May 2015

# Negative Interest Rates

## Unprecedented Experiment by Central Banks

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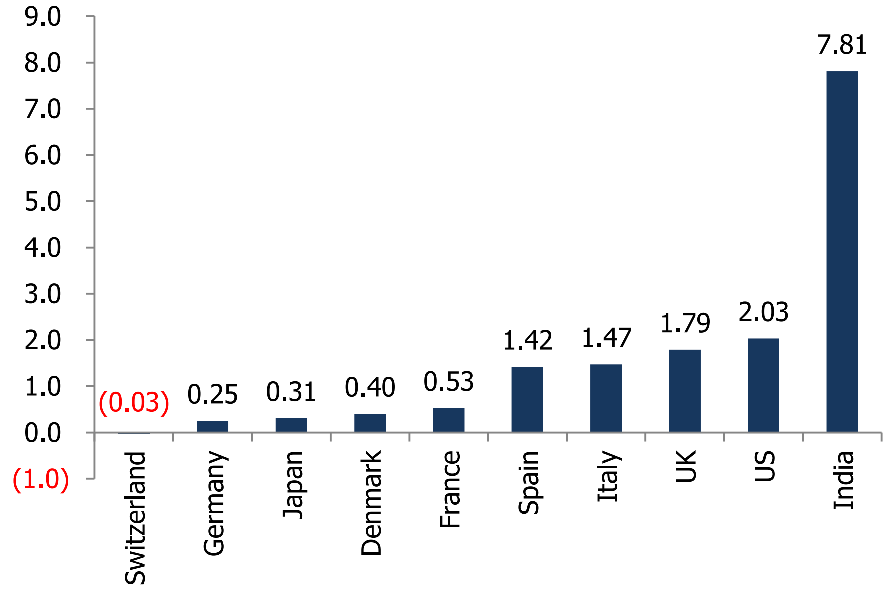
Interest rates in the developed economies, both short-term and long-term, have been remarkably low in the past few years. While the interest rates for 10-year US government bond - the widely used benchmark, stands at 2%; interest rates for other countries especially Germany and Japan are just above zero. Switzerland recently issued its 10-yr sovereign bond at a negative rate which incidentally was oversubscribed! So did Germany with its five-year debt[1]. Though low yields (slightly above 0%) have been persistent for the past few years, the possibility of negative yields weren't conceived by investors as it doesn't make sense from a risk perspective.

**Figure 1: Nominal 10-yr yields for sovereign bonds (in %)**




Source: Reuters Eikon, Data as of April 29, 2015

**Table 1: Implication for Asset Class**

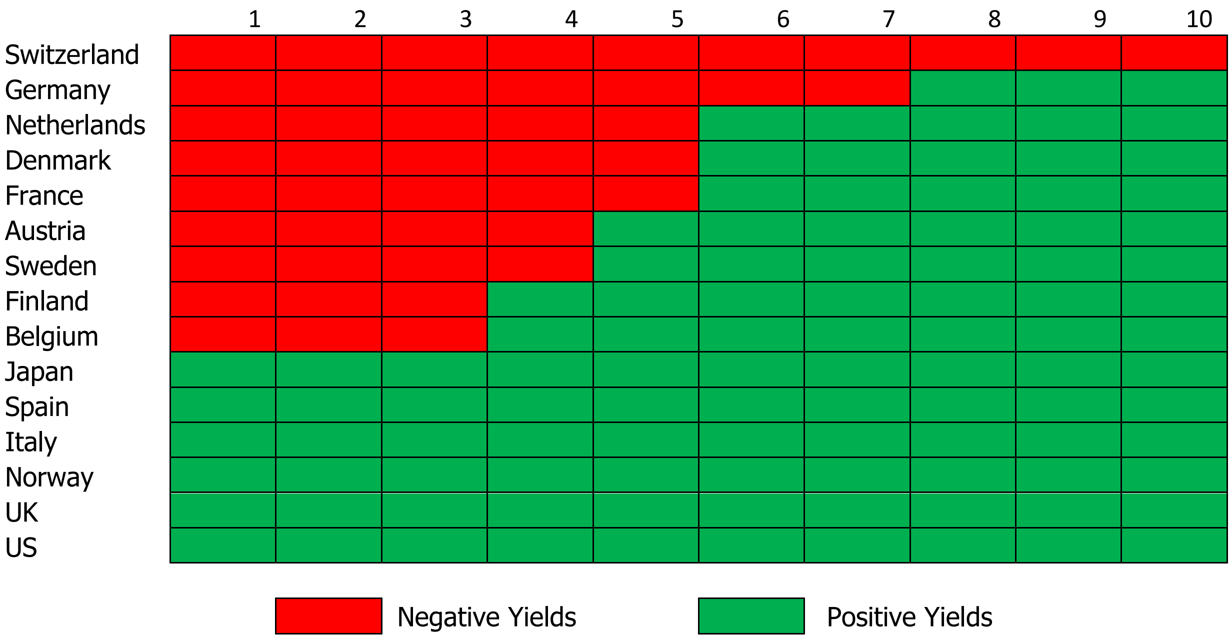
| Asset Class | Implications |
|---|---|
| Fixed Income | Bond rally to continue; US treasuries with positive yields would be attractive for European & Japan investors (Search for Yields) |
| Equities | Suppressed Equity risk premiums and enhanced risk seeking behavior to sustain equity rally. Dividend yielding stocks to command premium valuations. |
| Currency | Impeding rate hike by U.S fed to make USD stronger against other currencies esp. Euro & Japanese Yen as they continue with QE measures. |
| Commodities | Stronger USD to negatively impact commodities. Low interest rates and negative yields could negatively impact commodities by lowering the "cost-of-carry" and "collateral yield". |

