

DEFENSIVE ASSET ALLOCATION IN AN INFLATIONARY ENVIROMENT

PIMCO

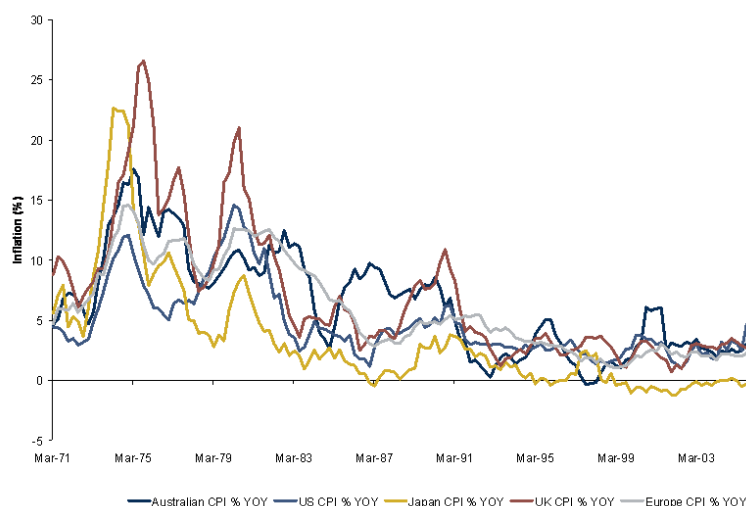
Over the recent period of market dislocation, inflation has been the least of many investors concerns. But as markets begin to normalise, thought must be given to the threat that rising inflation poses. The inflationary pressures we are witnessing in emerging markets are spilling over into developed economies. More worryingly, this is coinciding with a forecasted slowing of growth in the developed world.

Can we continue to blindly rely on central governments to win the fight against inflation for us, or is it time that we looked at asset allocation as a way to inflation proof our portfolios?

Central Banks and Inflation

The last 15 years saw inflation targeting by central banks become the orthodoxy. Certainly, on the evidence of the following chart¹, central banks could claim victory. From the oil shock induced inflationary highs of the 1970's to recent times, inflation has been in persistent decline.

Figure 1: Trends in Global Inflation



Source: PIMCO, Bloomberg

But can this decline be attributed purely to the success of central bank policy? One could argue that they were not as good as the data makes them look. The argument goes like this; central banks hadn't so much learnt what policy settings served to contain inflation but rather were carried along on a global wave of deflation emanating from political changes that had the effect of greatly expanding the global labour pool. Once that one off labour supply shock has been fully assimilated, then the usual laws of supply and demand will reassert themselves, with one important caveat;

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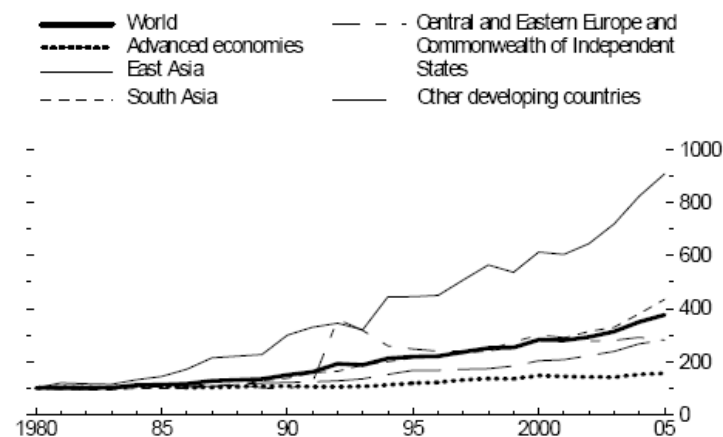
substantial wealth creation in emerging economies has created new sources of demand for basic commodities, suggesting higher inflation might be with us for some time.

Alan Greenspan, the former Governor of the U.S. Federal Reserve Board remarked that the fall of the Iron curtain in 1989 “was the most under researched event in economic history”ⁱⁱ. Also in this category was the introduction of agrarian reform in 1978 by Communist Party of China that set the foundation for the modern Chinese state. Both these events have affected global commerce and inflation in profound ways.

