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When rates take off...

Corporate finance implications of rapidly rising interest rates

J.P.Morgan

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1. When rates rise

Economists, corporate decision-makers and investors have been expecting rising interest rates for the last several years. Over the last three years, for example, economists had forecast 10-year U.S. Treasury rates to be 70 bps, 160 bps and 80 bps higher than the actual rate at the end of 2010, 2011 and 2012 respectively. Today, economists are once again forecasting the 10-year interest rate to rise from current levels to 2.25% at the end of the year.[1]

Many corporate decision-makers focus on interest rate forecasts or expectations. Our experience suggests, however, that expectations may not be useful in helping executives make strategic decisions. **Future rates are likely to be lower than expectations,** as they have been for the last three years, **or materially higher, as is often the case following interest rate troughs.** Accordingly, boards and other decision-makers should prepare for both the "low for long" and "abrupt spike" scenarios rather than focusing on interest rate forecasts, which will invariably be between these two bookends. To emphasize the lack of information contained in an average, statisticians at times state that "**one can drown in an average of an inch of water."**

To understand the implications of a potential spike in interest rates, we examined 13 rate increases following interest rate troughs since 1962 (Figure 1). We explored in detail six relatively recent cases of significant and rapid rate increases in 1983, 1986, 1993, 1998, 2003 and 2008 based on the largest interest rate rises in a 12-month period. **The key takeaways of our analysis are:**

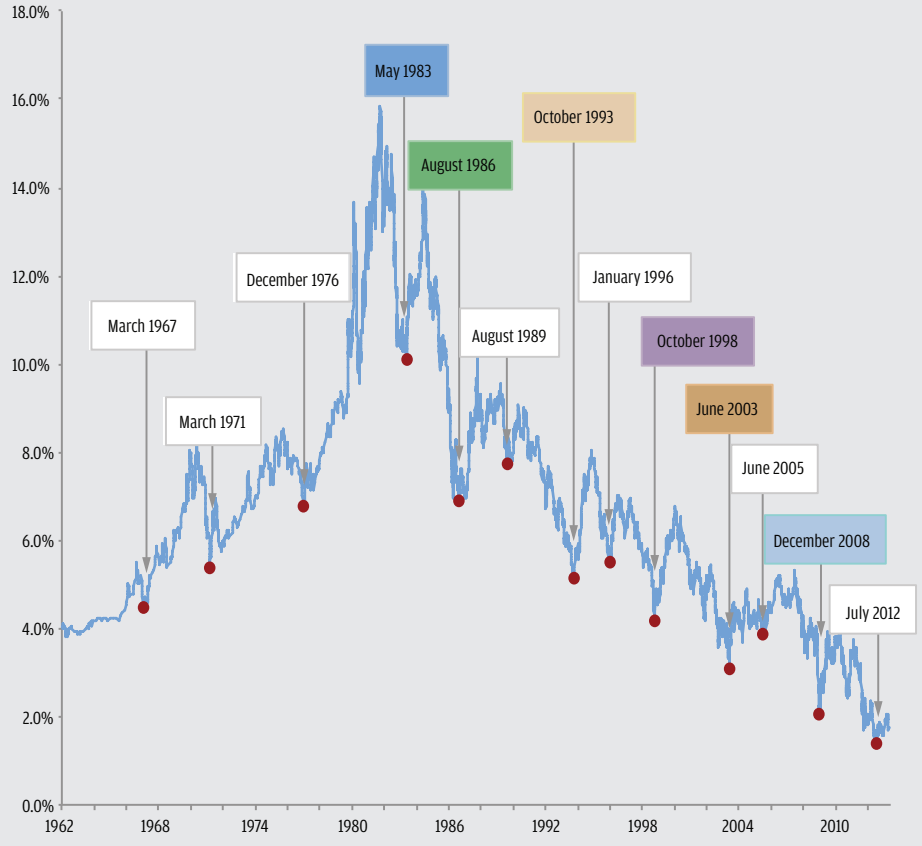
1. **When rates rise, the jumps can be significant.** Rates have jumped more than 270 bps in one year following previous troughs and it has taken as little as seven months for rates to rise 200 bps
2. **Rising rates are not necessarily bad news.** In many instances, interest rate rises corresponded with economic growth, multiple expansions in anticipation of higher corporate earnings, lower risk premia and equity market rallies. Pension and healthcare liabilities, which have garnered more attention in recent years, should also decline in value
3. Material and unexpected **interest rate jumps will hurt some firms and industries,** especially industries that are "long" fixed income instruments, firms whose products are stimulated by low interest rates and firms whose shares are primarily traded on a (dividend) yield basis. Recently, however, high dividend paying equity securities have been less correlated with rates than might be expected, suggesting that even these firms may not be as negatively impacted by higher interest rates
4. **None of the large interest rate increases were identical** in their magnitude, speed, market expectations or their effect on corporate finance. Moreover, large differences exist between today's current low-rate environment and previous interest rate troughs that could lead some to speculate that interest rate rises could be even more pronounced this time around. These differences include very low to negative real rates and unprecedented global bank quantitative easing

