Investing in Inflationary Environments

What is Inflation?

- Decrease in value of money measured by rise in general price levels (indicated by Consumer Price Index)
- Increase in price makes money worth less
- Long-term inflation risk is a concern regardless of near term effect
    - Significant concerns when actual inflation is much greater than expected inflation, or when the inflation is unexpected

Why May Inflation Occur?

- Increase in the money supply
  - This is major concern at the present time
- Decrease of slack in the economy
  - Unused portion of the economy’s productive capacity
  - E.g. underutilized industrial space, unused planes/trains
- High commodity prices
- Low unemployment

Do We Have Inflation? – Not at the Present Time

- Consumer Price Index rose 1.8% in past 12 months (December 2009)
  - Excluding volatile food and energy prices, inflation is slowing
    - Consumer prices increased 0.1% from November to December
- High levels of slack in the economy
  - 56% hotel occupancy rate (July 2009), lowest since 1987
  - 2,535 aircrafts worldwide in storage (July 2009) – 14.2% of the world fleet
  - One-third of freight car fleet in storage
  - 18.7 million homes vacant in 2Q 2009

Why Have We Avoided Inflation?

- Banks avoided lending billions of dollars injected by the Fed
  - Loans and leases on bank balance sheets down 5%
- High levels of unemployment means less power for workers to demand high wages
  - 10% unemployment (December 2009)
  - Private sector’s cost of wages/benefits up 1.5% in 2Q 2009 compared to 3.5% over the decade

Inflation's Impact

Pros

- In moderation, is a sign of healthy economy
- Moderate inflation can provide pricing power to market leaders
- Equity markets have correlated positively to moderate inflationary environments

Cons

- Reduces real rate of return
- Reduces purchasing power for individuals on fixed incomes (an increasing portion of the U.S. economy)
- More volatility causing reduced/delayed investment

Inflation Protection – A Few Options

- TIPS
- Commodities
- Infrastructure
- Real Estate

What are TIPS?

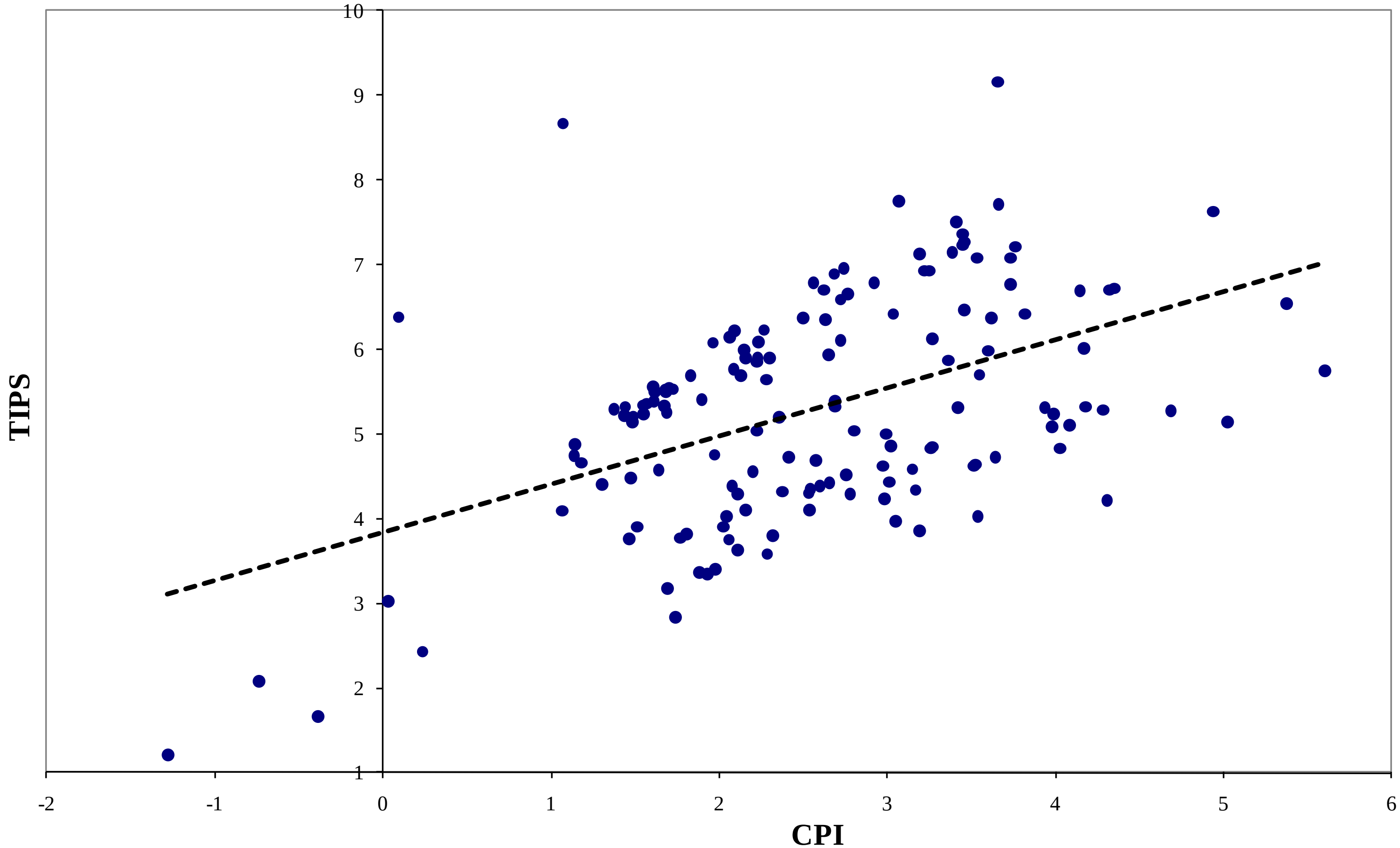
- Treasury bonds that protect against inflation risk
- TIPS pay a guaranteed inflation-adjusted (real) return
- Value of TIPS determined by Consumer Price Index (urban, non-seasonally adjusted)
- Principal adjusted for inflation at time of coupon payment
  - Coupon paid based on the new inflation-adjusted principal

