

# Low Real Interest Rates<sup>1</sup>

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## Introduction

Thanks for the invitation to speak at the 22nd annual Minsky conference. Professor Minsky devoted his career to emphasizing the connections between the financial sector and the real economy. It is safe to say that the events of the past decade have provided strong evidence in support of Professor Minsky's basic belief in the importance of those connections. Indeed, as the economy continues to improve, we are beginning to hear new concerns being voiced about potential financial instability and associated risks to the macroeconomic risks. In my talk today, I will provide some perspectives on those issues.

I start by arguing that, over the past six years, we have seen dramatic changes in the demand for and supply of safe assets. Given those changes, the Federal Open Market Committee (FOMC) is only able to achieve its congressionally mandated objectives of maximum employment and price stability by keeping the real—that is, net of inflation—interest rate well below its 2007 level. I suggest that these changes in asset demand and asset supply are likely to persist over a considerable period of time—possibly the next five to 10 years. It follows that the FOMC will only be able to meet its objectives over that time frame by taking policy actions that ensure that the real interest rate remains unusually low.

I then point out that low real interest rates can be expected to be associated with financial market phenomena that are seen as signifying instability. It follows that, for many years to come, the FOMC will only be able to achieve its congressionally mandated objectives by following policies that result in signs of financial market instability.

Finally, I discuss how the FOMC should take those signs of instability into account when formulating monetary policy.

Before proceeding I need to stress that my remarks today reflect only my views and not necessarily those of any other FOMC participant.

### **Low Real Interest Rates**

Economists generally distinguish between nominal and real interest rates. The nominal interest rate is the interest rate reported on a typical savings account or mortgage. It tells you how many dollars a saver or a lender will get in the future for giving up a dollar today. The real interest rate adjusts those future dollars for the anticipated rate of price increases—that is, for the anticipated rate of inflation. This means that the real interest rate tells you how much purchasing power a saver or lender will get in the future for giving up a dollar of purchasing power today. Economists generally believe that household and businesses make savings and investment decisions based on *real* interest rates over the next five to 10 years.

When I was a student, back in the seventies and eighties, the real interest rate was a somewhat mysterious unobservable object. That's no longer true. Treasury inflation-protected securities—bonds that are colloquially called TIPS—make coupon payments that are indexed to the inflation rate. This indexation means that TIPS coupon payments provide a fixed amount of purchasing power to the bondholder, not a fixed amount of dollars. As a result, TIPS yields provide a useful measure of the real interest rate.

When we look at TIPS yields, we see that real interest rates have fallen dramatically over the past six years. In the first half of 2007, five-year TIPS bonds had a real yield of about 2.5 percent and 10-year TIPS bonds also had a real yield of about 2.5 percent. Now jump forward to 2013. The five-year real TIPS yield is around *negative* 1.3 percent. Just to be clear: This means that the buyer of a five-year TIPS bond is giving up \$100 of purchasing power today in exchange for around \$94—six dollars less!—of purchasing power in five years. The 10-year real TIPS yield is also negative—around negative 0.7 percent.

Why have real interest rates fallen so much? At one level, the answer is obvious: monetary policy. The FOMC has announced its intention to keep the fed funds rate near zero at least until the unemployment rate falls below 6.5 percent. At the same time, the FOMC has bought over \$3 trillion of longer-term assets issued or backed by the government. With inflationary expectations well anchored, these actions are designed to push downward on real interest rates and have been successful in doing so.

But I think that the obvious monetary policy answer is actually deeply misleading. Consider the following, very Minnesota, analogy. Some days during the year when I go outside, I wear a parka. Other days, I wear a light jacket. And—this will seem hard to believe—on some other days, I don't need a coat at all.

Every morning, I have complete control over what kind of coat I wear—even more control than the FOMC has over real interest rates. But, of course, in making my choice of outerwear, I'm merely responding to the Minnesota weather, which is a force that is—sadly—well beyond my control. *The FOMC is in exactly the same position of having to respond to*

*strong forces well beyond its control when making its decisions about the real interest rate.*

Thus, when I decide what coat to wear, my goal is to keep myself at a temperature that I view as appropriate, given prevailing conditions that I cannot influence. Similarly, when the FOMC decides on a level of the real interest rate, its goal is to keep the macroeconomy at an appropriate “temperature,” given prevailing conditions that it cannot influence.<sup>2</sup>

More concretely, the Committee is taking actions to adjust real interest rates so as to fulfill its congressional dual mandate of promoting price stability and maximum employment. Thus, suppose the economy is running too cold, in the sense that inflation is below the Committee’s 2 percent target and unemployment is elevated. Then, the FOMC can, metaphorically, put on a heavier coat—that is, lower the real interest rate to stimulate spending and economic activity.

In 2007, the FOMC had on about the right kind of coat, in the sense that the macroeconomic outlook was broadly consistent with the Committee’s objectives. The fall in TIPS yields over the past six years suggests that the FOMC has, in the language of my metaphor, put on a warmer coat by pushing down on real interest rates. Indeed, some observers have expressed the concern that the FOMC has put on too heavy a parka.