By IMF measures the global labour force has risen fourfold over the past two decades, reflecting the integration of China, India, and the former Eastern bloc into the global trading systemⁱⁱⁱ. The end of European communism not only provided new markets for capitalism but more importantly supplied hundreds of millions of new, many highly qualified, workers for absorption by Western economies. Chinese economic modernisation provided the factory floor for the Western world.

Export-Weighted Labor Force by Region

(Index, 1980 = 100)

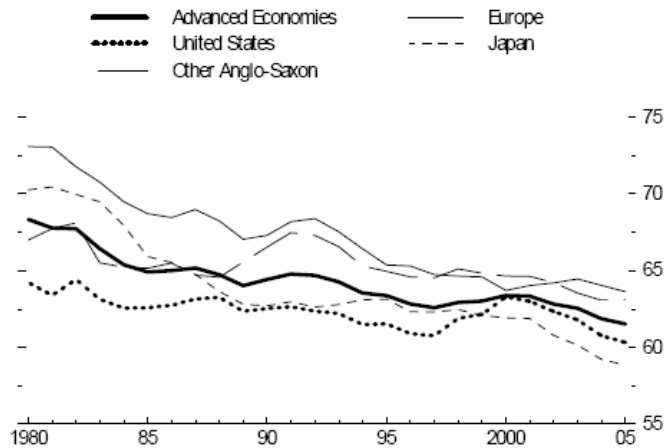


Source: IMF World Economic Outlook April 2007

The economic effects were twofold. First, wage inflation in the Western world was stymied as new sources of high skilled labour (India, Eastern European labour) competed successfully in globalised markets and put a lid on labour prices for both skilled and knowledge workers. Second, Chinese scale in manufacturing drove down production costs, provided western economies consumption goods at ever lower prices and put a lid on unskilled labour prices. Unsurprisingly, corporate profits as a share of GDP drifted higher, while labours’ share of the pie broadly stagnated^{iv}.

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Income Share of Labor by Group of Countries (Percent of GDP)

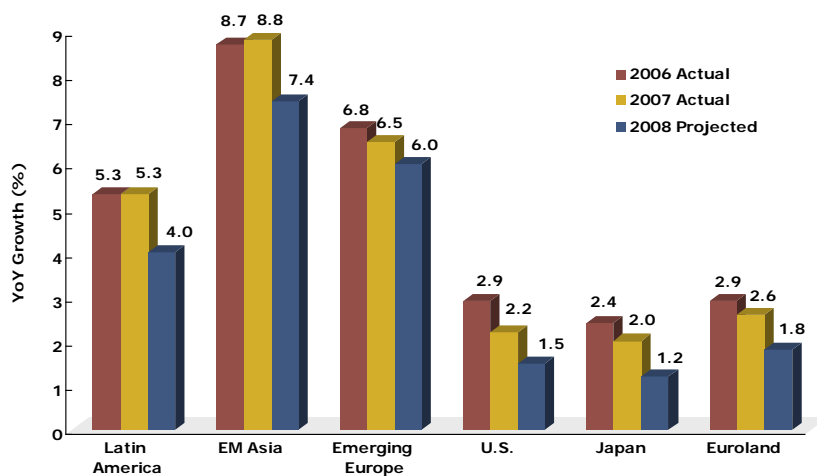


Source: IMF World Economic Outlook April 2007

However some would argue that labours' relative decline in income has been offset by the decline in the price of consumption goods, falling interest costs and the combined wealth effect of rising housing and asset values (well, until recently) thereby underpinning living standards in the absence of wage rises. All in all, a serendipitous set of economic circumstances if you were a central banker.