TIPS Example

- Assume initially,
  - TIPS bond purchase price is $1000
  - CPI is 100
  - Coupon rate is 3%

- In six months,
  - CPI is 101 (2% annual inflation rate)
  - Principal adjustment: 101/100 * $1000 = $1010
  - Adjust coupon payment: 3% * 6/12 * $1010 = $15.15

TIPS – Positively Correlated with Inflation



Regression Equation: TIPS = 3.8432 + .5671 CPI
R^2 : 0.2366

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Commodities

- Include basic resources such as iron ore, coal, oil, wheat, gold
- Traded through futures contracts on exchanges
- Serve as production inputs whose prices rise in tandem with broad economic activity
- Exhibit positive relationship with general price levels of goods sold in the market
- Invest through commodity indices or active commodity managers using futures

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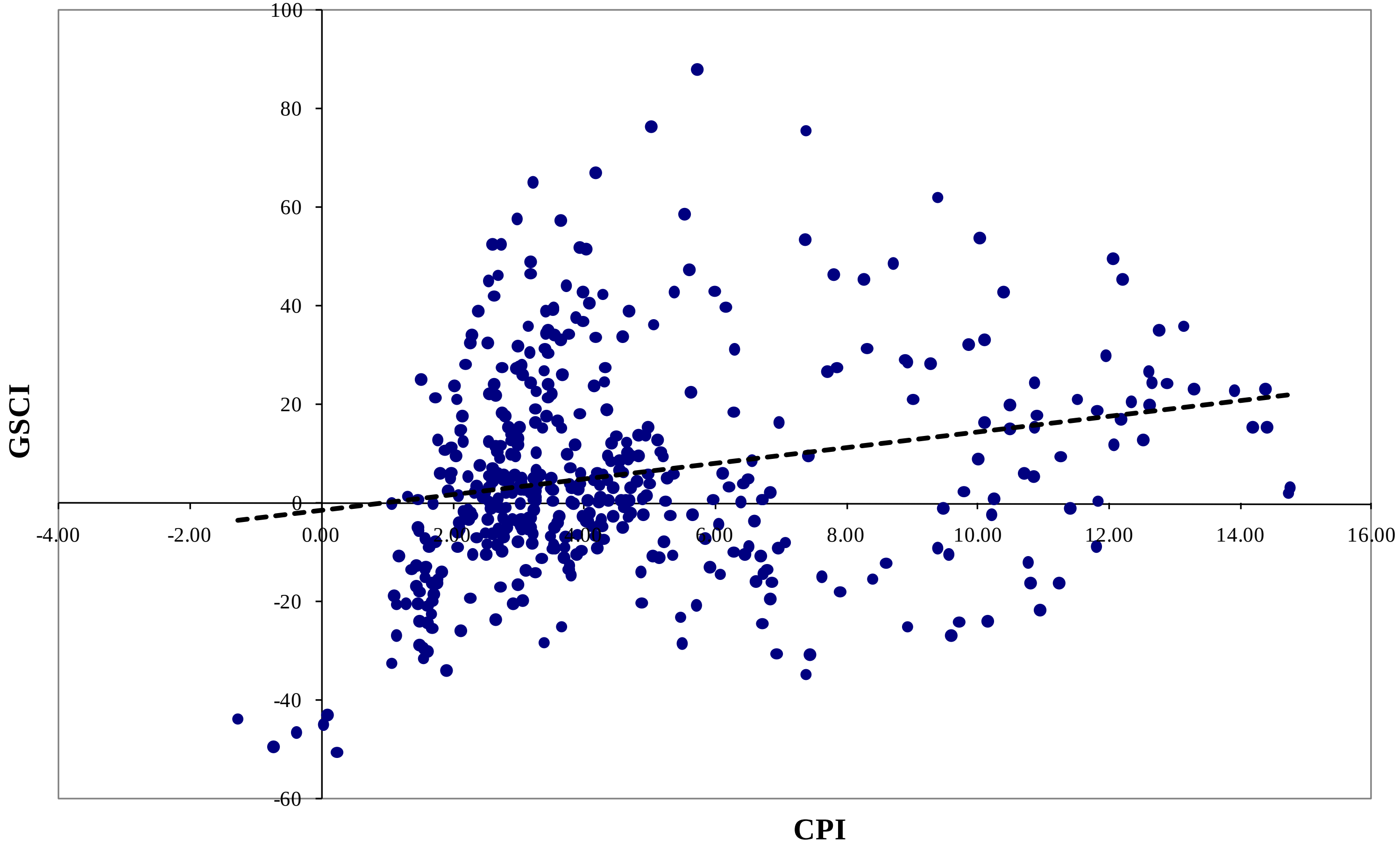
Commodities – Positively Correlated with Inflation

