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Managing a Pension Portfolio: Global Asset Allocation

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Agenda

1. The path toward regime-based asset allocation
2. Regime dynamics and asset class behavior
3. Constructing portfolios in response to changes in macroeconomic expectations

Source: Investment Strategy & Solutions Group

The march toward regime-based asset allocation

Old School
- Stocks
- Bonds
- Cash

Rise of Alternatives
- Stocks
- Bonds
- Alternatives

Transition to Macro
- Growth assets
- Inflation hedge
- Deflation hedge

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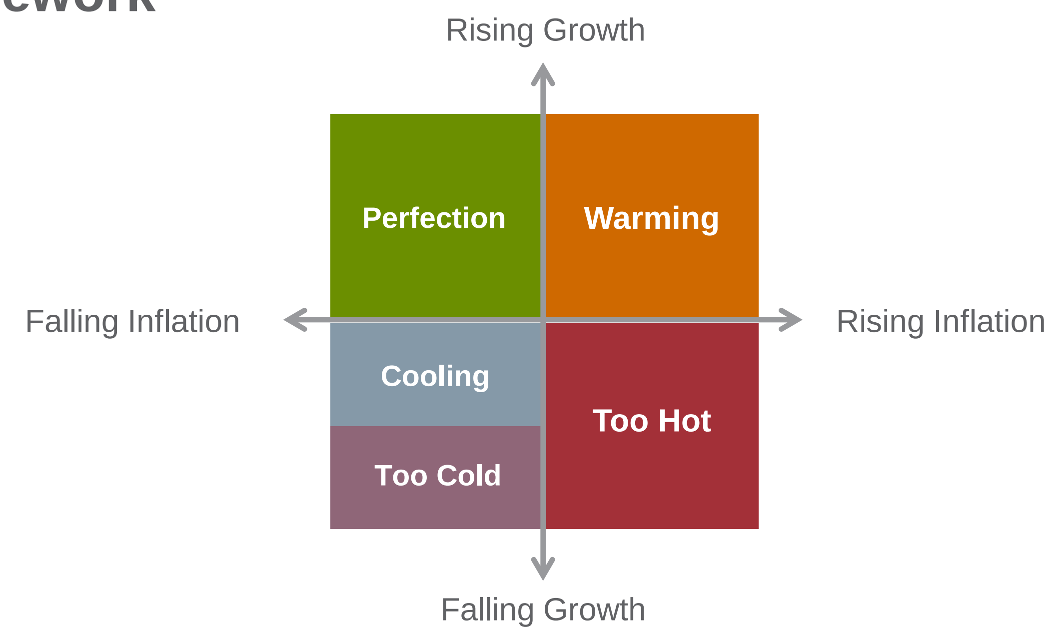
Source: Investment Strategy & Solutions Group