Until now that is. The emergence of strongly expansionist economic policies and new wealth in the emerging world has put strong pressure on scarce resources, as seen in the recent increases in food and fuel prices. Longer term, inflation trends are likely to be bolstered by the empowerment of the Chinese workers (i.e. wage claims); the continuing emergence of the Indian middle class and growing affluence in emerging economies in general. In the developed world our central case is for slowing growth and **continued rising inflation as higher commodity prices flow through to the end consumers.**

GDP Growth Rates

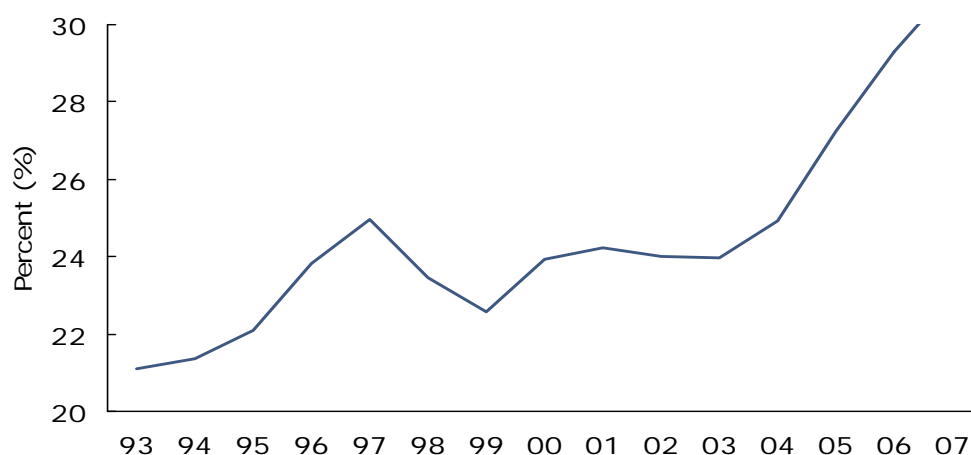


Source: PIMCO, JP Morgan, Goldman Sachs

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Global growth will remain robust despite a cyclical downturn in the U.S. and other developed economies. Growth will be driven to a greater extent by emerging markets that are in the midst of a breakout development phase. The global economy is evolving into a multi-polar growth world where countries such as China emphasise more balanced development paths that include enhanced consumption, market-based systems and more flexible exchange rates.

EM Share of Global GDP (At Market Exchange Rates)



Source: PIMCO, IMF

Inflation pressures will spring from several sources. These include: the spillover of global demand into commodities; gradually rising wages as well as policy shifts toward greater employment and social spending in developing economies; and loose U.S. monetary policy that tends to export inflation, especially to emerging economies that align their currencies with the U.S. dollar.^v

If the great deflationary tailwind of globalisation is behind us and the emerging world provides new sources of inflation in the global economy, then inflation over the next 10 years is very likely to be higher than the last 10.

How can I protect my portfolio from inflation?

Rather than think about an investment portfolio as a range of asset classes, investors should think about their portfolios as a set of inflation hedges, each fulfilling an important role in hedging inflation outcomes.

Inflation hedges can be divided into three main buckets;

1. Leading inflation hedges;
2. Contemporaneous hedges;
3. Lagging inflation hedges.

Leading inflation hedges

As their name suggests, leading inflation hedges are assets that tend to perform in advance of inflation becoming visible in the broader economy. Typically these are equities and commodities. Logical thinking illustrates this point- companies can raise prices for their products when they sense their input costs (commodities) beginning to increase. Higher prices may translate into higher earnings in the short term, however, over longer time periods, equities have often shown a negative correlation to inflation and can be especially hurt by unexpected inflation^{vi}.

Correlation of Equity Returns & Inflation

U.S Equities & Inflation	-0.25	Australian Equities & Inflation	-0.11
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Source: Bloomberg, PIMCO

When inflation rises suddenly or unexpectedly, it can heighten uncertainty about the economy, leading to lower earnings forecasts for companies and lower equity prices. Going further, present valuation of equities is often done using a discounted cash flow method. Necessary for this calculation is the use of a “risk free” rate of return by which future expected cash flows are discounted. The proxy for this is often cash or short dated government securities. As inflation increases, it is widely accepted that central banks will raise short term interest rates. The increase in rates will have ramifications for our present valuation model, with an increase in inflation and hence rates translating into a lower present value calculation on equities. This is also true of infrastructure projects.

