

The Inflation Puzzle

Inflation plays a major role in the global economy and financial markets. Globally, central banks have adopted inflation targeting as their single most important target, having been haunted by periods of hyperinflation and deflation in the past. They flood the markets with liquidity and are willing to risk many unknown and unintended consequences, just to get inflation back in its presumed comfort zone. Are they making a policy mistake and is inflation really that important? How should investors evaluate central banks' behavior and how should they position their portfolios? Given the liquidity supply should we be afraid of hyperinflation or are authorities just pushing on a string, facing a liquidity/deflation trap? This article aims to address many of the questions surrounding the inflation puzzle, ultimately in search of the best investment strategies that position the portfolio optimally for different inflation regimes.

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Inflation confusion

Do we actually know what inflation is? We have defined proxies for consumer price inflation, but if you ask consumers how they experience inflation, a serious discrepancy often emerges. That is because several items that cannot be measured are being excluded or are perceived more important than they actually are. Perception differs from reality. From a macro perspective, one could argue that CPI is just a part of total inflation, so why not take the much broader defined GDP deflator or focus on a global

measure? For example, Switzerland has had deflation for many years, but it is still one of the most expensive countries in the world due to its strong currency. A new phenomenon is that some items have dropped out of the CPI basket, as they are offered free of charge. For example, taking pictures and sharing them used to be expensive, but the marginal cost has now become negligible. This form of hyperdeflation is certainly invisible in our CPI statistics. Don't we need to distinguish between good and bad forms of inflation/deflation and only address the harmful aspects?



Sources of inflation

Relative price changes don't matter for inflation as a whole. Underneath the surface of a price index, lots of changes can happen without affecting the overall inflation number. The focus here is only on inflation itself and the main causes of significant changes.

A first cause of inflation can be the **money supply** that outpaces demand. If the printing press runs freely, one would expect that the value of money erodes and, therefore, the general price level will rise. There is much less attention to this idea today than there was during the 1980's when Milton Friedman, monetarism and the quantity theory of money were mainstream. The reason is that it has been difficult to find evidence of a stable relationship as the stability of money demand and/or velocity have been hard to prove. Additionally, the financial economy has grown enormously and its capacity to absorb money has blurred the relationship even further.

For a country coping with a current account deficit, inflation can be caused by **currency depreciation**. If competitiveness is a problem, an easy way out for a country is to cheapen the currency, as it immediately restores export prices to international levels. Obviously, one needs to pay a price for this. The stronger the drop of the currency, the higher the imported inflation push will become, ultimately risking an inflation/depreciation spiral. Resorting to competitive depreciation is a sign of ignoring the deeper cause of domestic overspending and it feeds inflation.

Deflation caused by technological progress should not be feared by central banks nor investors

An undisciplined government can be another cause of inflation. Collecting **taxes** is more popular than keeping government spending in check and since value added tax (VAT) was first introduced in 1954 in France, it has globally become ever more popular to increase its level. In most European countries VAT is running at 20% or higher.

Dispersion in global inflation has dropped as trade amongst countries has progressed. For global inflation to rise, one needs either a **cost push**, like an oil supply shock as experienced in the 1970's, or a prolonged period of global economic growth, running above its potential.

Deflation on the other hand, can be caused by most of the above factors, simply by just mirroring the argument. A special deflationary push can come from an economic **depression**. Normally this results from an excessive overhang of supply that follows after a bust in housing and/or the equity market. In history, depressions have been triggered by wars as well. A special deflation factor in the past has been **globalization**, for instance when cheap Chinese resources became available to the global economy.

A country can also be trapped in a **fixed or joint exchange rate regime**. The euro project is going

through a deflationary bust with most of the burden located in the periphery. As the core countries in the Eurozone have inflation under control, the peripheral countries, who used to be able to adjust their currency periodically, will now have to accomplish a real depreciation. Within a single currency zone, this can only be achieved by deflation to restore competitiveness.

“Inflation is taxation without legislation”

(Milton Friedman)

Innovation and productivity gains are another important source of deflation. The more productivity increases, the cheaper a product can become. By moving more and more towards digitalization, we experience an unprecedented growth in non-material wealth, often at a near zero marginal price. The **weightless economy** is growing fast and the old economy measures have difficulty in capturing this. If, for instance, worldwide communication through calls, video or chat gets offered for free, what will it do to economic growth, jobs and inflation? A high quantity multiplied by a price of zero will not get included in national production statistics. It will most likely show up as stagnating or diminishing growth with a deflationary undertone. Fighting this form of deflation by continuously increasing liquidity is unlikely to be the right answer.