Source: Markaz Research

[1] Financial Times

The phenomenon of yield turning negative in the case of Switzerland isn't a minor blip/aberration but reflection of the central bank's monetary experiments in their futile attempt (at least, so far) to revive their economic growth. The trend is more visible in the shorter term bond segment where currently amongst the 2-yr & 3-yr bonds; the yields are negative for almost half of the developed economies (see below figure).

**Figure 2: Sovereign Bond Yields across Maturities (Years)**




Source: BlackRock, Reuters; Data as of March 31, 2015

For investors in Eurozone where the risk of deflation is high, negative nominal returns make sense as long as inflation is lesser than the negative yields.

In order to better understand how negative yielding bonds command sizeable interest from the investing community, we need to distinguish between nominal rate of return and real rate of return. For investors in Eurozone where the risk of deflation is high, negative nominal returns make sense as long as inflation is lesser than the negative yields. For instance, a nominal yield of -2% would still provide a real return of 1% for its investors, if the inflation is -3%.

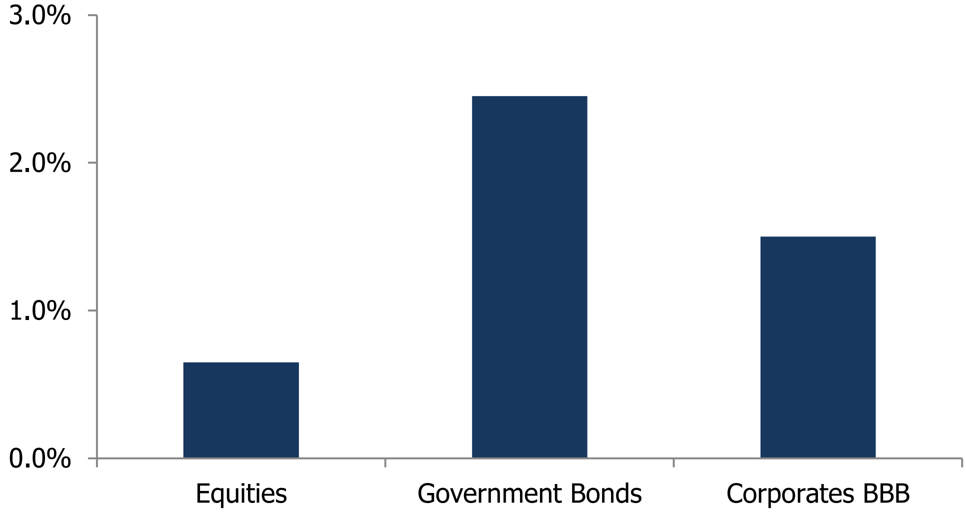
One of the reasons being put forth include mismatch in demand and supply of bonds. Consecutive quantitative easing measures have led the central banks in developed economies to be big purchasers of government bonds. It is estimated that they account for over USD 3.0 trillion of bond purchases per year, while the issuance is pegged at USD 2.5 trillion per year[2].