A further refinement

"Goldilocks economics" is too simplistic

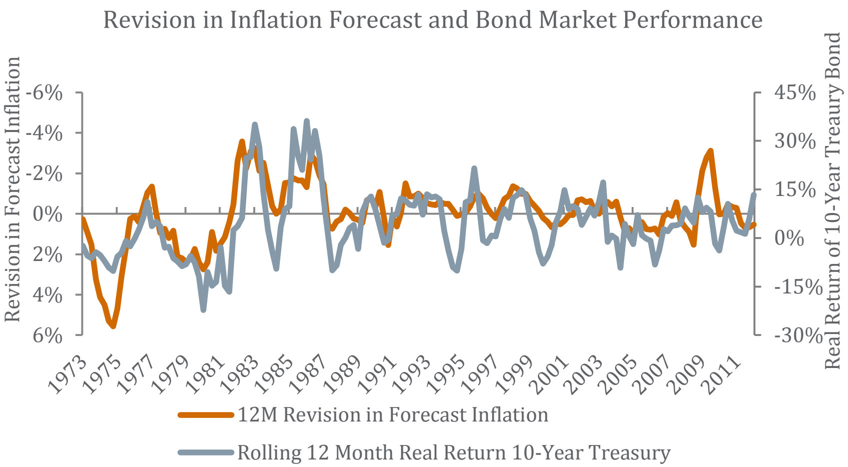
A richer framework

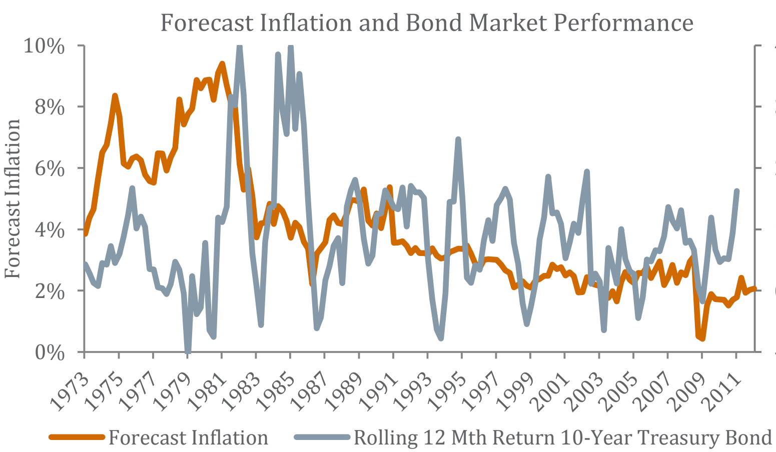


Source: Investment Strategy & Solutions Group

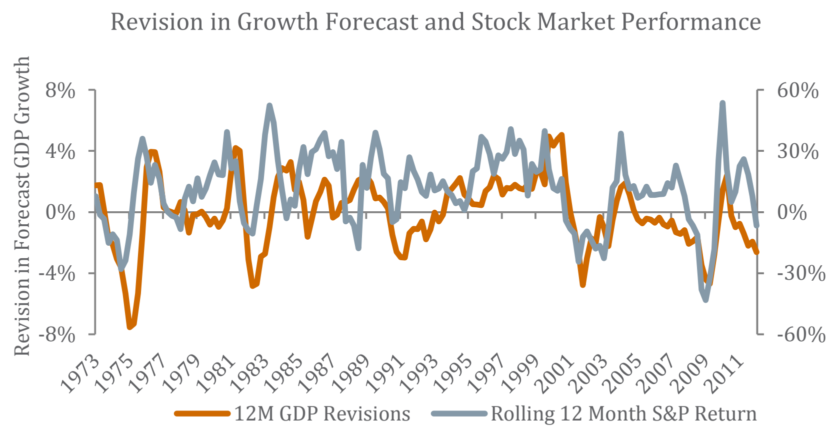
Revisions explain market behavior better than levels

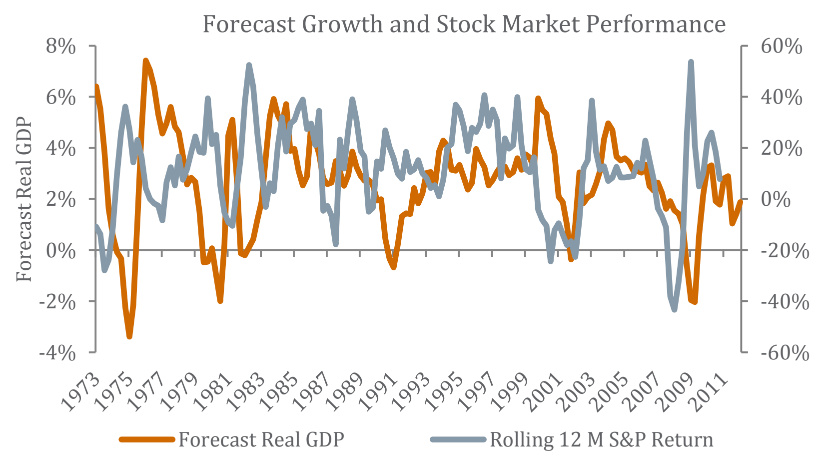
Inflation versus Bonds





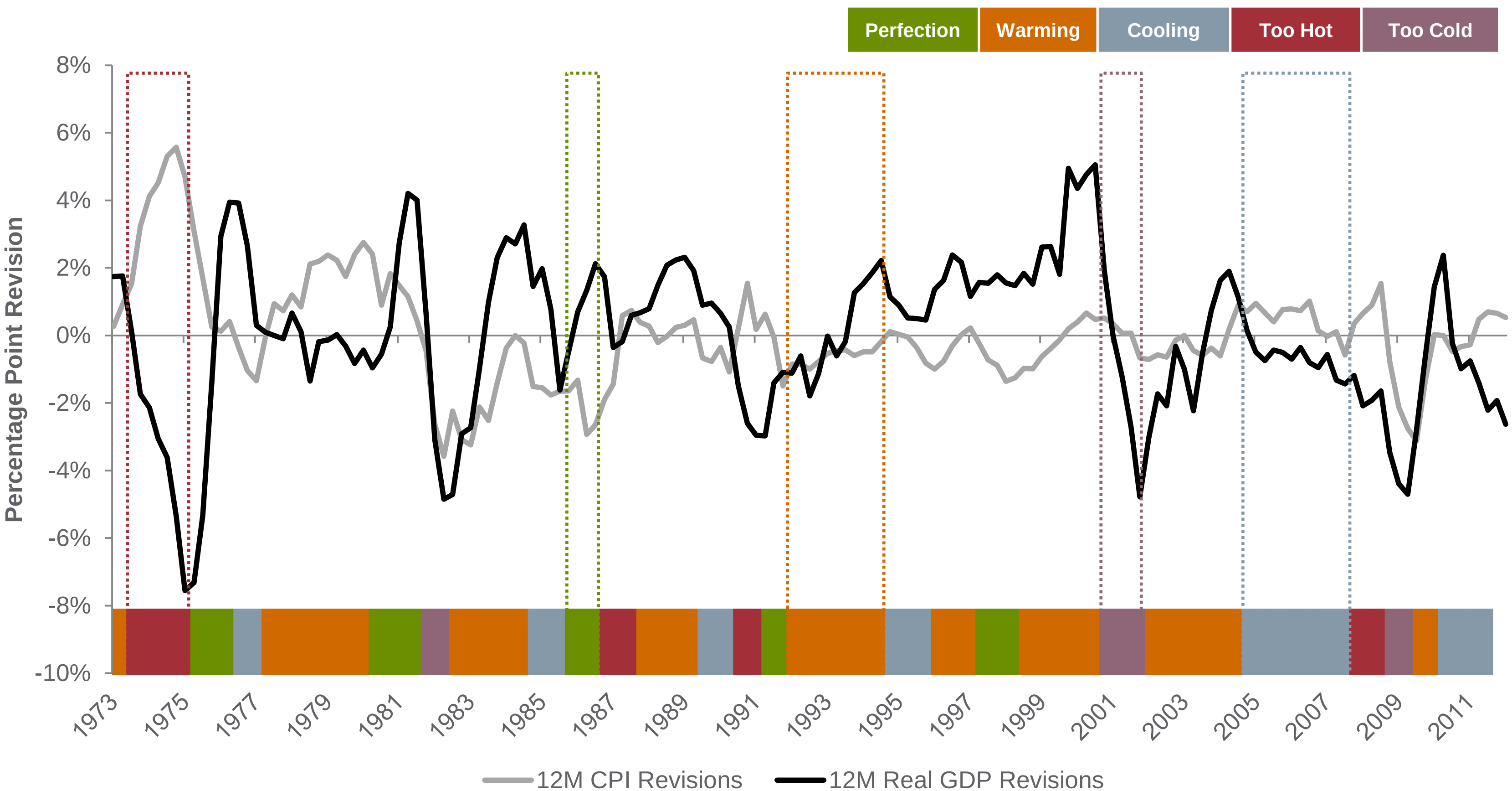
Growth versus Stocks





Source: Investment Strategy & Solutions Group. Ibbotson, Bloomberg , Philadelphia Federal Reserve as of 2/29/2012.