In assessing whether inflation/deflation is good or bad, the source of it matters a great deal. Deflation caused by productivity gains is not disruptive to economic activity, so there is no need to fight it. If Germany would allow inflation to run double its 2% target, it would facilitate relative price adjustments within the Eurozone and relieve the periphery of a bad form of deflation. Also, many have argued that the rise in energy prices has been a driver behind a long overdue search for sustainable alternatives. Is it better to trust the efficiency of the economy and financial markets to set prices or is it better to rely on the judgements of policy makers? Time will tell, but most of the time, the markets cannot be manipulated for too long.

Money illusion

Most people suffer from money illusion as they typically focus at nominal instead of real prices. Steady nominal values get eroded by inflation. A 7% inflation rate will halve the real value of money in about 10 years' time. At 2.5%, about 25% of value gets lost in the same time span. As financial market professionals, we all look at equity market indices. We chart them over long periods and compare past levels with those of today. Especially if the dividend yield is excluded, we focus on a purely nominal chart. Mid 2015, the S&P500 index traded at about 20% above its earlier peak level of

1500 in 2000. However, adjusted for US inflation over those 15 years it actually trades at the same level. In real terms, the price of the US equity market as measured by the S&P500 has not risen at all. Money illusion can also be easily exploited by governments. For instance, by not adjusting tax brackets, the income tax rises every year as the real level at which higher taxes get paid decreases every year. There has never been a protest or demonstration in the streets to object to this type of policy, as the majority of people simply won't notice.

Inflation and asset allocation

Building a portfolio that stands up to both deflationary and inflationary forces is a challenge. Most asset allocators do not want to be dependent on having the right inflation forecast as predicting the inflation regime 5 years from now is close to impossible. On the other hand, the outcome in its extreme is either inflation or deflation and a hedge against either one of them is directional in nature. The combination of a duration and an inflation hedge simply results in costs only, as the levered positions offset each other. Obviously, this should be avoided.

Index linked bonds offer insurance against unexpected inflation. However, two opposing factors largely explain the returns of ILB's: inflation and duration exposure. The relationship between inflation and real yields is not always clear. In a deflationary recession, central banks steer real yields into negative territory, leading to positive ILB returns based on duration, but the inflation protection component generates negative returns. If inflation rises and central banks start to fight it, they will push the real yield up. This will imply a very negative return on ILB's due to the duration impact, which will overwhelm the inflation protection component of the return. As a result, from an absolute return perspective, ILB's as inflation protection instruments make very little sense. Therefore, ILB's should not be part of an asset mix.

There are many other assets that are assumed to protect against inflation. **Commodities** were broadly adopted around 2000 as an inflation hedge with a positive expected return. Back tests incorporating the 1970's have showed a negative correlation of commodities to both equities and bonds. In that period, when oil and other commodities rose, inflation edged up, leading to a fast rise in bond yields and a hit to equities as profits got squeezed and economies stagnated. The expected return on commodities was broken down in the spot return, backwardation and a cash yield, which were all assumed to be positive over the long haul. However, money market rates came down to ever lower levels, backwardation got eroded by the massive entry of institutional money and spot prices started to hesitate after the super cycle of 2001 to 2008, caused by the rise of China and the preceding underinvestment in manufacturing and infrastructure capacity. Also, the correlation of commodities with bonds and equities started to change. Rising commodities since 2000 were mainly seen as a sign of solid world economic growth, underpinning equity markets,

which as a result led to a positive correlation between equities and commodities. After 2008, rising commodity prices were also seen as a threat to global growth, making the chance of prolonged stagnation higher. Central banks, therefore, changed their reaction function and responded no longer to commodity price increases as an upwards threat to inflation, but much more as a reason to stay dovish for longer. This changed the correlation between commodities and bonds. The low cash return, the loss of backwardation rewards and the change in correlation has reduced the attractiveness and popularity of commodities as an asset class.

Inflation linked bonds have little to no ability to offer inflation protection as its duration counteracts its inflation insurance

Gold is often seen as a reliable hedge against inflation, but I seriously doubt that. Gold has functioned as the monetary base over prolonged times in history, but we now live in a regime of fiat money. Gold has no yield, storage of physical gold comes at a cost and futures are normally in contango. Gold is still held by central banks, but officially it does not fulfill a role anymore. Gold can act as a protection to fear. During the deflation shock of 2007 and 2008, gold rose considerably, but not due to inflation fear. A main reason is that gold is an alternative to cash, especially when the yield on cash is low, as the relative cost of holding gold improves. Gold can be attractive as a defensive asset class, but the link to inflation is questionable. On top of that, it exhibits an equity-like volatility, which contradicts its safe haven perception.

Another form of inflation protection can be found in assets where the cash flow generation has a direct link to inflation. **Real estate** is popular as rents are often indexed to CPI, **infrastructure** such as toll roads often get tariffs adjusted automatically or **index linked bonds**. However, again practical experience differs significantly from theory. Real estate proves to be very cyclical and higher inflation and mortgage rates will typically bite into affordability and cause lower occupancy and falling real estate prices. In a recession, traffic slows down and toll income will fall due to lower volume. Regarding corporate ILB's, one should expect a recession to increase the credit risk of those bonds, which counteracts the gains made from the inflation protection component. Real estate and infrastructure are relatively illiquid asset classes and illiquidity is very cyclical by nature. This will greatly outweigh the benefit of cash flows that are linked to CPI.

