



Inflation Protection: It's Not Just About TIPs

Linda Ruiz-Zaiko
Bridgebay
Retirement Plan Consultants
www.bridgebay.com
925-743-0200
DCPlans@bridgebay.com



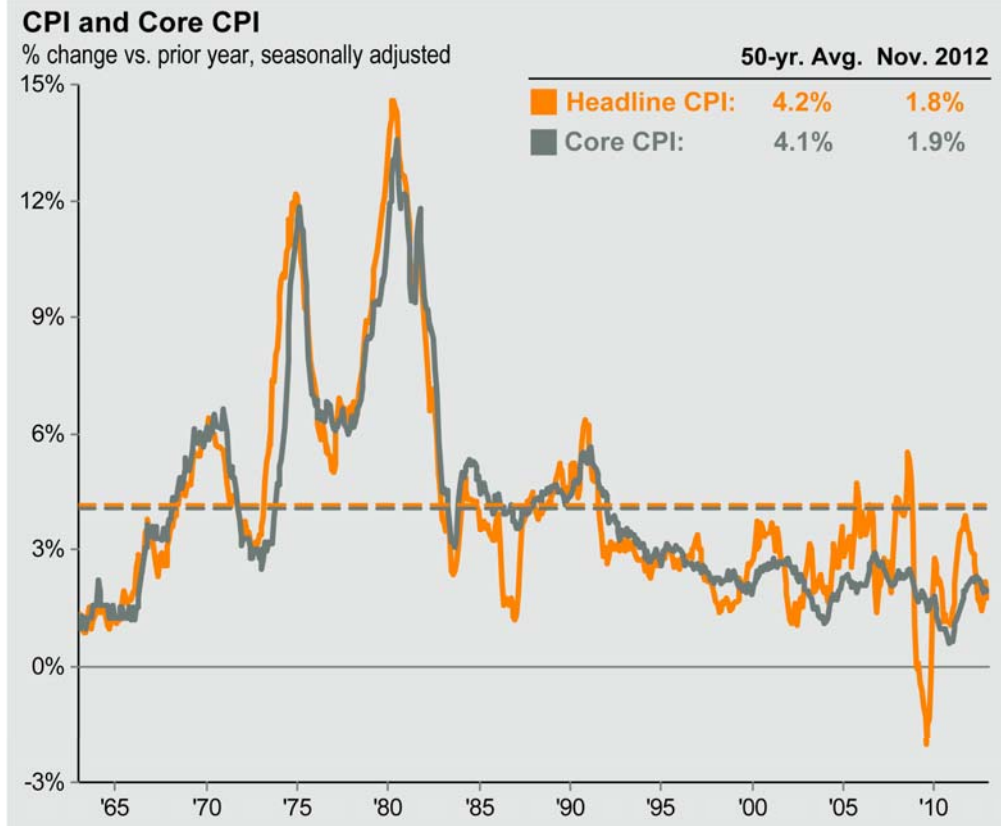
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- ▶ Allocations to inflation-protection can help protect portfolio value over long-term inflationary cycles
- ▶ Asset market values driven by global cycles
- ▶ US Fed and ECB added liquidity
 - Concern over asset bubbles and inflation
- ▶ Massive amounts of global liquidity with record low interest rates are setting stage for rising inflation
- ▶ US not appear to face imminent threat of inflation
 - Global economy seeing global inflation
 - US is impacts through imports
- ▶ Inflation hedging assets will be at a premium should inflation expectations pick up

- ▶ An allocation to inflation protection can
 - Protect against *expected* or *surprise* high inflation
 - Provide diversification with lower correlation to other assets
- ▶ Inflation-linked assets
 - Tend to be counter-cyclical
 - Benefit from rising prices and may protect purchasing power
- ▶ CPI does not capture all of the elements of inflation so real assets can fill the gap
- ▶ Real estate and commodities are leading indicators of inflation because real estate and commodity prices begin to rise prior to observable increases in CPI
- ▶ TIPS are a more immediate indicator of inflation, as their prices reflect current inflation levels reflecting CPI

Consumer Price Index

CPI Components	Weight in CPI	12-month Change
Food & Bev.	15.3%	1.8%
Housing	41.0%	1.7%
Apparel	3.6%	1.8%
Transportation	16.9%	1.6%
Medical Care	7.1%	3.4%
Recreation	6.0%	1.4%
Educ. & Comm.	6.8%	1.5%
Other	3.4%	1.5%
Headline CPI	100.0%	1.8%
Less:		
Energy	9.7%	0.3%
Food	13.7%	1.8%
Core CPI	76.6%	1.9%



Source: BLS, FactSet, J.P. Morgan Asset Management

CPI used is CPI-U and values shown are % change vs. 1 year ago and reflect November 2012 CPI data. CPI component weights are as of December 2011 and 12-month change reflects non-seasonally adjusted data through November 2012. Core CPI is defined as CPI excluding food and energy prices.

