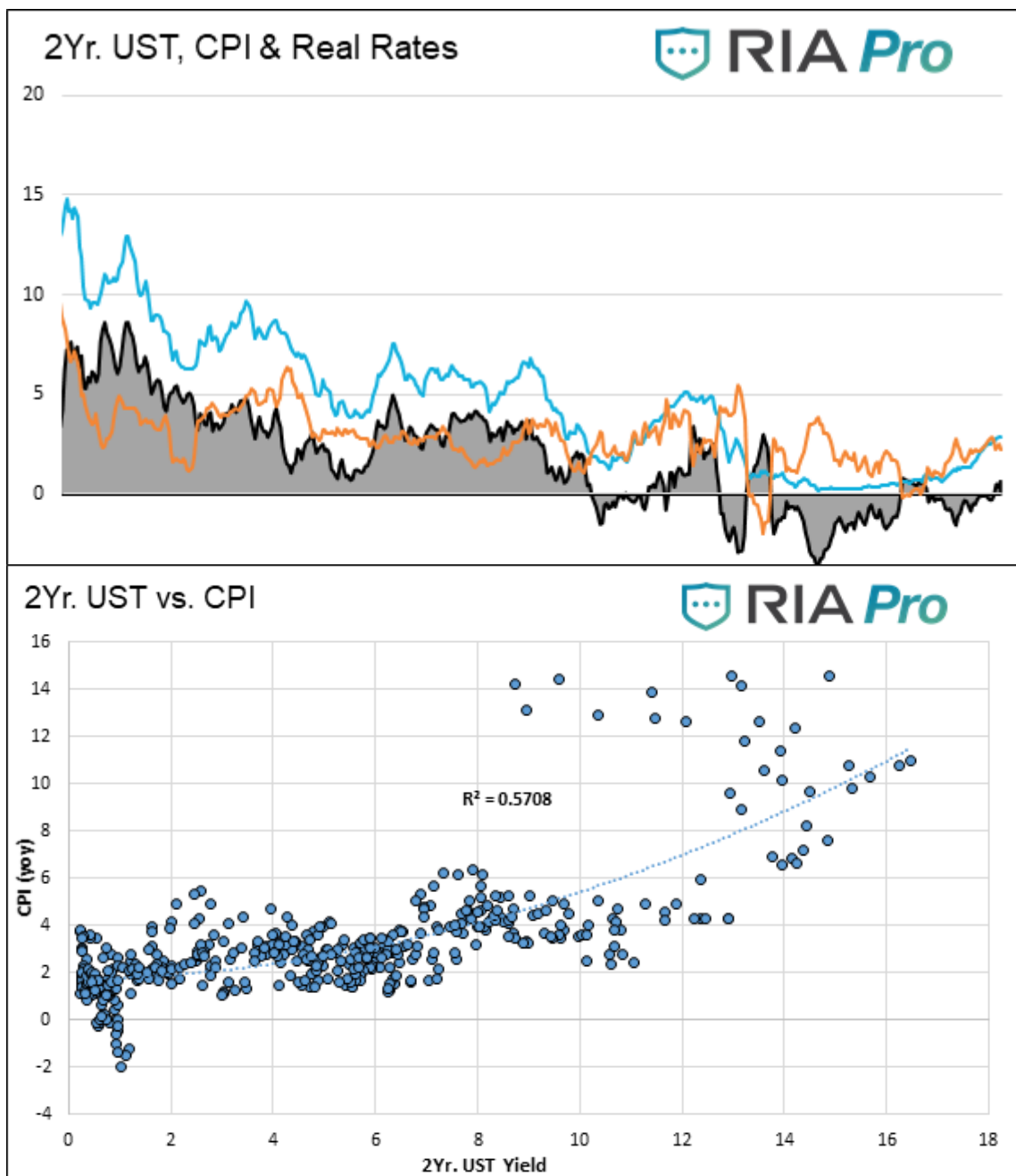


How Inflation Drives Interest Rates

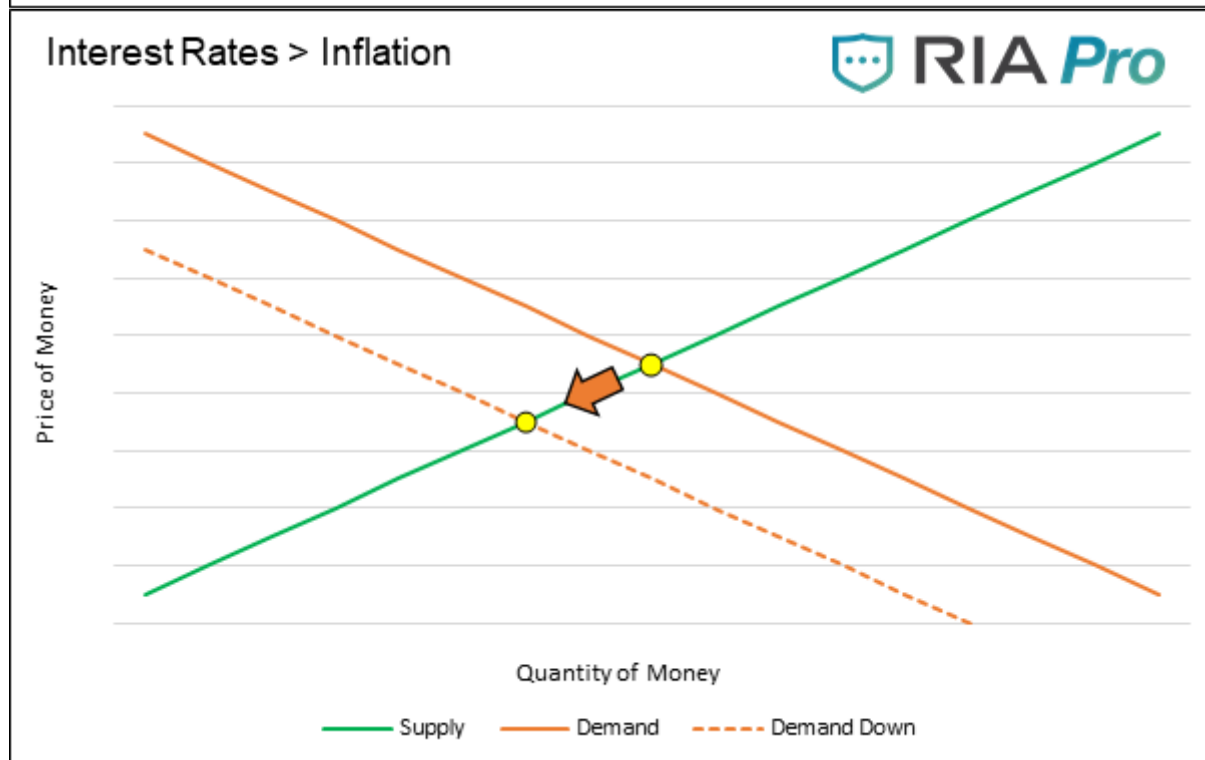
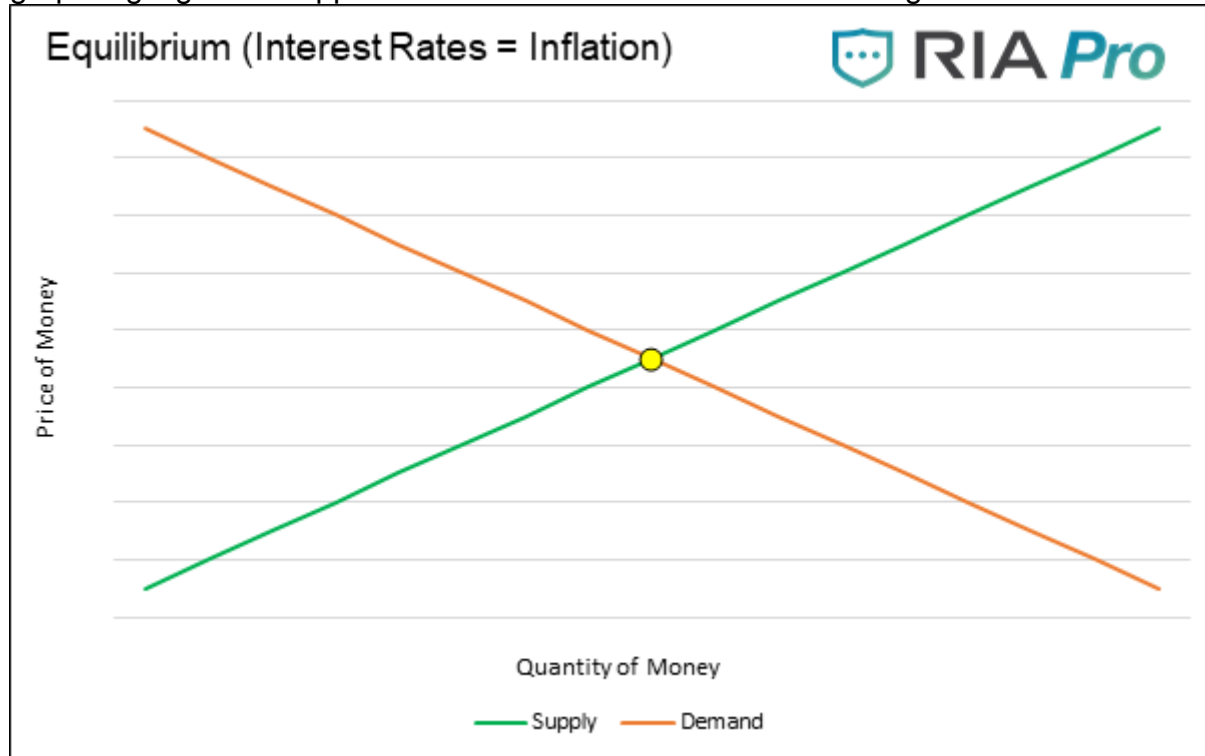
� [The Bond Rally Was No Surprise](#), published December 13, 2018, described how the long-term economic and demographic trends along with the burden of excessive debt all but ensure that interest rates will not rise much further. *?While there is little room left for interest rates to fall in the current environment, there is no ability for rates to rise before you push the economy back into recession.�*Of course, you don?t have to look much further than Japan for a clear example of what I mean.? This sad dynamic reminds us of the arcade game Whack-a-Mole. Higher rates are a drain on the economy which stymies growth, lessening demand to borrow, and as a result, rising interest rates get hammered back down. In addition to the level of economic growth and activity, the rate of inflation is also a key determinant of demand for money and therefore plays a large role in