Assuming the current yields have factored in the future economic outcome, we could expect a prolonged period of deflation since only in a deflationary scenario would receiving lower nominal money than now be profitable. It is in this context, that investors find bonds to be an attractive asset class. As the coupon payments are fixed in nominal terms, they are amongst the most favoured asset class during periods of deflation. The argument is reinforced by the Japanese scenario where bonds outperformed other asset class in the past 15 years.

[2] PIMCO

The current 3-month interest rates of leading economies such as Euro region, Japan and Switzerland all are negative.

**Figure 3: Asset Class performance during deflation in Japan (1997-2013)**




Source: Unigestion, Bloomberg

### Why would anyone pay to lend their money?

The premise of zero lower bound for interest rates generally stems from the observation that no one would be willing to pay to lend their money as the alternative of holding it in the form of cash would prove attractive, even if it yields nothing.

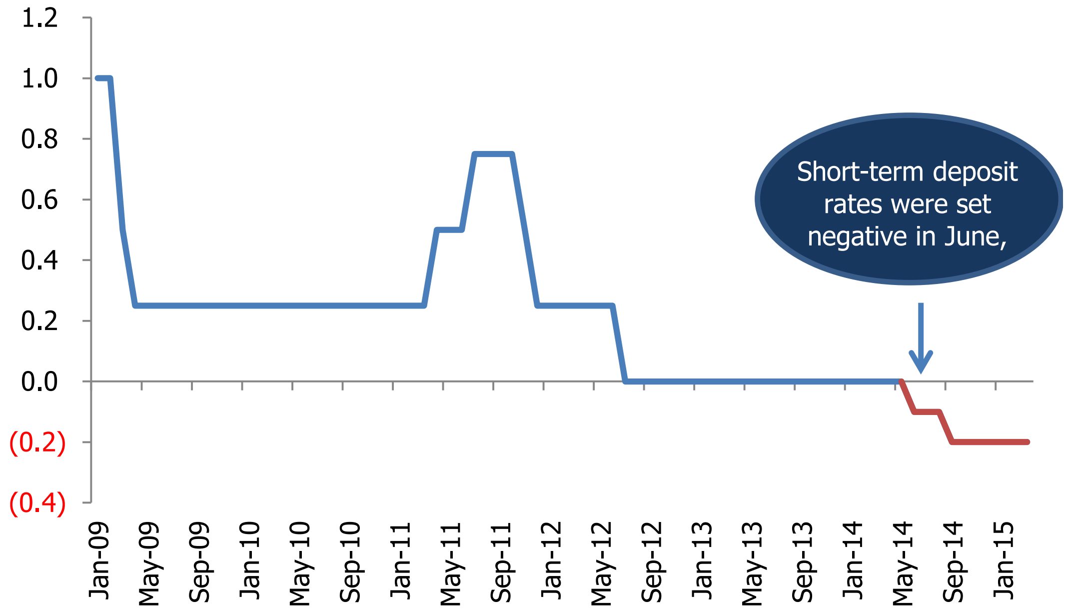
In GCC economies, short-term interest rates are all low by historical standards - they are mostly near zero but positive.

While the initial thought of holding cash instead of investing in instruments that yields negative returns is logical, practical considerations including handling large swathes of money for all payment purposes necessitates a safer, efficient and a convenient alternative such as savings and checking account. Similarly, institutions prefer short-term instruments such as T-bills and other money market instruments even if they pay a negative rate for the simple reason that it provides a secured and convenient alternatives than having to handle colossal amount of currency notes.

However, much to the chagrin of depositors, in the recent year's central banks – particularly in Europe, have slashed their deposit rates below zero and had started charging banks when they deposit their surplus reserve money with it. For instance in June, 2014 European Central Bank (ECB) paid a negative 0.1% (-0.1%) interest rate for the money deposited with it by the banks. That is the banks had to pay the ECB to deposit their money in its vaults. The current 3-month interest rates of leading economies such as Euro region, Japan and Switzerland all yield a negative return. While that of GCC economies are all low by historical standards, they are mostly near zero but positive.