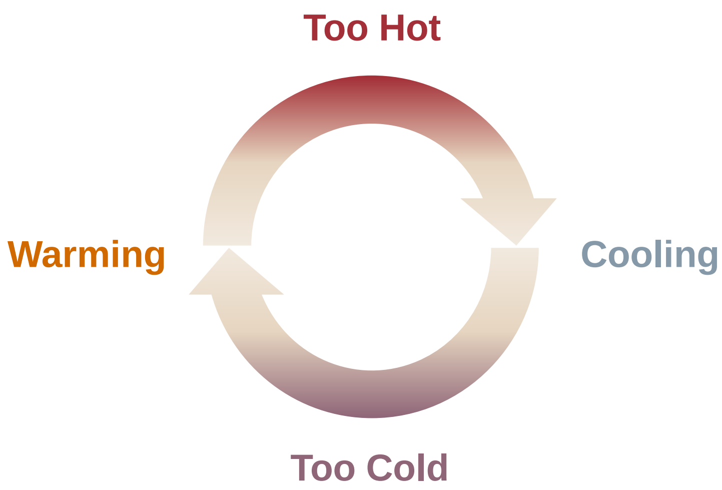
Revisions create regimes



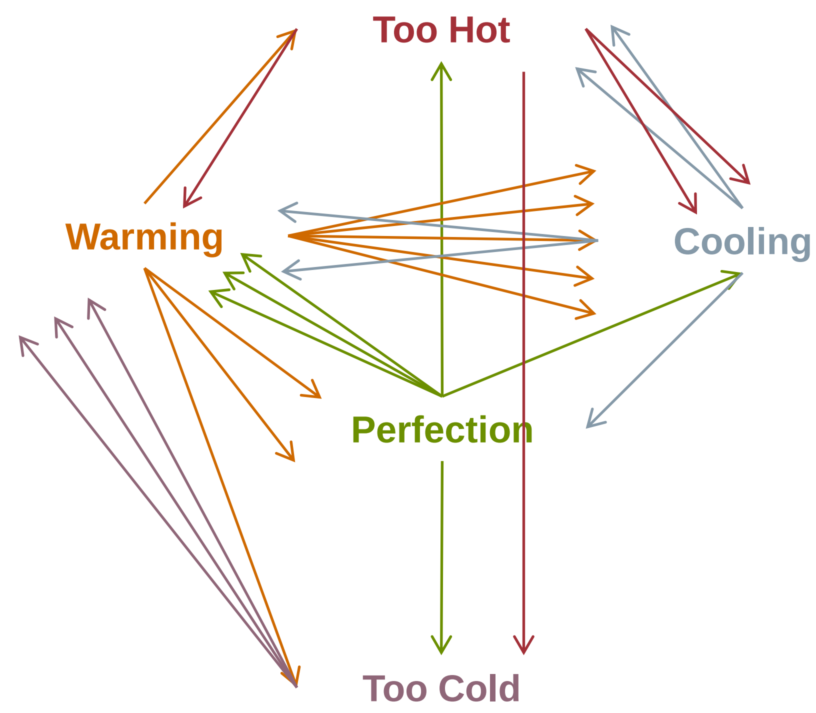
Source: Investment Strategy & Solutions Group. Source: Philadelphia Federal Reserve as of 2/29/2012.