influencing the level of interest rates. **The Value of Money** Milton Friedman, Nobel Laureate, once famously stated: *?Inflation is always and everywhere a monetary phenomenon.?* In [The Fed?s Mandate To Pick Your Pocket](#) we provide an example of what Milton Friedman is conveying. *To better appreciate this thought, let?s use a simple example of three people stranded on a deserted island. One person has two bottles of water, and she is willing to sell one of the bottles to the highest bidder. Of the two desperate bidders, one finds a lonely one-dollar bill in his pocket and is the highest bidder. But just before the transaction is completed, the other person finds a twenty-dollar bill buried in his backpack. Suddenly, the bottle of water that was about to sell for one-dollar now sells for twenty dollars. Nothing about the bottle of water changed. What changed was the money available among the people on the island. As we discussed in [What Turkey Can Teach Us About Gold](#), most people think inflation is caused by rising prices, but rising prices are only a symptom of inflation. As the deserted island example illustrates, inflation is caused by too much money sloshing around the economy in relation to goods and services. **What we experience is goods and services going up in price, but inflation is actually the value of our money going down.*** The last sentence bears repeating as it is the truest understanding of inflation. Inflation is not the price of things going up but the value of money going down. Before we explain how the price (interest rates) and value of money are affected by inflation, the graphs below put the relationship between interest rates and inflation in a statistical context. The first graph compares CPI and the two-year U.S. Treasury yield. The difference shaded gray, is what is known as the real rate, or the yield after inflation.� The second graph plots the same data in a scatter plot format. As shown the R-squared is .5708, which denotes that 57% of the change in the two-year U.S. Treasury is attributed to changes in the CPI.