Negative interest rates have led to interesting scenarios and situations that were previously unheard off.

**Figure 4: ECB Marginal Deposit Rates**




Source: ECB, Markaz Research

It's not just the European Central Bank which has set the deposit rate negative; other central banks whose rates are negative include Swiss National Bank (SNB), Danish National Bank (DNB) and Swedish Riksbank (SR).

**Table 2: Central banks which has retorted to Negative Rates**

| Region/Country | Central Bank | Liquidity absorption rate | Rationale |
|---|---|---|---|
| Eurozone | ECB | -0.20% | To counter deflation |
| Switzerland | SNB | -0.75% | To prevent currency appreciation |
| Denmark | DNB | -0.75% | To prevent currency appreciation |
| Sweden | Swedish Riksbank | -0.20% | To counter deflation |

Source: Goldman Sachs

Negative interest rates have led to interesting scenarios and situations that were previously unheard off. For the first time, Nordea Kredit (Danish mortgage bank) issued a mortgage with negative interest rate. The rates are in low negatives (-0.3% to -0.4%) that the borrower incurs payment only due to the fee charged on top of regular interest payments[3].

## Why have they been slashing the interest rates?

Interest rate cuts have been the widely used monetary policy tool by central bankers to revive aggregate demand in the economy at times of recession. In the last 40years, U.S has slid into recession four times. Consequent action by the central bank, U.S Fed to reduce interest rates can be seen in the below chart.

[3] Wall Street Journal

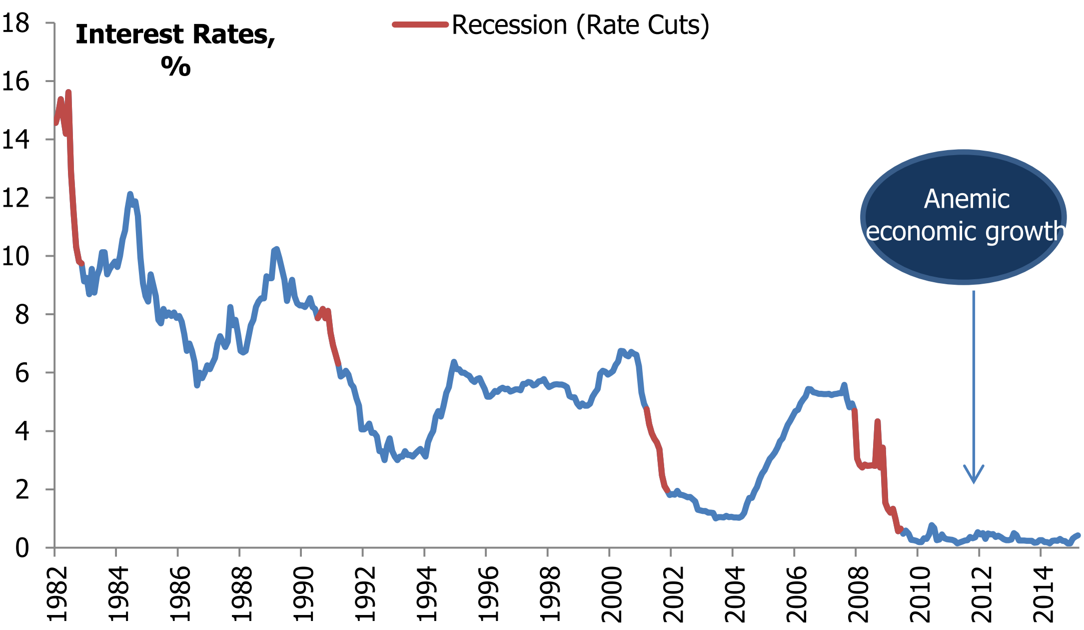
**Table 3: Occurrence of U.S Recessions**

| Start Date | End Date | Duration (in months) |
|---|---|---|
| July, 1981 | November, 1982 | 16 |
| July, 1990 | March, 1991 | 8 |
| March, 2001 | November, 2001 | 8 |
| December, 2007 | June, 2009 | 18 |

Source: National Bureau of Economic Research

The traditional lever of reducing interest rates hasn't helped in the expansion of economy.