Correlations to inflation depend on the time horizon considered. The longer the horizon, the more likely it becomes that equities and real assets are good hedges against inflation as the underlying cash flows will ultimately keep up with a higher price level. The source of inflation also determines

which hedge is effective. Commodities are seen as a good hedge, but it will completely fail if, for example, inflation rises due to VAT hikes.

From a strategic perspective, inflation/deflation only matters if it moves to the tails, so well below 0% or well above 5%. All variations within that range are more tactical in nature. Only outside of this range, deflation and inflation can get embedded and spiral out of control, thereby eroding investor confidence. Following a deflation bust, most people will want to protect themselves against deflation and almost no-one will buy inflation insurance, while obviously the lower the inflation rate, the higher the probability of upside surprises. Market participants tend to anchor and extrapolate. In 1982 everyone feared inflation, while today everyone fears deflation.

Overlay strategies

An assessment of asset classes does not exhaust all possibilities to achieve more robustness to tail outcomes in inflation. A globally diversified asset mix for instance will have sizeable currency exposures and a decision to hedge or not can considerably change the sensitivity of an asset mix to inflation. After a commodity boom, commodity based currencies, like those of Canada, Australia, New Zealand or emerging currencies like those of Brazil, Russia or South Africa will most likely have become very expensive. The commodity tailwind will have boosted economic performance, which combined with rising yields will have ignited the currency carry trade to uncomfortable valuation levels. A recession, commodity bust or emerging market cool down will send these currencies lower, implying hedging will prevent losses. Vice versa, being an investor based in these currency areas, the absence of a hedge will help.

The sum of a deflation and an inflation hedge is transaction costs

If protection against deflation is needed, one should close the duration gap between assets and liabilities, especially if a regulator imposes a nominal framework on a pension fund and liabilities are marked-to-market. Falling bond yields will then boost the present value of future liabilities and insulation can only be achieved through a duration overlay. In an asset only world, running leveraged bond exposure will protect the portfolio against a deflation bust. For this reason, risk parity strategies are amongst today's survivors.

For a pension fund that marks to market its liabilities, the less obvious, but much better, protection against inflation is to lower or completely remove the duration hedge. Rising inflation and yields will immediately translate into a lower present value of liabilities, thereby lifting or stabilizing the funding ratio. There will be no other strategy that will offset the impact of higher inflation more than this, especially given the starting point where we are today,

with nominal and real yields near all-time lows. For the same reason, risk parity strategies are likely to suffer, as they are geared towards a deflation outcome.

Another powerful, but more indirect way, to manage inflation sensitivity is through dynamically adding an inflation swap overlay to the portfolio. However, as touched upon before, combining a duration and inflation swap overlay does not make sense, as the two are almost complete opposites.

It would even be more fruitful to recognize that one does not need inflation and deflation protection all the time. One would like to protect against a tail event, for instance inflation below 0% or above 5%, as is where it starts to hurt growth dynamics and a global assets. Only then profits get squeezed and central banks will pursue a more aggressive stance. Why protect yourself against inflation and pay insurance premiums over the full spectrum? Currently we are in an environment where global policy makers fiercely try to bring inflation back to life. If they succeed, one could argue that a rise of inflation towards approximately 4% should be welcomed by asset allocators. This is what is called reflation, it is getting rid of deflation scare; it would be good for most asset classes like equities, real estate and many other alternative assets. It would also help central banks to normalize monetary policy. A bear market in safe haven bonds would be very likely, but after the repricing, bonds would represent much more value. This again brings forward the important take-away that safe haven bonds at today's valuation are the most vulnerable asset class when inflation returns.

Summary and Conclusions

Inflation plays a vital role in both the real economy and in financial markets. Central banks have defined it as their prime target. There are many things unknown about inflation. For instance: what is the best definition; what are the root causes; are there good and bad forms of inflation and deflation; and what is the optimal inflation rate? How will the rise of the "weightless economy" alter more traditional assessments of CPI?

Inflation drives bond as well as equity returns and through Purchasing Power Parity, currencies get anchored by it. In its extremes, inflation or deflation can start to dominate both the economy and markets and fear for these extremes has triggered asset allocators to pay a lot of attention to this phenomenon, mostly to find out that there are few possibilities to manage the risk of deflation or inflation.

In my opinion, the impact of inflation on a long-term portfolio is not to be feared; only in the tails does it really start to matter. This calls for a dynamic approach to inflation and deflation protection. The inflation puzzle is made of many pieces and exploring this puzzle from different perspectives is absolutely worthwhile. ■

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