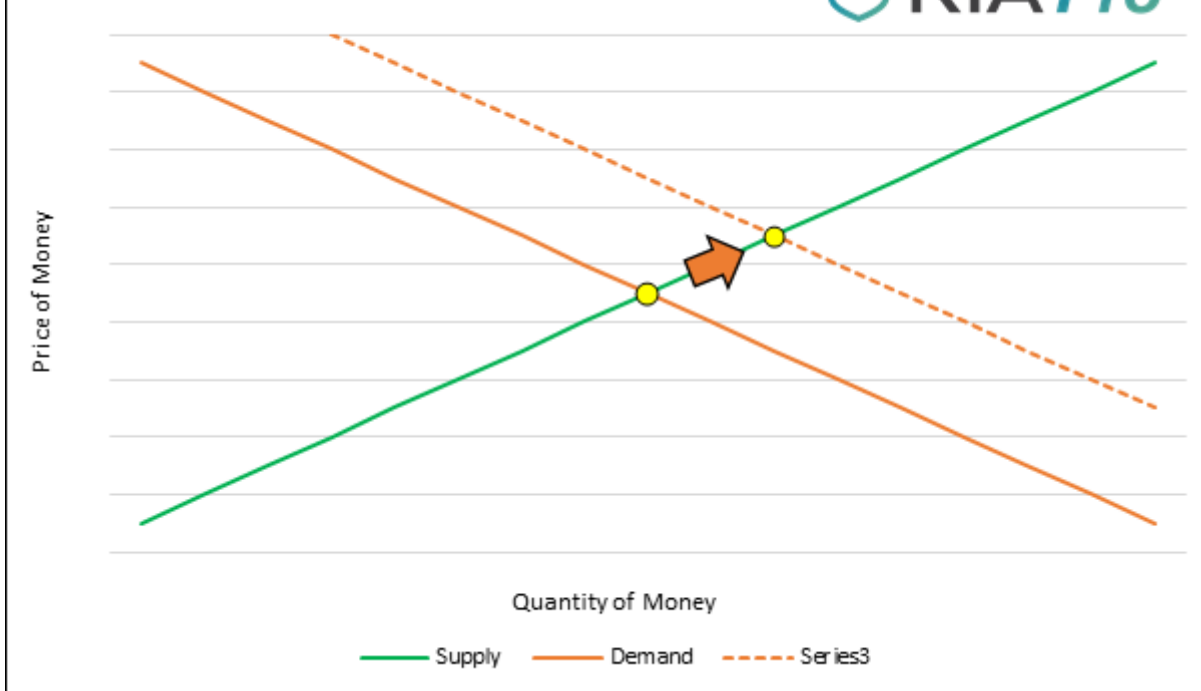


Data Courtesy:

St. Louis Federal Reserve Supply and Demand for Money A high rate of inflation is beneficial to those with fixed-rate debt. In such a scenario the value of assets rises while the cost of the debt stays the same. To put this in personal terms, think about how the value of your house tends to rise while the amount of the mortgage payment stays fixed. The ability to pay off the mortgage and take capital gains becomes easier due to inflation. At the same time, that environment is detrimental for prudent savers who choose to live within their means and do not incur debt. Their value of their savings deteriorates as the value of the dollar declines. A deflationary environment has the opposite effect as the burden of debt rises relative to stagnant or falling prices. Those conditions are unfavorable for borrowers (households, corporations, and the government) especially when debt is not used for productive purposes which aim for investment returns greater than the inflation rate. Because most outstanding debt is not productive today, sinister perceptions of deflationary conditions are peddled by the Fed and the government. Given the effects mentioned above of inflation or deflation on the borrower, the demand for money rises when the current and expected rate of inflation is greater than the cost of money or interest rates. Conversely, demand declines when the level of interest rates is greater than the current and expected rate of inflation. This is due

to the expectations of borrowers. Holding interest rates below the rate of inflation pulls demand forward which helps explain the inclination of central bankers and the government in a world that desires ?growth at all cost?. To help with this concept, we show basic supply and demand curves below. The first graph shows a hypothetical scenario in which the level of interest rates and the rate of inflation are in equilibrium.� The second graph shows the same curves, along with the shift in the demand curve when the rate of inflation is lower than interest rates. As shown by the yellow equilibrium points, the price of money, or interest rate, declines in this scenario. The third graph highlights the opposite effect when the rate of inflation is greater than interest rates.





The Federal

Reserve aims to maintain steady economic growth. It accomplishes this by manipulating the supply of money via their Fed Funds interest rate policy (monetary policy). Since the financial crisis, they have used monetary policy to push interest rates lower than economic growth rates and inflation to stimulate borrowing. This can be seen in the negative real rate as shown in the first graph. As we showed in the last supply/demand graph above when interest rates are below the level of inflation and expected inflation, demand for borrowing rises. This pulls demand forward and encourages the consumption of goods and services today which temporarily boosts economic growth. **Summary** Habitually using the Fed Funds rate to spur current levels of economic growth causes debt to grow faster than the natural economic growth rate of the economy. The risk is that debt growth eventually eclipses the pace of economic growth. That is precisely the current circumstance in the United States. As such, the marginal effectiveness of new debt in spurring economic growth declines as the burden of servicing that debt rises. To foster similar levels of growth in such an environment requires that the Fed be ever more aggressive in lowering interest rates. As we see in the U.S. economy, weaker growth resulting from rising levels of debt is self-reinforcing. Thus far the Fed's actions have not caused observable levels of inflation to rise in a manner that would cause concern among policy-makers. Traditional measures of price inflation such as the consumer price index (CPI) remain benign. However, the manifestation of their control over the price of money is showing up other ways. For instance, inflation in financial asset prices, as opposed to real assets, has never been higher. The visual evidence shows up in a chart of the ratio of stock prices to crude oil, copper, cotton or a dozen other "real assets." Those with access to leverageable capital choose to speculate in stocks and bonds as opposed to investing in productive projects that would help the economy grow. Not surprisingly, when speculation appears to produce easy and predictable returns, the incentive to invest in productive ventures is weak. As such the current dynamic will likely continue to produce low levels of traditional inflation and allow the Fed to rationalize artificially low-interest rates. If, however, the economy slips into a recession and low, or even negative, interest rates are not enough to generate growth, the Fed may take even more extreme measures to combat the downturn. In what would be yet another advancement of extraordinary monetary policy, the Fed may elect to print money for direct distribution into the economy. Although the effect may be temporarily beneficial for a struggling economy, such a move would be more likely to eventually cause inflation over which the Fed could easily lose control. In that instance, we will be fortunate if a bottle of water only costs \$20.