Regimes do not occur sequentially

The conventional image

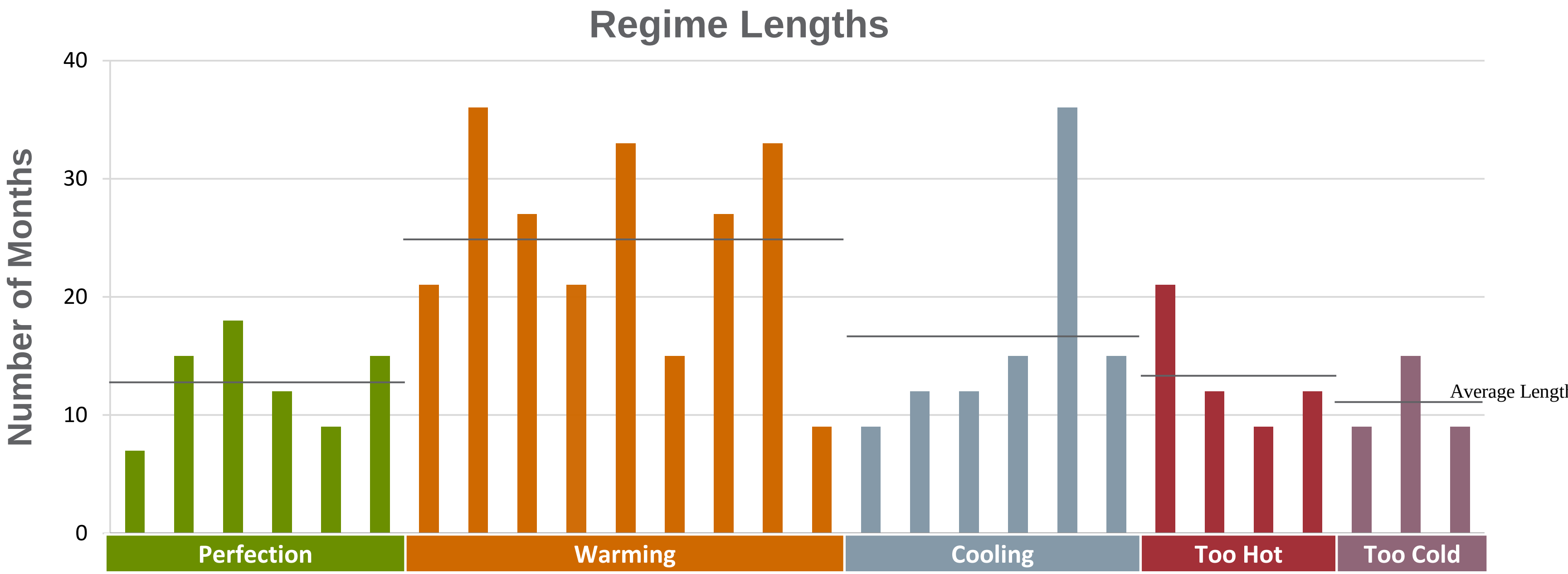


40 years of regime transitions



Source: Investment Strategy & Solutions Group

Regimes have varying lengths



Source: Investment Strategy & Solutions Group

U.S. stock market performance varied by regime

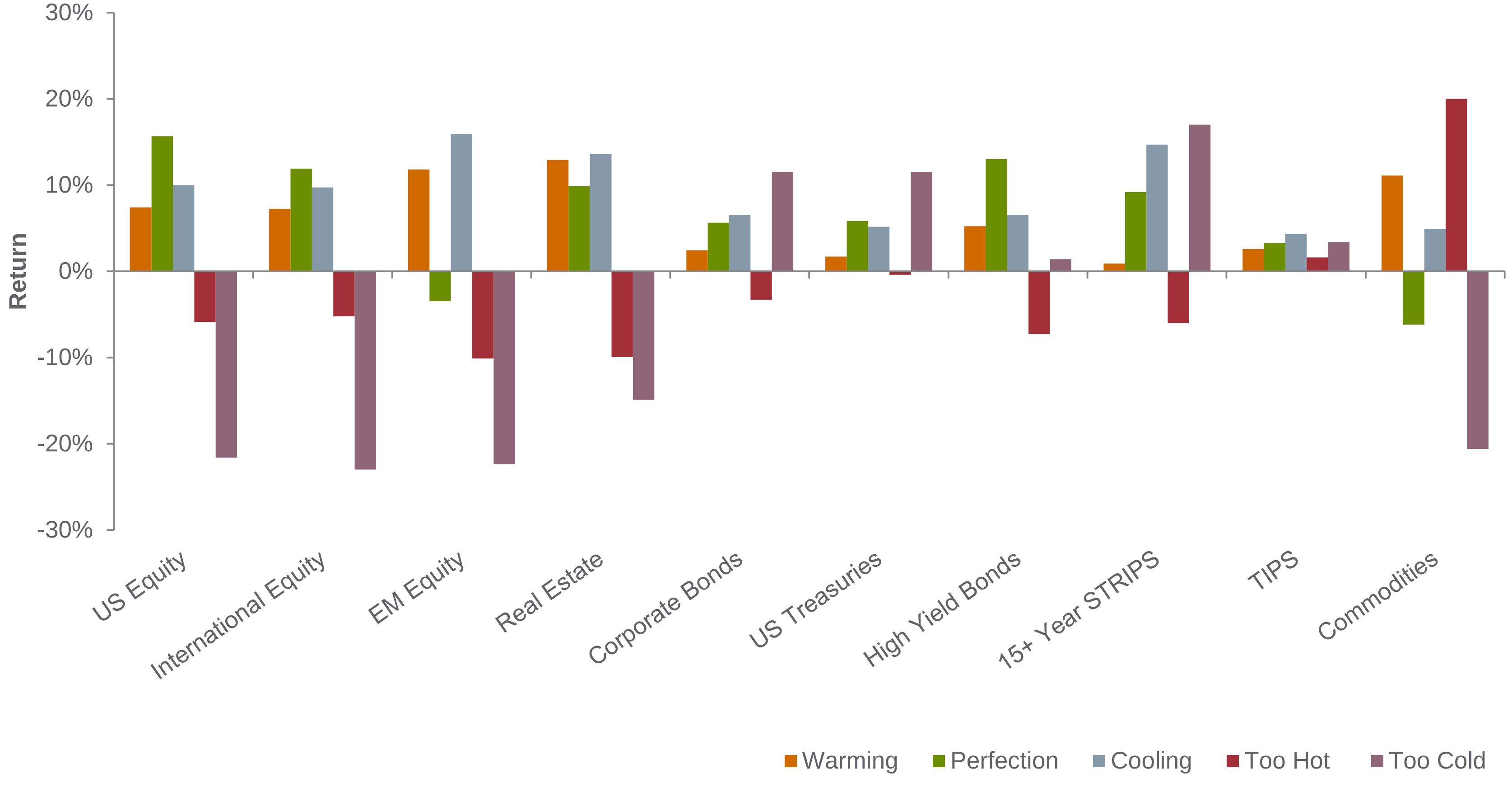
Regime	Inflation	Growth	Frequency	Real Return	Contribution to Return
Too Hot	Rising	Falling	11%	-5.9%	-0.6%
Too Cold	Falling	Negative	7%	-21.6%	-1.5%
Cooling	Falling	Falling	20%	10.0%	2.0%
Warming	Steady/Rising	Steady/Rising	46%	7.4%	3.4%
Perfection	Falling	Rising	16%	15.7%	2.5%
Total			**100%**	**5.8%**	**5.8%**

S&P 500 Real Returns 2/28/1973 through 2/29/2012

Source: Ibbotson, Bloomberg. As of 2/29/2012. Returns calculated using the regimes outlined on slide 16. Please see appendix for index descriptions. CPI = 4.4% over same time period

Asset performance is regime dependent

Asset Returns by Regime (real)



See appendix for index descriptions and time periods.