Notwithstanding that corporations (outside of finance and banking) are in pretty good shape, higher financing costs, slowing economies and higher inflation is a potent antidote to stock market performance.

As mentioned previously, rising commodity prices are perhaps the most visible inflationary force because when commodities rise in price, the costs of basic goods and services generally increase. Commodity futures, which reflect expected prices in the future, might therefore react positively to an upward change in expected inflation. It therefore makes sense that an allocation to commodities will act as a natural hedge against inflation. As the table below illustrates, commodity returns have over time shown a positively correlation with inflation.^{vii}

Correlation of Commodity Returns & Inflation

Commodities (USD) & Inflation	0.33	Commodities (AUD) & Inflation	0.45
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Source: Bloomberg, PIMCO

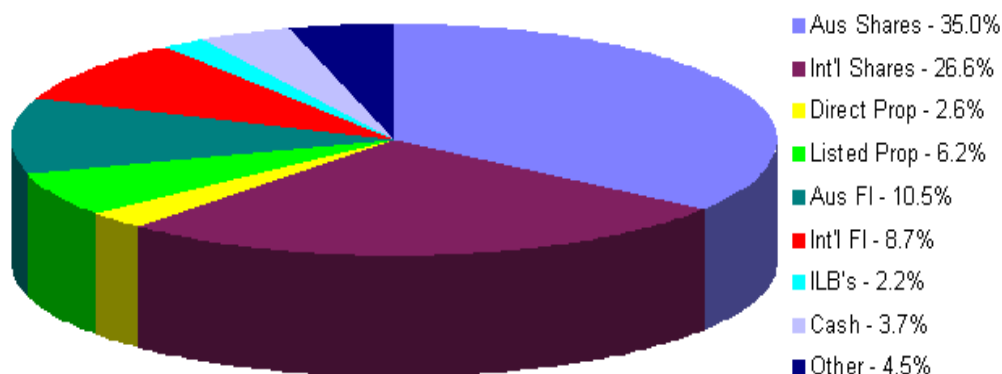
However, holding actual commodities is far from practical. And gaining exposure by investing in the shares of commodity producers has its own problems- returns may be affected by other factors such as management talent, unrelated businesses etc. An investment in commodity indices represents a practical, low cost way to gain exposure to changes in commodity prices.

A typical balanced asset portfolio tends to have a greater proportion of leading inflation hedges than other hedges, i.e., most portfolios are excessively reliant on the equity risk premium to achieve their

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long term CPI plus objectives. Mercer surveys put the total equity allocation of a typical “Balanced” fund at around 60%^{viii}.

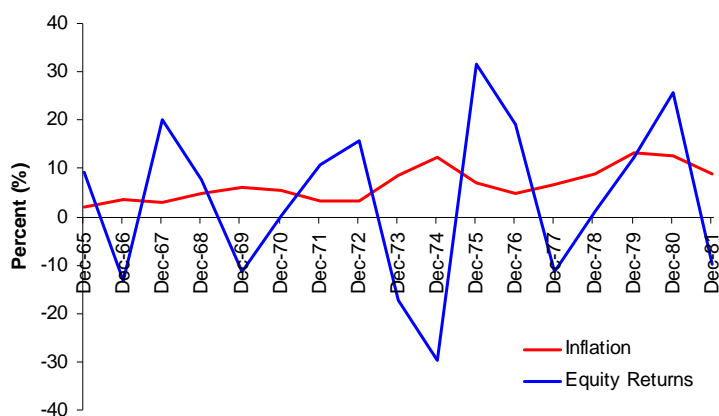
Average Composition of a “Balanced” Portfolio



Source: Mercer MPA Database

Essentially, funds are willing to underwrite a large mismatch between the CPI plus target stated in their investment policy statement and the asset pool that supports that objective. Almost entirely this mismatch is explained by the belief that equities, over the long run, outperform inflation. That proposition holds if the average experience of investors over the last 10 years persists into the next 10 years; the CPI has averaged 3% per annum in the 10 years ending June 30, 2008 and Australian Equities have returned 11% per annum over the same period. A handy 8% real rate of return. But will the experience of the next 10 years more closely resemble the last 10 or might it more closely resemble those of a US equity investor, from the mid 1960's to 1981, where, the combined effect of the oil shock and inflation, crushed equity returns.^{ix}