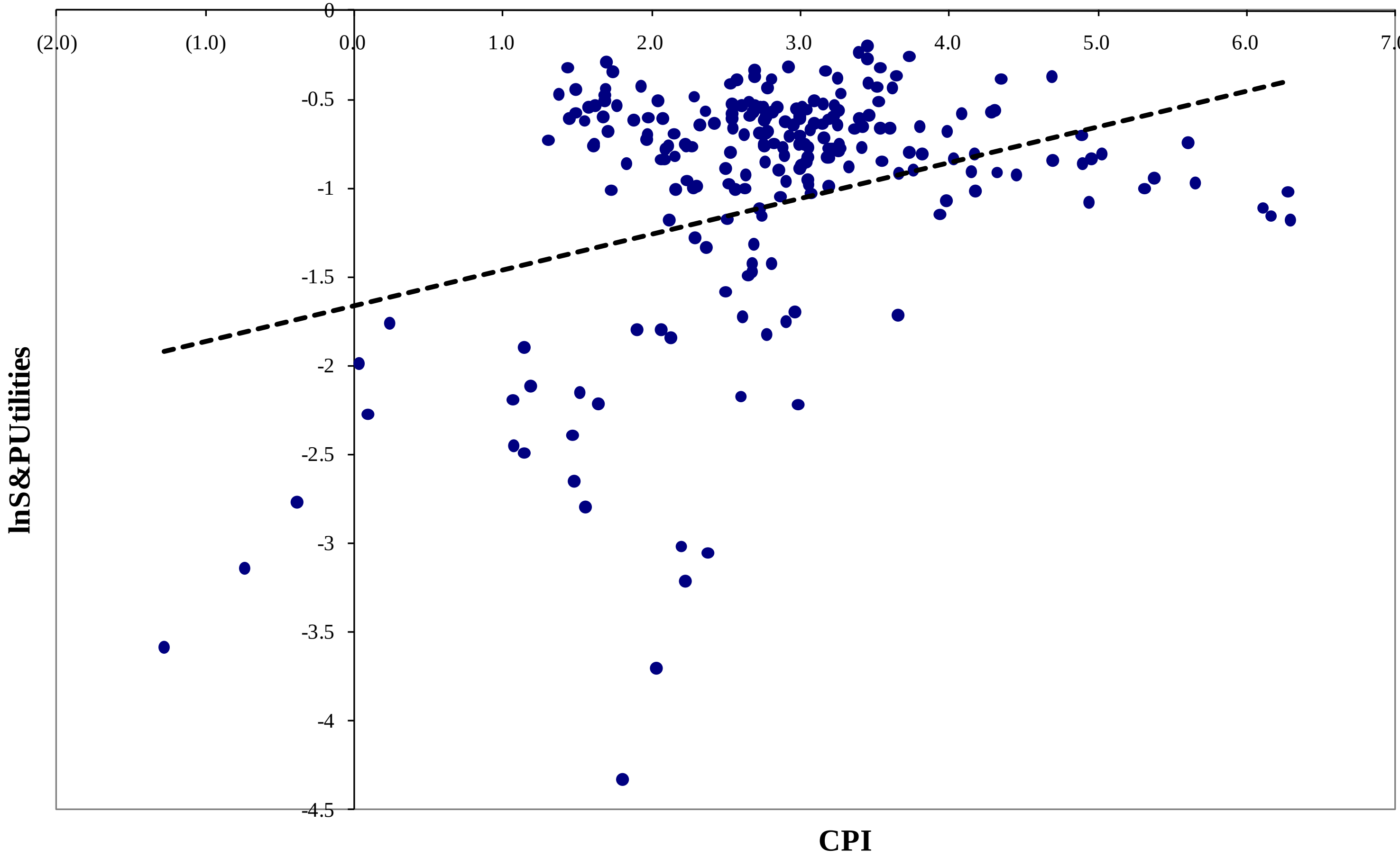


Regression Equation: GSCI = -1.2026 + 1.5829 CPI
R^2 : 0.0514

Infrastructure

- Includes basic physical systems
  - Transportation, communication, water, electricity
- Consumers are relatively insensitive to price movements
  - Lack of better or cheaper substitutes
- Highly regulated assets often with government concessions
  - Governments often explicitly tie prices to inflation index such as CPI
- Lacks universal index to track performance
  - S&P 500’s Utilities sector is a reasonable proxy