Regime awareness can increase performance

We believe:

1. Insight into regime probabilities should lead to better performance.

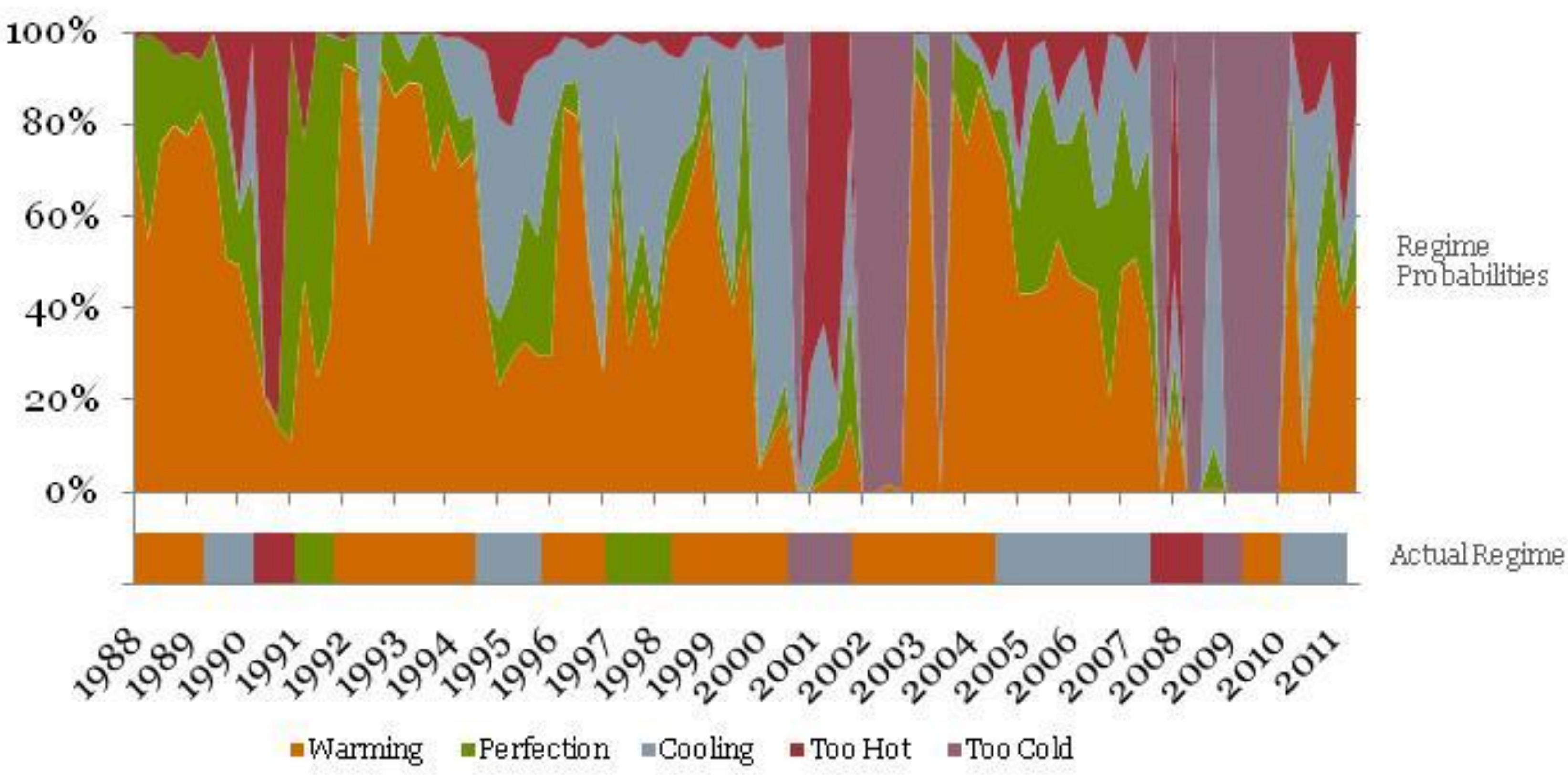
2. A regime based asset allocation framework requires a systematic approach to estimating regime probabilities.

3. The estimated probabilities can be used to dynamically adjust portfolio exposures.

Source: Investment Strategy & Solutions Group . For more information please see ISSG's paper entitled "Great Expectations".

Regime probabilities must be estimated

- Created a model* to describe the current state of the economy.
- Model uses levels and revisions in expectations of real economic growth and inflation.



Source: Investment Strategy & Solutions Group. * Multinomial logistic regression models are typically used to predict the probabilities of different possible outcomes of a predefined, dependent variable, given a set of independent variables.

Current regime probabilities are relatively benign

Regime	Inflation	Growth	Current Forecast Probability*	Historical Average	Difference
Too Hot	Rising	Falling	**28%**	11%	17%
Too Cold	Falling	Negative	**0%**	7%	-7%
Cooling	Falling	Falling	**35%**	20%	15%
Warming	Steady/Rising	Steady/Rising	**20%**	46%	-26%
Perfection	Falling	Rising	**17%**	16%	1%

Source: Investment Strategy & Solutions Group. *This view is for the 3 months following February 10 2012.