Data are as of 12/31/12.

Treasury Inflation Protected Securities - TIPS

- ▶ U.S. Treasury issued TIPS since January 1997
- ▶ \$796 billion market value or 12% of US Treasuries as of June 30, 2012
- ▶ US Treasury adjusts TIPS' principal that
 - Increases with inflation or decreases with deflation
 - As measured by CPI (CPI-U) with a 3 month lag
- ▶ BarCap US Treasury Inflation Protected Securities Index
 - Barclays US Treasury Inflation Protected Securities Index
 - 33 bonds
 - Average maturity 9.18 years
 - Modified Duration 8.53 years
 - Has high interest rate risk, long duration

Treasury Inflation Protected Securities - TIPS

- ▶ Returns can be distorted during periods of flight to quality/safety – regardless of inflation

- ▶ Yields have been falling, are currently low with *negative* real yields
 - The 5 year TIPS real yield of -1.08% as of June 30, 2012
 - Have high interest rate risk (long duration)
 - Current low and negative real yields and interest rate sensitivity
 - Could have principal loss if real rates rise

- ▶ TIPS are sensitive to moves in *real* interest rates
 - Returns expected to be volatile if *real* rates rise

- ▶ Some TIPS funds include
 - Corporate bonds, MBS, global bonds, currencies

Returns in Different Inflation Environments

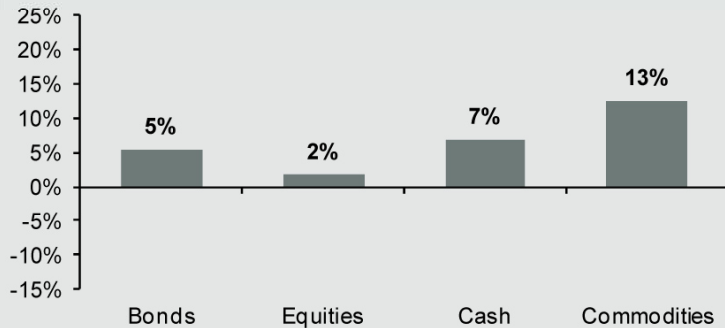
40 years

Rising inflation scenarios

Falling inflation scenarios

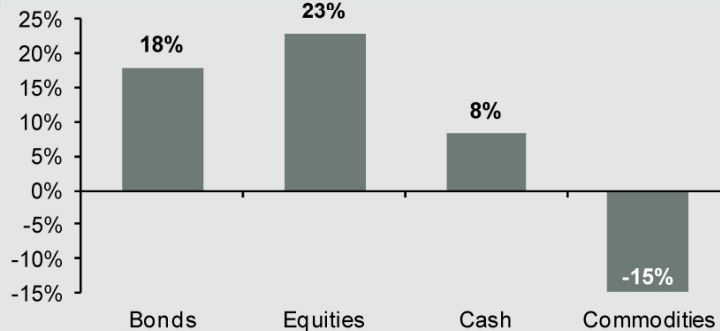
High and Rising Inflation

Occurred 14 times since 1972



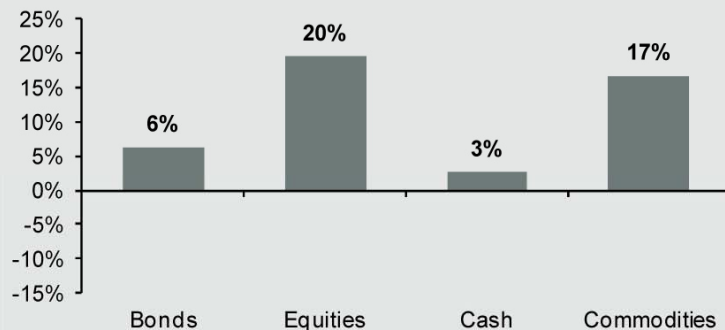
High and Falling Inflation

Occurred 6 times since 1972



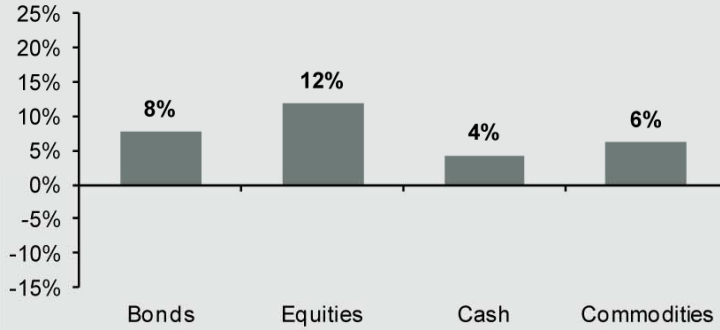
Low and Rising Inflation

Occurred 7 times since 1972



Low and Falling Inflation

Occurred 13 times since 1972



Above median

Median Inflation: 3.3%

Below median

Source: BLS Barclays Capital Robert Shiller Federal Reserve Strategas/Ibbotson Standard & Poor's Source: BLS, Barclays Capital, Robert Shiller, Federal Reserve, Strategas/Ibbotson, Standard & Poors .High or low inflation distinction is relative to median CPI-U inflation for the period 1971 to 2011. Rising or falling inflation distinction is relative to previous year CPI-U inflation rate. Bond returns are based on the Barclays U.S. Aggregate index since its inception in 1976 and a composite bond index prior to that. Equity returns based on S&P 500 price return and annual dividend yield (total return). Cash returns are based on the Barclays 1-3 Month T-Bill index since its inception in 1992 and 3-month T-Bill rates prior to that. Commodities returns based on S&P GSCI. For illustrative purposes only. Past performance is not indicative of comparable future returns. Data are as of 12/31/12 JP Morgan Asset Management