US Inflation vs Equity Returns



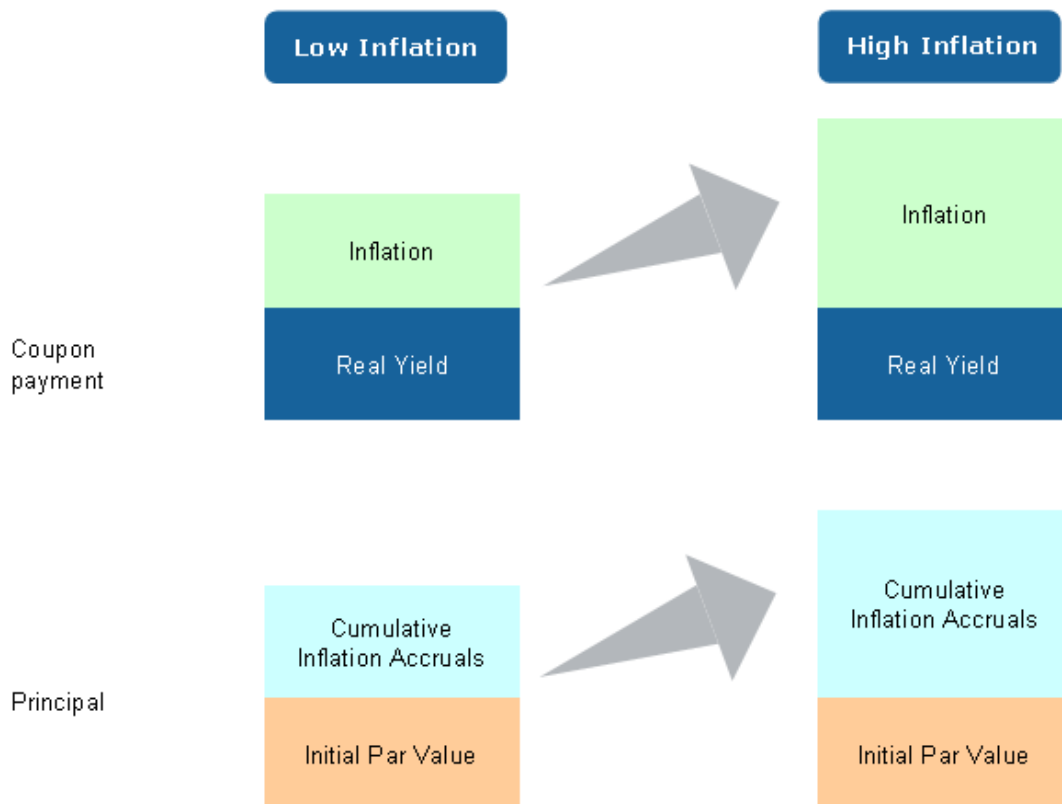
Source: Bloomberg

So for those periods where inflation is emerging and equities are being pummelled, what's needed are other forms of inflation hedging, which bring us to contemporaneous inflation hedges.

Contemporaneous hedges

Examples of contemporaneous hedges include investing in Inflation Linked Bonds (ILBs) or CPI Swap contracts. Inflation Linked Bonds are constructed to insulate the investor against rising inflation by explicitly imbedding a floating rate of inflation into the interest coupon that they pay, or by adjusting the capital value of the bond to reflect the prevailing inflation rate. Inflation Linked Bonds are issued by many federal governments. Australia issued its first inflation-linked bond, known as a Capital Indexed Bond in 1985. However, in 2003, the Australian government suspended new offerings of inflation-linked debt, citing a decline in financing needs due to budget surpluses. Since this decision, the relative supply of Australian Government ILBs has decreased by more than half, as a proportion of the Barclay's World Government Inflation Linked Bond Index.