Appendix

- *Sources*

Asset	Weight	Index Name	Start	End	Definition
US Equity*	30%	S&P 500	2/28/1973	2/29/2012	The S&P 500 is an index designed to track the performance of the largest 500 US companies.
International Equity*	20%	MSCI ACWI ex US	2/28/1973	2/29/2012	The MSCI ACWI ex US index tracks the performance of global equities excluding the United States. Based on a regression to the Russell 3000 and MSCI World before 1987.
EM Equity*	5%	MSCI EM	2/28/1973	2/29/2012	The MSCI EM index tracks the performance of Emerging Market Equities. Prior to 1987 the returns are combined with the IFC emerging market returns and the MSCI EAFE index.
Real Estate*	5%	FTSE NAREIT	2/28/1973	2/29/2012	The FTSE/NAREIT index is designed to track the performance US Real Estate Investment Trusts.
Corporate Bonds**	20%	Barcap US Corporate Agg	2/28/1973	2/29/2012	The Barcap US Corporate Aggregate Index is designed to track the performance of US Investment Grade Corporate securities.
US Treasuries**	10%	Barcap US Treasury Agg	2/28/1973	2/29/2012	The Barcap US Treasury Aggregate Index is designed to track the performance of US Treasury securities.
HY Bonds**	5%	Barcap US High Yield	2/28/1973	2/29/2012	The Barcap High Yield Index tracks the performance of high yield debt securities. Prior to 1983 returns are regressed against the returns of the Barcap Baa and Russell 2000.
15+ Year STRIPS**	0%	Citi 15+ STRIPS	2/28/1973	2/29/2012	The Citi 15+ STRIPS index tracks the performance of US Treasury 15+ year STRIPS. Results simulated prior to 1991.
TIPS***	0%	Barcap US TIPS	2/28/1973	2/29/2012	The Barcap US TIPS index is designed to track the performance of US Treasury Inflation Protected Securities. Returns are simulated prior to 1997.
Commodities***	5%	DJ-UBS Commodities	2/28/1973	2/29/2012	Index designed to provide diversified commodity exposure with weightings based on the commodity's liquidity and economic significance. Results simulated prior to 1991.

- The Survey of Professional Forecasters is the oldest quarterly survey of macroeconomic forecasts in the United States. The survey began in 1968 and was conducted by the American Statistical Association and the National Bureau of Economic Research. The Federal Reserve Bank of Philadelphia took over the survey in 1990. The forecasted annual CPI inflation and GDP growth are an aggregation of the forecasted values for each of the next four quarters.

- Benchmark portfolio as specified in "Weight" column in table above.

- RBAA portfolio is a dynamically adjusted portfolio based on the Benchmark portfolio. The allocation swings are shown on page 17.

- These benchmarks are broad-based indices which are used for comparative purposes only and have been selected as they are well known and are easily recognizable by investors. Comparisons to benchmarks have limitations because benchmarks have volatility and other material characteristics that may differ from the portfolio. For example, investments made for the portfolio may differ significantly in terms of security holdings, industry weightings and asset allocation from those of the benchmark. Accordingly, investment results and volatility of the portfolio may differ from those of the benchmark. Also, the indices noted in this presentation are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that the portfolio may incur. In addition, the performance of the indices reflects reinvestment of dividends and, where applicable, capital gain distributions. Therefore, investors should carefully consider these limitations and differences when evaluating the comparative benchmark data performance. The indices are trademarks and have been licensed for use by The Bank of New York Mellon Corporation (together with its affiliates and subsidiaries) and are used solely herein for comparative purposes. The foregoing index licensers are not affiliated with The Bank of New York Mellon Corporation, do not endorse, sponsor, sell or promote the investment strategies or products mentioned in this presentation and they make no representation regarding advisability of investing in the products and strategies described herein.

- * Equity, ** Nominal Fixed Income, *** Inflation Sensitive

Interplay of asset classes and portfolio roles

Traditional Asset Classes

	Growth	Inflation	Deflation
Equity	U.S. Equity Int'l Equity EM Equity	Energy Equity	Utilities Equity
Fixed Income	High Yield	TIPS	Treasuries Sovereign Debt High Quality Corp.
Alternatives	Private Equity Long-biased HF	Real Estate Commodities Real Assets	Specialty Hedge Funds Interest Rate Products

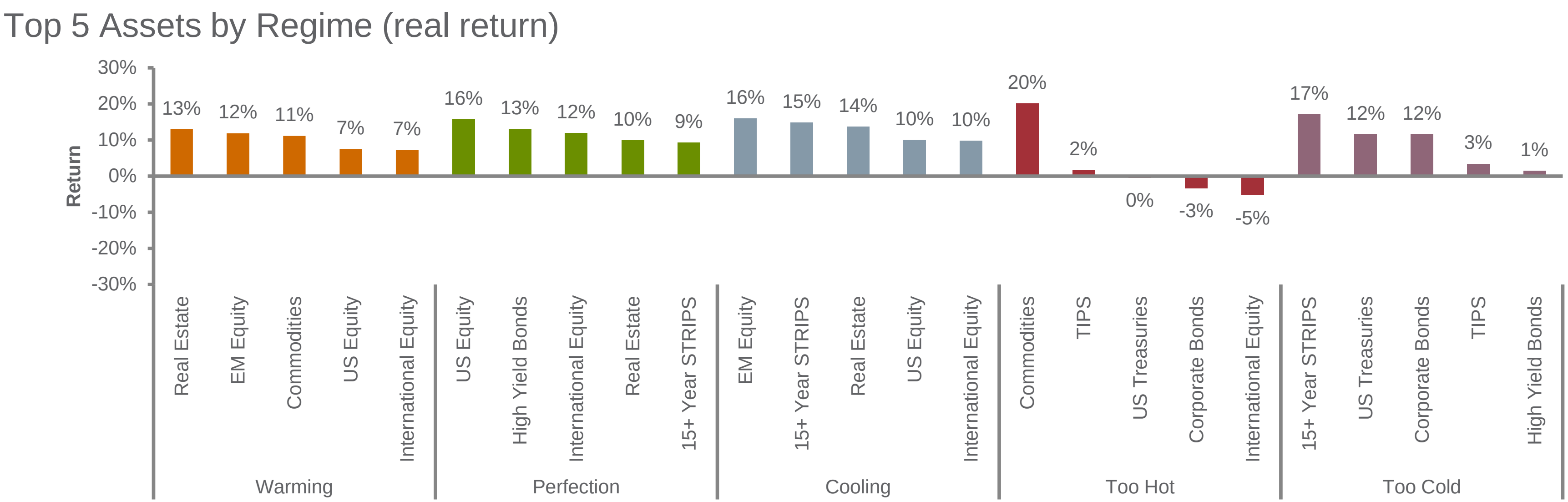
Source: Investment Strategy & Solutions Group