Infrastructure – Positively Correlated with Inflation

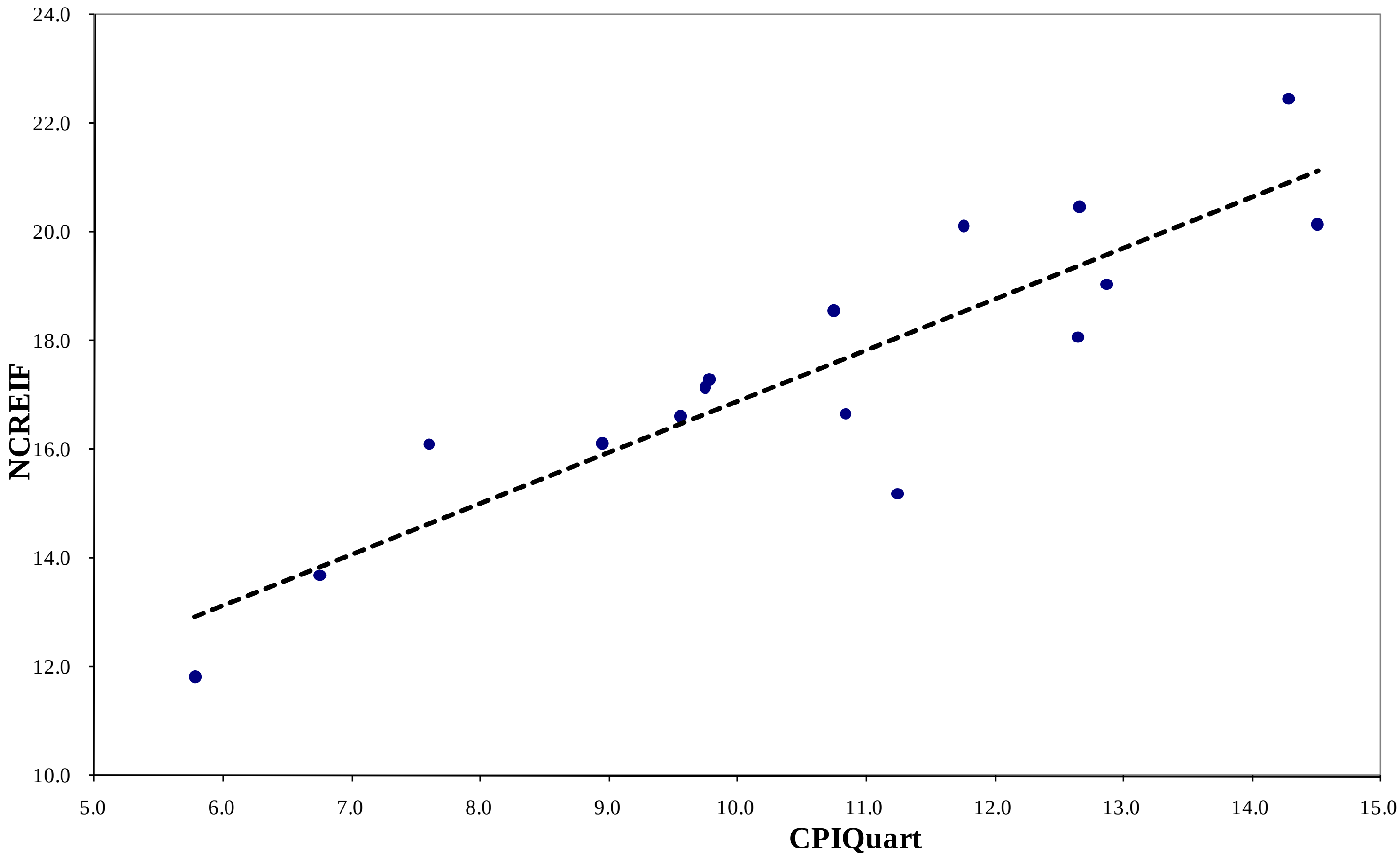


Regression Equation: lnS&PUtilities = -1.6650 + .2015 CPI
R^2 : 0.0106

Real Estate

- Land and any other asset permanently affixed to it
- Divided into private and public markets
  - Private markets measured by the NCREIF index
  - Public markets consist of REITs; impacted by daily market liquidity
- Property owners can raise rents to offset higher input costs during inflation
- Long-term inflation protection due to long-term nature of contracts

Real Estate – Positively Correlated with Inflation



Regression Equation: NCREIF = 7.4962 + .9405 CPIQuart
R^2 : 0.7859

Summary

- TIPS, commodities, infrastructure and real estate offer protection from high inflation
  - Asset returns positively correlated with CPI
- Each asset class has unique characteristics impacting portfolio performance
  - Beware of blindly choosing asset class with highest fit and correlation
- Analyze risk tolerance, liquidity needs, diversification benefits, and investment policy guidelines

Asset Class	R^2	Correlation	CPI Coefficient
TIPS	0.2366	0.4864	0.5671
S&P GSCI	0.0514	0.2267	1.5829
S&P Utilities	0.0106	0.1029	0.2015
NCREIF (Real estate)	0.7859	0.8865	0.9405