How do inflation-linked bonds work?



$$\text{Real yield} \times (\text{initial par value} + \text{inflation accruals}) = \text{coupon payment}$$

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Given the shortage of Australian ILBs on offer, renewed interest in a synthetic inflation hedge has arisen. As opposed to holding a traditional ILB, Consumer Price Index (CPI) swaps allow market participants to hold a nominal bond with a CPI swap in order to replicate traditional ILB exposure.

The following two diagrams show how this can be done.

Diagram 1. Replicating an Inflation Linked Bond Using a Nominal Bond and a CPI SWAP

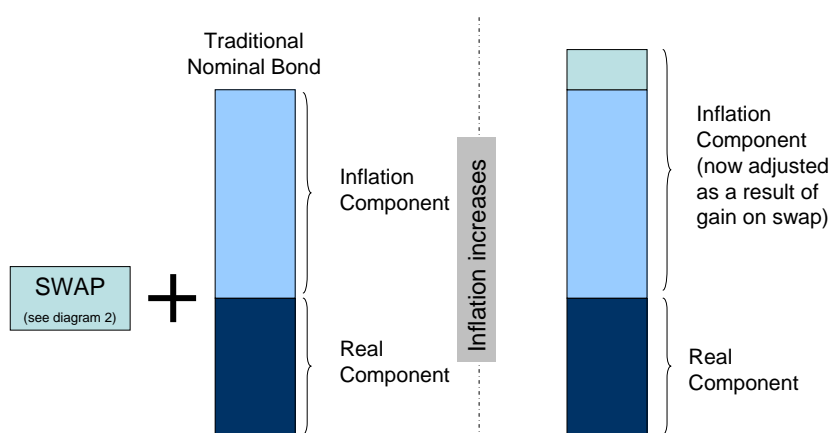
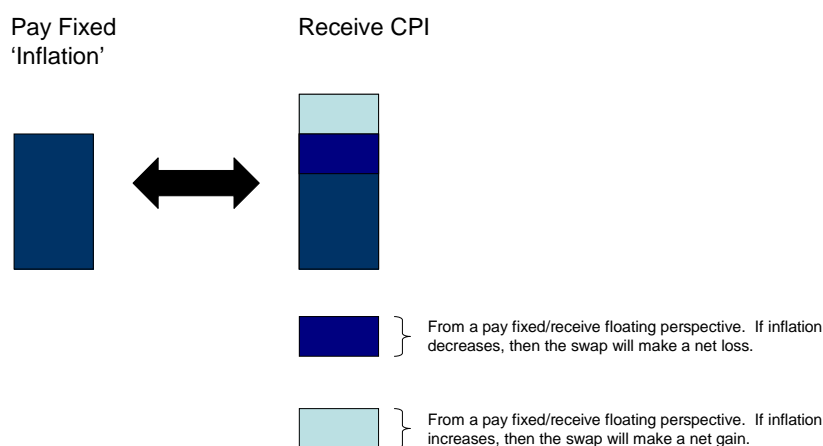


Diagram 2. Organisation of a CPI Swap



Source: PIMCO

A CPI swap is entered into whereby a fixed 'inflation' rate is paid in exchange for a floating rate as dictated by the level of the Australian CPI. If, for instance, inflation increases then the CPI swap makes a gain for the investor who is paying a fixed rate and receiving this higher CPI figure. This is then added to the nominal cash flow streams so that the cash flows of a physical ILB are replicated.

The advantage of both strategies is that they provide explicit inflation protection. In fact, if you are limited to a single inflation protection asset then the contemporaneous hedge ought to be preferred as it preserves real purchasing power. Effectively, an inflation linked bond ought to be regarded as

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the risk free asset of choice for a long term asset pool like a superannuation fund. After all, it solves the core problem confronting a long term investor- that of the erosion of real purchasing power by inflation.