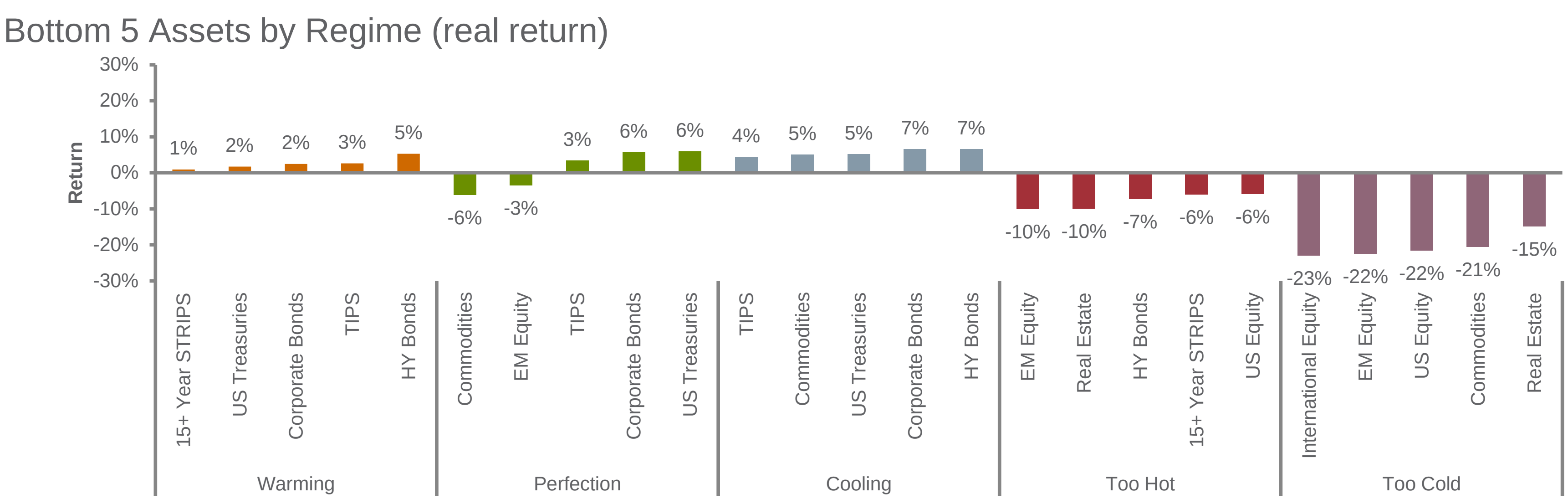
Assets we believe perform better by regime

	Growth			Inflation	Deflation
	Perfection	**Warming**	**Cooling**	**Too Hot**	**Too Cold**
Equity	Equities (especially consumer-related and tech), U.S., Int'l and EM	Nat. Resource Equity EM Equity Energy Stocks Industrial Stocks	EM Equity Energy Stocks Utilities Stocks	Nat. Resource Equity Energy Stocks	Utilities and Healthcare Equities
Fixed Income	High Yield Bonds Corporate Bonds	Inflation-Linked Bonds High Yield Bonds	Treasuries Global Bonds Corporate Bonds	Inflation-Linked Bonds Global Linkers	Treasuries Global Bonds Ultra High Quality Corp. Cash
Alternatives	Private Equity Long-biased Hedge Funds Real Estate	Real Estate Commodities Infrastructure Real Assets Private Equity Gold	Real Estate Private Equity	Commodities Oil Gold	Specialty Hedge Funds "Interest Rate Products"

