ Jan 2010 completed funding core plus mandate (including exposure to high yield and non-U.S.) to final target (10%)
 - ▶ Continue to increase and diversify equity allocation
 - ▶ 2010 consider increasing current exposures at a slower pace
 - ▶ 2010 introduce non-U.S. small cap and emerging markets exposures
 - ▶ Introduce real return allocation
 - ▶ 2010 introduce TIPS or global linkers
 - ▶ Introduce real estate allocation
 - ▶ 2010 real estate manager searches



Questions?