[1] Note: Henceforth, unless otherwise noted, any reference to "rates" in this report refers to the 10-year U.S. Treasury rate

Figure 1

Historical interest rate troughs and rises

10-year Treasury rates since 1962 with interest rate troughs



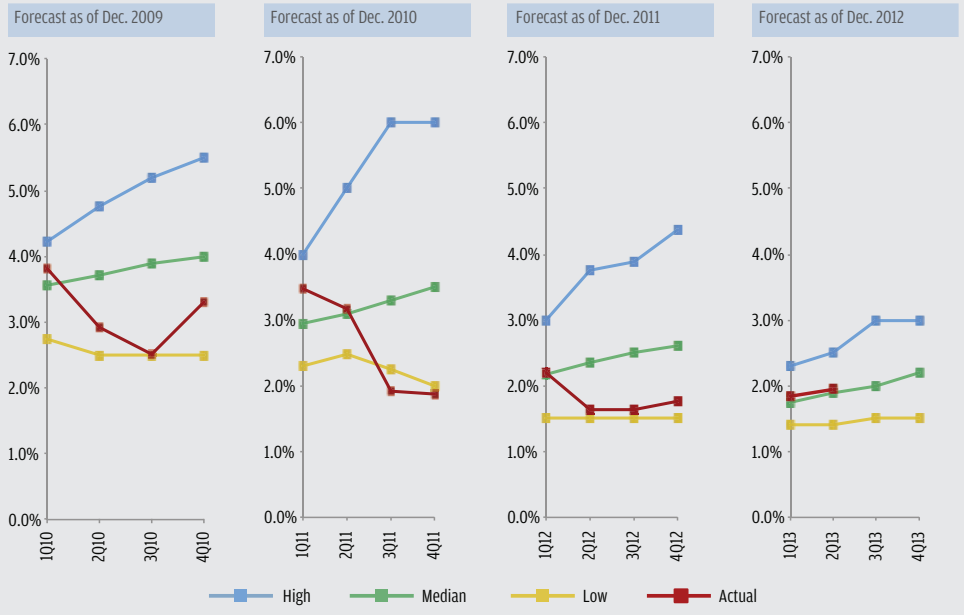
Source: Bloomberg
Note: Interest rate troughs defined as lowest interest rate in one year preceding and one year post. Highlighted dates indicate troughs examined in greater detail over the course of this report

2. Expectations of large interest rate increases

Most decision-makers incorporate future interest rates in their financial plans. To develop these models, they typically rely on interest rate forecasts from economists, forward rates or other market indicators. Actual Treasury rates, however, have typically ended close to, or even below, the lowest rate forecasted by Wall Street economists in recent years (Figure 2).

Figure 2

Economists have forecast higher rates for the last four years



Source: Bloomberg
Note: 2Q13 based on 1.93% as of 5/15/13

The consensus forecast represents the collective knowledge and insights of more than 60 professional interest rate forecasters and is likely one of the better gauges of our expectations about future rates. We believe, however, that scenarios capturing possible extremes, namely that rates remain low for long or that they spike materially, are more useful to understand the implications of future rates for different financial policies.