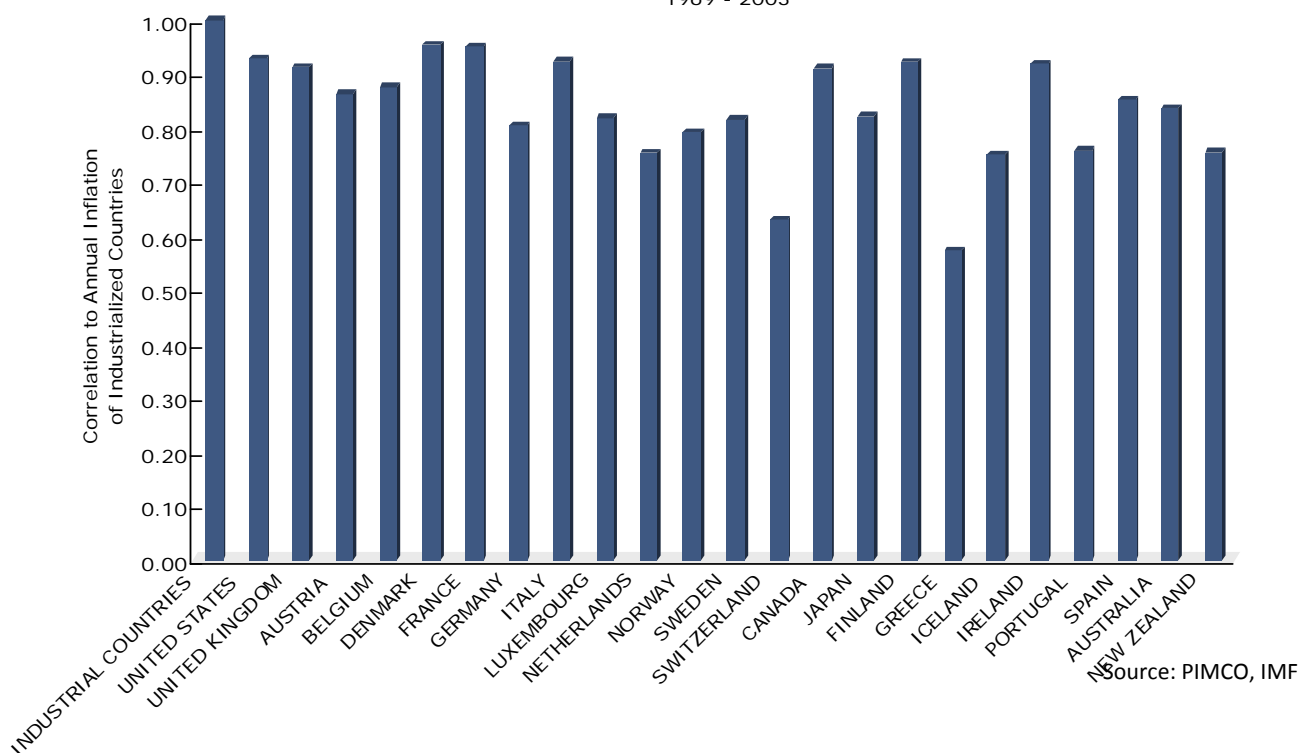
The difficulty with both strategies is a lack of supply of suitable instruments and securities in Australia. Additionally, whilst inflation linked swaps have been in the market for some time, they have traditionally been relatively expensive and illiquid, not only in Australia, but globally.

One solution to the scarcity issue is to invest in a portfolio of global inflation linked bonds. There, the correlation between Australian inflation and the inflation of the major inflation linked bond issuing nations is high; in fact, correlation between Australian and US inflation, to the tune of 80%, has existed over the last 25 years. As such, global inflation protected securities offer a sufficiently high correlation to domestic inflation, and an excellent contemporaneous hedge.