Level and Direction of Inflation Matter

- ▶ Inflationary Environments Affect Asset Classes Differently
 - Asset classes have historically performed in distinct manner depending on the level of inflation and the direction of inflation

Annualized Performance of Inflationary Period Monthly Returns				
Inflation Environment	U.S. Stocks	Commodities	International Fixed Income	TIPS
Moderate and Rising	11.04%	18.75%	4.48%	8.11%
# of Monthly Observations	35	35	35	28
High and Stable	-9.05%	20.02%	6.30%	6.54%
# of Monthly Observations	38	38	37	19
Low and Stable	18.33%	6.92%	20.30%	6.41%
# of Monthly Observations	58	58	53	14
<i>Date Ranges</i>	<i>12/31/1980- 12/31/2011</i>	<i>12/31/1980- 12/31/2011</i>	<i>12/31/1984- 12/31/2011</i>	<i>2/28/1997- 12/31/2011</i>

Source: Standard & Poor Index, Dow Jones-UBS Commodities Index, Barclays Capital Global Aggregate Index, Barclays Capital US TIPS Index, Franklin Templeton

▶ Real Assets

- Have intrinsic value, are consumable or used in production
- Are sensitive to macroeconomic trends and highly cyclical

▶ Tangible Assets

- Correlated to inflation, increase in value when inflation rises
- Have intrinsic value (consumable, used in production)
- Are physical assets

▶ Real Estate

- Commercial real estate, apartment buildings, offices, shopping malls
- Purchased through Real Estate Investment Trusts (REITs)
- REITs generally own physical structures, property or mortgages
- Value of investments driven by replacement cost
- *Real* value tends to increase when prices rise

▶ **Commodities**

- Energy, grains, metals, livestock, timber, agricultural or industrial basic materials
- Many goods included in the CPI and lead as inflation indicator
- Company stocks or derivatives
- Volatile spot prices, geopolitical risk, weather and natural disasters

▶ **Global Infrastructure**

- Stocks of companies located globally
 - Are an oligopoly – few or no competitors
 - In countries based that privatize public assets and are expanding infrastructure projects
 - Own and operate oil and gas pipelines, electricity transmission lines, water utilities, communications towers, seaports, toll roads, build bridges, transportation
 - Assets and services used by consumers that will increase in value with global inflation
- ▶ Have steady demand, limited competition and inflation-linked pricing
- Governed by contracts that inflation-linked
 - Provide current income and inflation protection
 - Available as private equity or publicly traded stocks