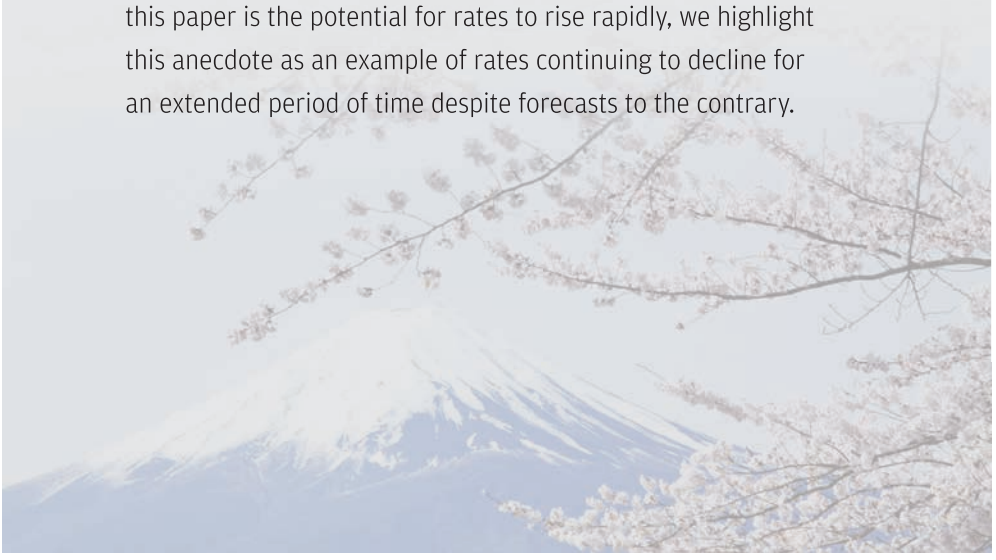
To gauge possible "interest rate spike" scenarios, one could examine the outlying economist forecast. These outliers were 5.5%, 6.0% and 4.4% in 2010, 2011 and 2012 respectively. But for 2013 even the highest forecast is only 3.0%. This does not mean that there is no chance that rates could be higher than 3.0% at the end of the year, as an economist's forecast can be based on the probability weighted average of a wide range of potential outcomes.

EXECUTIVE TAKEAWAY

For firms that try to understand the impact of future interest rates on their financial policies, interest rate expectations are not as useful as scenarios that assume extremes such as low rates for long or rates that rise suddenly and steeply.

A Japanese anecdote

At the beginning of 1997, 10-year Japan Government Bond rates were 2.8% and economists were forecasting rates to rise to 3% by the end of the year thanks to rising economic growth. By the year's close, rates were 1.9%. The rates in Japan have continued their decline, dipping below 0.6% this year. While the focus of this paper is the potential for rates to rise rapidly, we highlight this anecdote as an example of rates continuing to decline for an extended period of time despite forecasts to the contrary.



3. Previous interest rate spikes: The historic experience

To obtain some useful data points on previous rate spikes, we looked at daily interest rates since 1962 and identified 13 troughs. These troughs are defined as the lowest interest rate in the period one year preceding and one year post. We find that **when rates rise, the increase can be very material:**

- 10-year Treasury rates jumped by 274 basis points in one year following a trough (1983)
- 10-year Treasury rates jumped by 197 basis points in six months following a trough (1993)
- It has taken as little as one month for rates to jump 100 basis points (2003)
- It has taken as little as seven months for rates to rise 200 basis points (1993)

Figure 3

Record increases in interest rates from interest rate troughs

Largest increase in 6 months	Largest increase in 12 months
197 bps October 1993	**274 bps** May 1983
160 bps May 1983	**244 bps** October 1993
148 bps December 2008	**217 bps** August 1986

Fastest time to 100 bps increase	Fastest time to 200 bps increase
1 month June 2003	**7 months** October 1993
2 months March 1971, December 1976 and May 1983	**10 months** May 1983
3 months January 1996	**12 months** August 1986

Source: J.P. Morgan

EXECUTIVE TAKEAWAY

When interest rates rise, the increases can be substantial. Rates rose by as much as 274 bps in 12 months and by as much as 200 bps in seven months.