**Figure 5: Interest Rate on 3-month deposit rates in U.S**




Source: Reuters

Central banks may also resort to negative interest rates to limit the appreciation of their national currencies.

However, in the current scenario, the traditional lever of reducing interest rates hasn't helped in the expansion of economy despite the interest rates being held close to zero for a considerable amount of time. This has led the central bankers to implement unconventional measures such as large-scale Quantitative Easing (QE) and more recently, negative interest rates - to incentivize banks to lend more to businesses and consumers. Though the premise looks interesting, the event is unprecedented in the course of financial history and no one knows if it will revive the economy.

The floor for interest rates would be set by the costs and benefits of hoarding currency

Alternatively, central banks may also resort to negative interest rates to limit the appreciation of their national currencies, fuelled by surging inflow of "hot money", as was the case in Switzerland and Denmark.

## How far could interest rates go below?

As we have argued earlier, the floor for interest rates would be set by the costs and benefits of hoarding currency. From a theoretical perspective, holding cash presents an attractive alternative to investing them in negative yielding assets. However, the practical considerations of holding and transacting in larger volumes of currency add to significant administrative and storage costs. Thus, the act of currency hoarding is currently negated by this expense. The current negative rates prevalent in Denmark and the subsequent smooth functioning of the monetary and banking systems have led one to believe that the cost is much higher than the -0.75%. However, how much lower could the interest rate go before the scales are tilted, in favor of currency hoarding, is not known with certainty.

The yields play out only if the investors hold the bonds till maturity.

## How could investors make money out of negative yielding bonds?

The yields play out only if the investors hold the bonds till maturity. Astute investors with short-term motivations could buy these bonds and utilize the opportunities provided by the start of ECB QE, which entails purchase of bonds, to liquidate them. This way they could make, albeit small, gains.

Investors with strong views on currency appreciation could trade by taking a position on sovereign bonds. The minimal loss from the bonds, due to negative yields, could be offset by gains from expected currency appreciation. For instance, if one expects Swiss franc to appreciate by 10% in the coming days, they could purchase Swiss bonds with small negative yields and still make profits.

Currently, a third of European sovereign bond markets have negative yields.

## Implications of Negative Interest Rates

Loss aversion theory in behavioral finance states that when an investor is faced with the prospect of certain minimal loss, he/she is bound to seek higher risk investments even if the expected returns are lower. Considered in this context, the prospect of negative returns on funds parked with the central bank would encourage banks to assume higher risk than they normally would do and take on more bonds and equities into their balance sheet. This could lead to investor complacency and asset valuations could become stretched across asset classes.

*Bond Markets*

Currently, a third of European sovereign bond markets have negative yields[4]. The negative nominal yields of the bonds could provide real returns, if significant price declines are expected due to deflationary pressures in the economy. However, if the real yields are close to zero or negative in Euro Zone, investors in search for yield would start seeking alternative options including accumulating other sovereign bonds with positive yields while shunning negative yielding European sovereign bonds.

10yr U.S treasuries which have a positive yield of 1.91%[1] would appear lucrative to European Investors

In this context, 10yr U.S treasuries which have a positive yield of 1.91%[5] would appear lucrative to European Investors. Significant capital in international markets due to continued monetary stimulus in the form of QE programs by Bank of Japan and ECB would start chasing yields and this could push U.S treasury bonds higher and yields lower.