Real Asset Correlations

	US Bonds	S&P 500	Non-US Stocks	Real Estate	Commodity	Precious Metals	TIPS
US Bonds	1.00	0.17	0.27	0.22	0.11	0.41	0.69
S&P 500	0.17	1.00	0.93	0.84	0.68	0.18	0.38
Non-US Stocks	0.27	0.93	1.00	0.79	0.75	0.28	0.43
Real Estate	0.22	0.84	0.79	1.00	0.49	0.15	0.32
Commodity	0.11	0.68	0.75	0.49	1.00	0.50	0.44
Precious Metals	0.41	0.18	0.28	0.15	0.50	1.00	0.55
TIPS	0.69	0.38	0.43	0.32	0.44	0.55	1.00

Source: SSgA, Barclays Capital US Aggregate Index, S&P 500 Index, FTSE All World ex US, FTSE NAREIT Real Estate 50, Dow Jones-UBS Commodity Index, S&P GSCI Precious Metals Index, Barclays Capital Global Real: US TIPS. Data covers financial crisis from 4/2008-11/2011

- ▶ Ways to incorporate inflation protection in a DC plan
 - Risk-Based Asset Allocation Funds
 - Target Date Funds
 - Single Strategy Stand-Alone Funds
 - Multi-Asset Class Stand Alone Funds
- ▶ Plan sponsor's dilemma as a separate option
 - Communicating real asset funds to participants
 - Appropriate asset allocation and volatility profile
 - Potential for high concentration in one fund

Inflation Hedging in Target Date Funds

	Market Average of Target Date Funds	
	40 Years to Retirement	At Retirement
Cash	1.8	12.7
Fixed Income		
Core	3.9	34.3
Global	0.8	0.2
High Yield	1.5	5.9
Emerging Markets	0.6	0.1
Equities		
US Large Cap	52.5	22.4
US Small Cap	9.9	3.6
Global	18.9	7.9
Emerging Markets	6.7	2.8
Inflation Hedges		
TIPS	0.4	5.1
Long TIPS	0.1	1.1
Real Estate	1.6	1.0
Commodities	1.3	0.8

Source: MarketGlide. Data as of 6/30/2012

Inflation Hedging in Target Date Funds

	Target Date Fund A		Target Date Fund B	
	40 Years to Retirement	At Retirement	40 Years to Retirement	At Retirement
Cash	0.1	15.3	2.3	15.2
Fixed Income				
Core	3.0	32.8	1.8	19.8
Global	0.0	0.2	0.0	0.0
High Yield	6.2	5.9	3.3	5.4
Emerging Markets	0.0	0.1	4.6	7.3
Equities				
US Large Cap	47.1	19.4	42.2	18.4
US Small Cap	10.2	4.6	9.7	3.4
Global	16.4	7.4	20.2	7.0
Emerging Markets	4.1	2.0	12.1	3.7
Inflation Hedges				
TIPS	0.3	7.1	0.1	16.0
Long TIPS	0.0	0.0	0.0	0.4
Real Estate	0.4	0.3	3.7	1.6
Commodities	12.1	4.9	0.0	1.7