Correlation of Global Inflation

Aggregate Correlation of All Industrial Countries to Inflation of Each Industrialized Country Based on Annual Inflation Rates as published by the IMF 1969 - 2003

Average cross correlation across all industrialized country annual inflation rates is 0.70 from 1969 - 2003

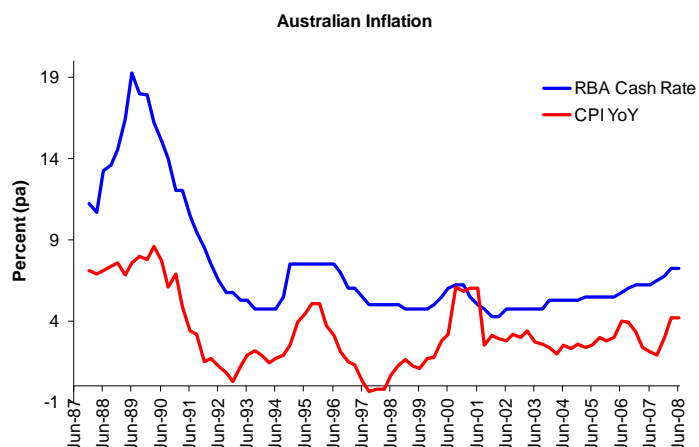


Lagging inflation hedges

Lagging hedges are centred in those assets that offer returns following bouts of inflation. For example as inflation drifts higher, central banks seek to curb demand by pushing short term interest rates up. Investors with investments in fixed interest securities like floating rate notes – where the yield is determined by adding an interest margin over an index such as the Bank Bill Index, garner higher returns and gain a good lagged inflation hedge. In Australia, this strategy is particularly effective given the Reserve Bank, aside from one brief period, have maintained a real cash rate – that

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is, the cash rate has typically been in excess of the inflation rate. As a result, you are locking in real rates of return by owning cash. Add a margin for active management and in this environment of elevated cash rates absolute return fixed interest looks a pretty compelling strategy for achieving high real rates of return and a good inflation hedge.



Source: Bloomberg

Conclusion

A continued period of low inflation, brought about by a combination of central bank action and social and political factors, has meant that many of today's investors have sharply discounted the threat that inflation poses to their portfolios. In order to avoid having inflation chipping away at real savings and investment returns, investors need to ensure that they have in place a system of hedges against inflation.

There is an array of data which displays the correlation of numerous asset classes to inflation, some of which has been presented here. At the end of the day, however, it is impossible to say with any certainty which asset class will prevail as the best inflation hedge and which will not work because of the peculiarities of the particular cycle through which we are moving.

The most reasonable way to combat inflation within a portfolio is to have as many links in the armour of your investment programme as possible so that in the long term, the portfolio is immunised against a prolonged bout of high inflation.

As we have seen, asset classes that initially seem to benefit from a rise in inflation (e.g. equities, property), can suffer as it takes hold. Alternatively, assets which initially suffer may benefit once the problem is recognised (e.g. cash plus strategies). Several hedges against inflation exist; leading, contemporaneous and lagging. It is important for investors to identify the part of the inflation cycle we are in, understand the implications for their portfolio and allocate accordingly.

The chart below provides a quick reference check for investors to ensure their allocations reflect the prevailing conditions. In our view of the world economy, the bottom right hand corner represents where we believe investors should currently be positioned.

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ENDNOTES

ⁱ "Trends in Global Inflation" shows the inflation rate of various countries over the period 1971-2006. *Source: PIMCO/ Bloomberg*

ⁱⁱ Source: PIMCO Client Conference 2005

ⁱⁱⁱ Jaumotte, F & Tytell, I (2007), "The Globalization of Labor", IMF World Economic Outlook

^{iv} As above

^v June 2008 "PIMCO Secular Economic Outlook for 2008"

<http://www.pimco.com/LeftNav/Viewpoints/2008/Market+Outlook+Q3+2008.htm>

^{vi} Australian Equities represented by the ASX 200. US Equities represented by S&P 500. Figures are based on 1 year returns compared to 1 year CPI figures for Australia and the US between 1992-2007.

^{vii} Commodities are represented by the DJAIG commodity index denominated in AUD and USD. Figures are based on rolling 1 year returns measured quarterly between 3/31/1992 and 6/30/2008.

^{viii} 2008 "Pooled Funds Asset Allocations (Balanced Funds)", Mercer MPA Database. Figures as at Dec 2007

^{ix} "US Inflation vs. Equity Returns" shows annual returns of the S&P 500 Index versus YoY CPI figure for the period 31 December 1965 – 31 December 1981. During this time, correlation between the two was -0.2