4. Catalysts that could lead to even higher spikes than the historical experience

Evaluating potential interest rate scenarios is valuable to the extent the past may offer some indication of what is yet to come. In some ways, however, the current low-rate environment is different from previous low-rate environments. Some speculate that these differences could serve as catalysts for rates spikes that are beyond our historical experience.

Negative real rates: In past low-rate environments 10-year Treasury bonds have typically preserved capital in real terms. Since late 2011, however, long-term inflation expectations have exceeded the 10-year Treasury rate (Figure 4). This suggests investors in 10-year Treasury bonds are willing to accept a negative real return. What is driving these negative real rates?

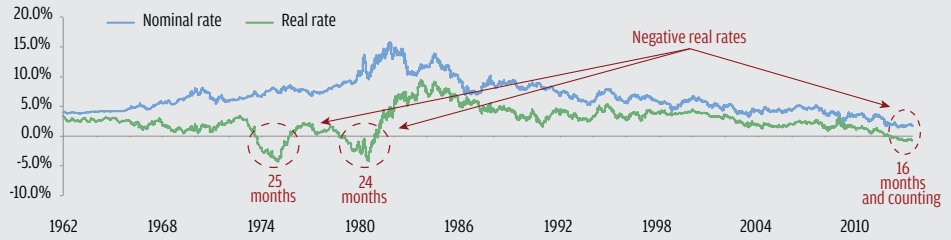
Unparalleled global central bank intervention: Perhaps the most significant factor making the current low-rate environment different from past environments, and a driver of the negative real rates, is the unprecedented intervention of not only the U.S. Federal Reserve (Fed), but also the European Central Bank (ECB), the Bank of Japan (BoJ) and others around the world. Asset purchase programs such as the various Quantitative Easing (QE) programs launched by the Fed have created a tremendous amount of buying pressure and have driven interest rates to new lows.

The magnitude and impact of these programs is hard to overstate: The Fed's QE program has recently targeted $85bn+ per month in purchases. To put this purchase amount in perspective, bond issuance of corporate debt in the U.S. (both investment grade and high yield) averaged about $110bn per month in 2012. The precise impact of these programs is difficult to discern. Even less clear is how and when these asset purchase programs will wind down and end. Regardless, some fear that when global central banks do begin to end large-scale asset purchases, interest rates may spike more than what we have experienced.

Figure 4

What happens to nominal rates when real rates return to "normal"?

Interest rates vs. inflation



Source: Bloomberg, Federal Reserve, J.P. Morgan
Note: Real rates defined as the difference between the 10-year Treasury rate and expected inflation according to the Federal Reserve from 1978 to present; prior period expected inflation is based on realized inflation

EXECUTIVE TAKEAWAY

Some believe that an interest rate increase could be particularly pronounced because of large differences between this interest rate trough and previous ones we have experienced. The key differences are unprecedented global central bank quantitative easing and resulting low to negative real rates.

5. Lessons from six case studies

Figure 5

Lessons from six case studies

Change in key indicators one year after interest rate trough

	1-year Δ rates	Inflation	Real GDP	Unemployment	BBB spread	Equity risk premium	S&P 500	P/E	Fed Funds	Expected?
1983	2.7%	↑	↑	↓	-	-	↓	↓	↑	✗
1986	2.2%	↑	↑	↓	-	-	↑	↑	↑	✗
1993	2.4%	↓	↑	↓	-9	-	←→	↓	↑	✗
1998	1.9%	↑	↑	↓	+7	↓	↑	↑	↑	✓
2003	1.8%	↑	↑	↓	-22	↓	↑	↑	↑	✓
2008	1.7%	↑	↓	↑	-264	↓	↑	↑	←→	✗

Source: J.P. Morgan; Bloomberg; FactSet; S&P; "Irrational Exuberance" Princeton University Press; Bureau of Economic Analysis; Bureau of Labor Statistics, University of Michigan
Note: Based on 10-year Treasury rates

Earlier in this report, we identified 13 precedents of interest rate troughs. Out of these, we focus on six recent cases with a significant and abrupt spike in rates. Figure 5 summarizes the macroeconomic and capital market trends that accompanied the jump in rates. While every case is slightly different, there are several recurring themes:

Higher rates have typically coincided with robust economic growth, lower unemployment rates and tighter risk premia in both debt and equity markets, particularly in instances when the market had been anticipating relief to higher inflation expectations via increases in the target Fed Funds rate (1998, 2003). These cases of "realized expectations" were accompanied by a lower equity risk premium, higher valuations and subsequently higher equity prices.