Source: MarketGlide. Data as of 6/30/2012

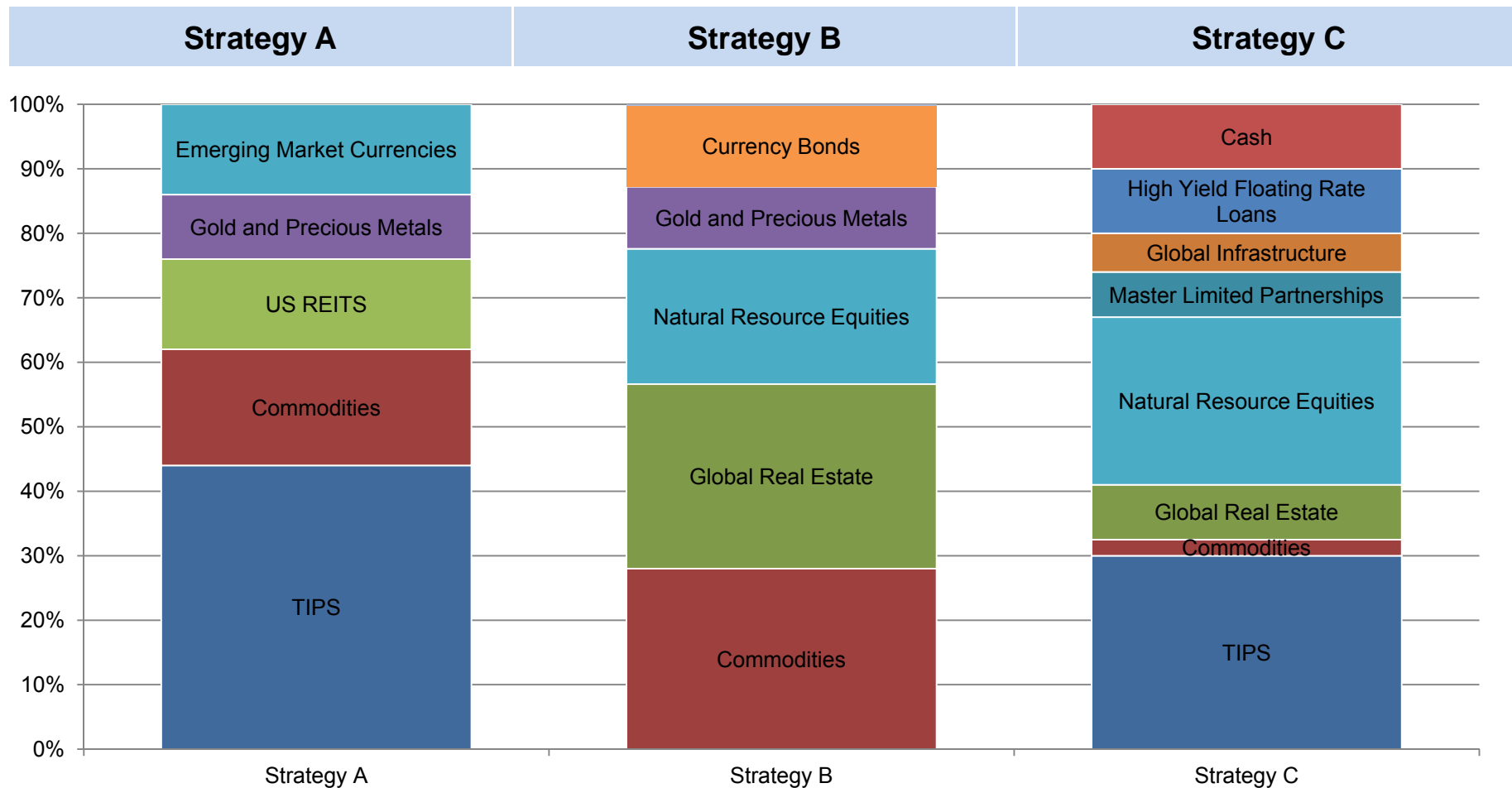
Inflation Hedging Solutions Vary Broadly With Different Risks and Liquidity

- ▶ US TIPS
- ▶ Global inflation-linked bonds
- ▶ Floating rate bank loans
- ▶ Currencies
- ▶ Global REITs
- ▶ Commodities
- ▶ Natural resources
- ▶ Global Infrastructure
- ▶ Commodity-oriented hedge funds
- ▶ Hedge fund of funds
- ▶ Direct investment in real estate

Real Return Strategies

Same Objectives – Different Solutions

Objective: Provide diversified exposure to a broad set of assets that will likely respond to different types of inflation.



- ▶ Inflation pressures are already a problem in much of the world
- ▶ An allocation to inflation protected strategies
 - Protect portfolio values over long inflationary cycles
 - Provide diversification with lower correlation to other assets
- ▶ CPI does not capture all aspects of inflation
- ▶ Real assets can fill the gap but entail trade-offs
 - Benefit from rising prices and may protect purchasing power
 - Real estate and commodities prices begin to rise before CPI increases
- ▶ Real asset solutions have the same objective but vary dramatically
 - Liquidity, complexity, volatility, structure and transparency



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Q & A

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BridgebaySM
Retirement Plan Consultants

Bridgebay Financial Inc.
2603 Camino Ramon, Suite 200
San Ramon, CA 94583
Phone: 925-743-0200

Email: DCPlans@bridgebay.com

www.bridgebay.com