Source: Investment Strategy & Solutions Group

Asset performance is regime dependent

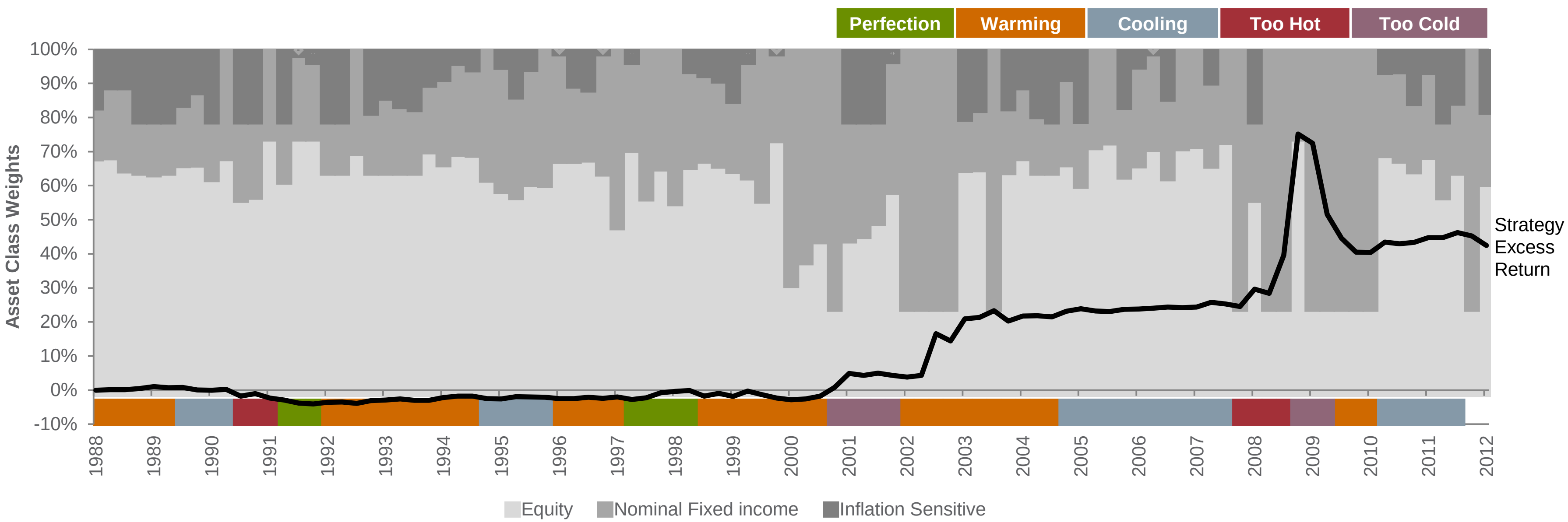




See appendix for index descriptions and time periods.

Dynamically adjusting the regime-based portfolio

RBAA Asset Class Weights and Excess Returns Through Time



	RBAA	Benchmark*
Annual Return (net)	9.9%	8.3%
Volatility	8.3%	11.1%
Max Drawdown	-15.8%	-37.1%
Up Capture	85%	100%
Down Capture	65%	100%
Risk Free Rate	4%	4%
Sharpe Ratio	0.71	0.39

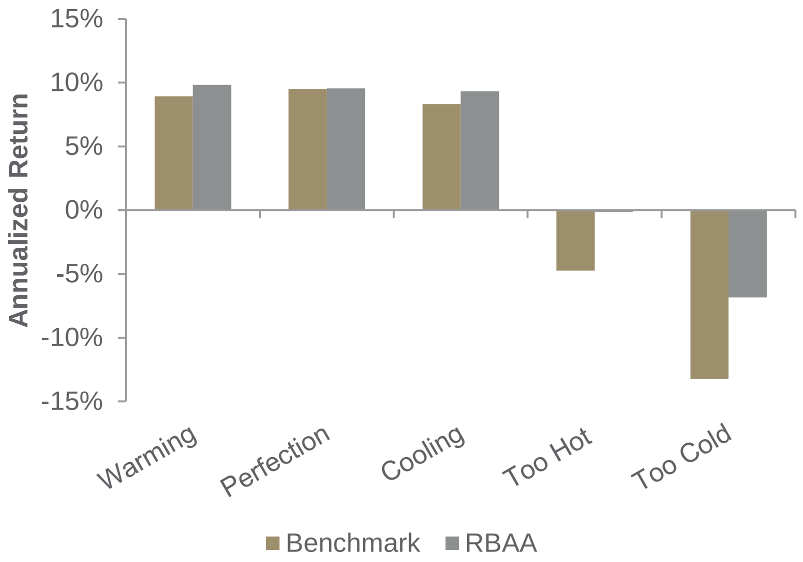
February 1988 to February 2012

	Equity	Nominal Fixed Income	Inflation Sensitive
Average Weight	58%	34%	8%
Benchmark Weight	60%	30%	10%
Minimum Weight	25%	15%	0%
Maximum Weight	75%	75%	20%

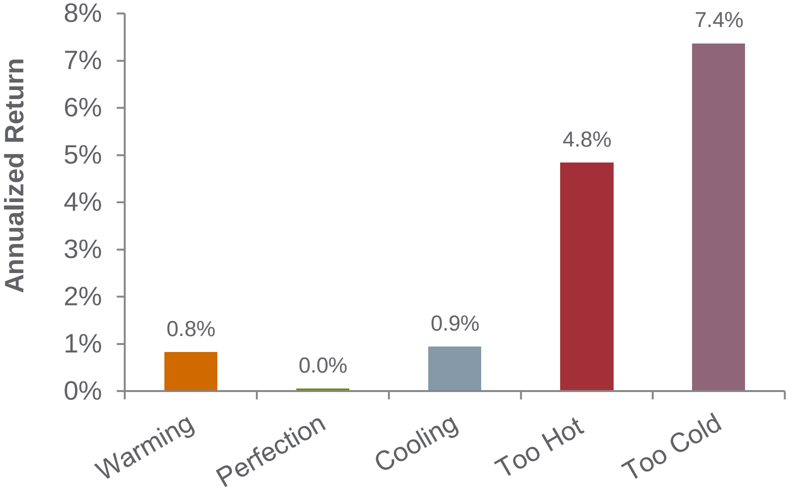
Source: Investment Strategy & Solutions Group *Benchmark weights outlined in appendix. Please see appendix for further information and index descriptions.

Regime-based portfolio outperformed in all regimes

RBAA vs. Benchmark* Returns (real, net)



Excess Return by Regime (net)



Source: Investment Strategy & Solutions Group *Benchmark weights outlined in appendix. Please see appendix for further information and index descriptions. February 1988 to February 2012

Current RBAA portfolio: underweight nominal bonds

	Current Weight	Benchmark Weight	Active	
US Equity	32%	30%	2%	2%
International Equity	25%	20%	5%	
EM Equity	4%	5%	-1%	
Real Estate	1%	5%	-4%	
Corporate Bonds	15%	20%	-5%	-14%
US Treasuries	4%	10%	-6%	
HY Bonds	0%	5%	-5%	
15+ Year STRIPS	2%	0%	2%	
TIPS	7%	0%	7%	12%
Commodities	10%	5%	5%	

Source: Investment Strategy & Solutions Group. *This view is for the 3 months following February 10 2012.

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