But conditions in the equity markets do not always strengthen in tandem with the rise in interest rates: In 1983 and 1993, **when the sudden increase in rates caught companies and investors off guard, equity prices and valuations dropped** despite improved economic conditions. The period following the 1993 trough was also the only of our six "rapid rise cases" in which inflation fell despite the rapidly rising rates.

Notable exception: The 2008 spike in Treasury rates was followed by negative GDP growth and lower employment, which in turn led to a continued zero rate policy by the Fed and a subsequent fall in rates. Rates have continued to remain low as quantitative easing programs across the globe continue to pump cash into the market in the hopes of bringing economic growth and employment levels up to target levels. The Fed has kept the Fed Funds rate at its all-time low for almost five years now, which begs the question: How will markets react when central banks finally raise the bar…and how can companies develop financial policies in anticipation of a rapid rate increase?

EXECUTIVE TAKEAWAY

From six previous rate increases in 1983, 1986, 1993, 1998, 2003 and 2008, we learn that higher rates are not necessarily bad news. In fact, they often coincided with higher economic growth, declining unemployment and contracting risk premia.

6. Financial policy takeaways

Boards and senior decision-makers should develop an understanding of how varying interest rate scenarios may impact their financial policy decisions. Given the unprecedented scale of central bank intervention and the current, extremely rare negative real rate environment in the U.S., a rapid and significant increase in rates is very possible.

While every environment is unique, past rate increases provide a reference for the potential magnitude of an increase as well as the catalysts and second-order effects of higher rates. These past experiences offer some key financial policy takeaways:

Valuation	• Firms should evaluate the direct and indirect impact on asset valuation. Yield-oriented securities are likely to experience downward valuation pressure, potentially impacting certain industries with yield-oriented equity profiles (e.g., utilities), assets invested in fixed income asset classes and derivatives used for hedging • This pressure will be offset by likely higher valuations applied to more growth-oriented capital (such as most equity securities)
Cost of capital/ Hurdle rates	• Higher rates do not necessarily mean a higher cost of capital because risk premia tend to contract when rates rise
Capital structure	• For firms looking to issue or refinance debt in the near future, there is significant asymmetric price risk. Interest rate locks may mitigate this risk
Fiscal policy	• With higher rates, fiscal policy priorities may shift as government debt costs rise (potentially as much as a three-fold increase for the U.S. if rates move back to average historic levels)[2] • If higher rates correspond to economic growth, greater tax receipts may, however, offset this concern
Return of capital	• The current "dividend premium" is likely to fade. Firms considering dividend increases should not hesitate for this reason alone: Likely higher inflation will allow firms to quickly grow out of high payout ratios • Those with excess financial flexibility and limited strategic opportunities should consider aggressively repurchasing shares before valuations and rates move higher
M&A	• Firms should consider accelerating potential M&A to avoid higher financing costs and higher purchase prices
Risk management	• Multiple regions around the world have continued to push interest rates down. As governments around the world experiment with stimulus and recovery plans, firms should pursue risk management with a focus not just on rate spikes, but also on foreign exchange volatility
Inflation and input costs	• The fact that troughs are typically followed by rises in inflation should be of special concern to firms with price sensitive customers. Potential solutions to mitigate such issues include locking in prices through long-term purchase and labor agreements and hedging key inputs
Pension and healthcare liabilities	• Typical pension and post-retirement obligations may contract if equity values rise as the present value of future liabilities falls with rising discount rates, but the ultimate impact will depend on the asset mix

EXECUTIVE TAKEAWAY

Rapidly surging rates would affect many financial policy aspects including hurdle rates, distributions, risk management and margins. The impact may vary significantly across industries.

[2] Meeker, Mary. *USA Inc.* February 2011. Kleiner Perkins Caufield & Byers

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