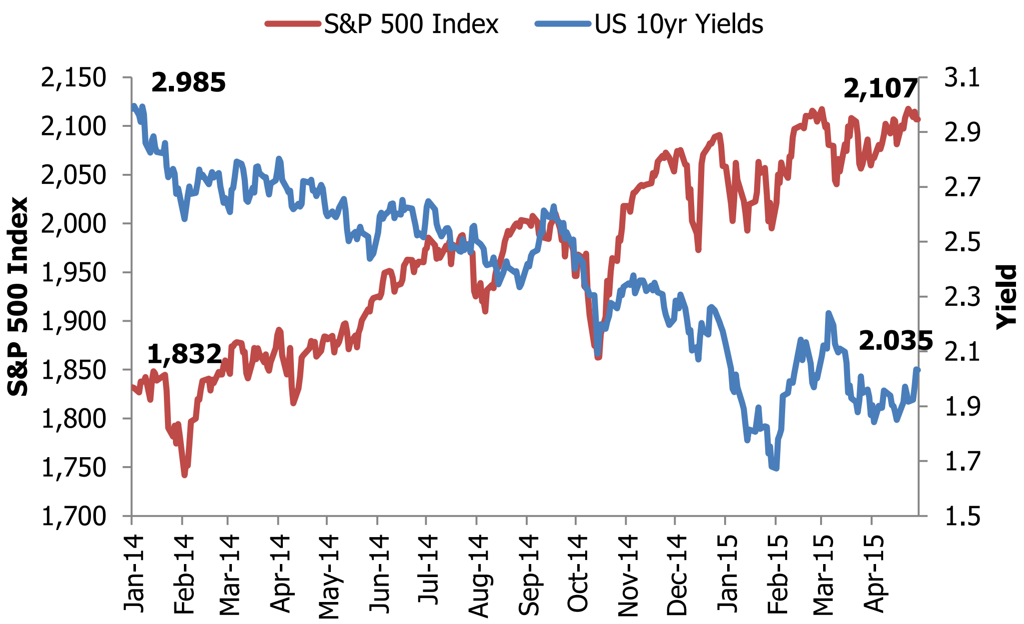
*Equities*

[4] Black Rock, April 2015
[5] Data as of April 26, 2015

Unconventional monetary policies have acted in favor of equities by driving down the Equity Risk Premiums (ERP).

Equity valuation is primarily dependent on earnings and the discount rate. Discount rate can be visualized like the gravitational force which weighs down on future earnings while calculating intrinsic value. Unconventional monetary policies have acted in favor of equities by lowering the risk free rate as evidenced by the lower yields on sovereign bonds and by driving down the Equity Risk Premiums (ERP). Compressed ERP along with lower risk free rate has effectively lowered the discount rate. Thus, earnings get discounted at lower rates or the value of equities becomes higher than usual.

**Figure 6: Falling Bond Yields, Rising Stocks**




Source: Reuters

Negative interest rates on short-term instruments would lead investors to tactically change their positions in favor of equities, to meet their return requirements.

Lower yields offered by the bonds and negative interest rates on short-term instruments would lead investors to tactically change their positions in favor of equities, to meet their return requirements. Having said this, high dividend yielding stocks would be considered more favorably by investors, as they could provide with stable income in the form of dividends mimicking bond coupon rates. They could command a premium over their historical valuations amidst the prevailing negative interest rate scenario.

*Currencies & Commodities*

Cross border flows into US markets due to attractive positive yields would make the dollar stronger against other currencies. Negative interest rates and the start of QE in ECB, has already led US dollar to appreciate by 11% (YTD) against Euro. US dollar has been strong against other major currencies too. Such strong US dollar would negatively impact the commodity prices, as most commodities trade in USD in the global markets.

*Implication for Investors*

Currently, negative interest rates are applicable for commercial banks which deposit their excess reserves above requirement with central bank. The impact hasn't yet flown into money markets/commercial lending. However, given the fact that wholesale funding costs typically track bank rates/repo rates (the rates which central banks charge for banks) negative rates may soon creep into commercial banking system wherein the depositors are paid negative rates or rather charged for their deposits in banks.

**Table 4: Implication for Asset Class**

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Source: Markaz Research

## Negative Interest Rates – A New World Order?

Sustained period of negative rates would lead to questioning the benefits of safety and convenience of banking system.

A sustained period of negative rates would lead to questioning the benefits of safety and convenience of banking system. It may lead to creation of innovative products and innovative procedures including early payments and deferred collections. However to avoid venturing into unchartered waters, it is imperative that the world leaders and central bankers act cohesively to devise policies to kick-start growth. As argued by the IMF, its time big ticket public infrastructure investments are made, especially in emerging and developed economies which are grappled with infrastructure bottlenecks, to boost aggregate demand. The prevailing low cost of funds and higher investment efficiency of public infrastructure (marginal spending is not wasted)[6] reinforce such thought.

[6] IMF

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