But the truth is that the FOMC’s choice of winter garb is actually insufficient to keep the U.S. economy appropriately warm. After all, the outlook for both employment and prices is too low relative to the FOMC’s goals. Unemployment is currently 7.6 percent and is expected to fall

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<sup>2</sup> The analogy is imperfect in at least one key sense. Nobody can influence the weather. In contrast, other economic actors (like Congress or the president) may be able to influence economic conditions that are not under the control of the FOMC.

only slowly. At the same time, inflation pressures are muted: Both private sector forecasters and the FOMC expect that PCE inflation will be at or below 2 percent through 2013 and 2014. The Committee needs to put on some more serious winter gear if it is to get the economy back to the right temperature. More prosaically, the FOMC can only achieve its dual mandate objectives by lowering the real interest rate even further below its 2007 level.

### **What Happened?**

I've argued that the path of real interest rates that is consistent with the FOMC's dual mandate objectives—what one might call the mandate-consistent path of real interest rates<sup>3</sup>—has fallen greatly since 2007. I now turn to a discussion of *why* this has happened. I see the decline in mandate-consistent real interest rates as grounded in an increase in the demand for, and a fall in the supply of, safe financial investment vehicles. Importantly, I see these changes as likely to be highly persistent.

There are many factors underlying the increased demand for safe assets. I'll discuss three that strike me as particularly important: tighter credit access, heightened perceptions of macroeconomic risk and increased uncertainty about federal fiscal policy. In terms of credit access: I don't think that it's controversial to say that credit access is more limited than in 2007. What is less generally realized, I think, is that restrictions on households' and businesses' ability to *borrow* typically lead them to spend less and *save* more.

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<sup>3</sup> What I'm terming the "mandate-consistent real interest rate" is the same as the "natural real rate of interest" in simple New Keynesian models.

I can best illustrate this point through an example. Consider a household that wants to purchase a new home. In 2007, that household could have received a mortgage with a down payment of 10 percent of the purchase price, or even lower. In 2013, that same household is considerably more likely to need a down payment of 20 percent. These tighter mortgage standards mean that, to buy a similarly priced house, the household needs to first acquire more assets.

Thus, the demand for safe assets has risen because of tighter limits on credit access. It has also risen because of households' and businesses' assessments of macroeconomic risk. As of 2007, the United States had just gone through nearly 25 years of macroeconomic tranquility. As a consequence, relatively few workers or businesses (or macroeconomists!) in the United States saw a severe macroeconomic shock as possible.

However, in the wake of the Great Recession and the Not-So-Great Recovery, the story is different. Now, more workers see themselves as being exposed to the risk of persistent deterioration in labor incomes. More businesses see themselves as being exposed to the risk of a radical and persistent downshift in the demand for their products. These workers and businesses have an incentive to accumulate more safe assets as a way to self-insure against this enhanced macroeconomic risk.

The federal fiscal situation is another key source of elevated uncertainty. The federal government faces a long-run disconnect between its overt commitments and the baseline path of federal tax collections. This disconnect can only be resolved by raising taxes and/or cutting the long-run arc of spending.

Of course, this tension between revenues and expenditures pre-dated the 2007 downturn. However, it is at least arguable that the fiscal debates of the past few years have made more Americans aware of the uncertainties associated with resolving this long-run disconnect. And these uncertainties affect the demand for safe assets. The prospect of higher future corporate profits taxes gives businesses an incentive to demand safe short-term financial assets as opposed to engaging in long-term investments. The prospect of reductions in Medicare, Medicaid or Social Security gives some households an incentive to demand more safe assets as a way of replacing those lost potential benefits.

I've argued that, due in part to tighter credit access and higher uncertainty, the demand for safe financial assets has risen since 2007. At the same time, the global *supply* of assets perceived as safe has also fallen. Americans—and many others around the world—thought in 2007 that it was highly unlikely that American residential land, and assets backed by land, could ever fall in value by 30 percent. Not anymore. Similarly, investors around the world viewed all forms of European sovereign debt as a safe investment. Not anymore.

Thus, the FOMC is confronted with a greater demand for safe assets and tighter supply of safe assets than in 2007. These changes in asset markets mean that, at any given level of real interest rates, households and businesses spend less. Their decline in spending pushes down on both prices and employment. As a result, the FOMC has to lower the real interest rate to achieve its objectives.<sup>4</sup>

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<sup>4</sup> Kocherlakota (2012) provides a formal model of this mechanism.



I often hear that the FOMC has created a low interest rate environment that is harmful for savers and others. But, to return to my winterwear analogy, that seems about as compelling as blaming me for creating winter in Minnesota by putting on my long johns. The FOMC has been confronted with wintry changes in asset demand and supply. It has lowered the real interest rate to keep the economy “warmer” in light of these changes. Indeed, as I argued earlier, the weak macroeconomic outlook suggests that the FOMC has in fact not put on a warm enough coat—that is, it has not lowered the real interest rate sufficiently.

What about the future? The passage of time will ameliorate these changes in the demand for and supply of safe assets—but only partially. Any long-run forecast has enormous attendant uncertainties. But I expect that for a considerable period of time—possibly the next five to 10 years—credit market access will remain limited relative to what borrowers had available in 2007. I expect that many workers and businesses will remain more concerned than in 2007 about the risk of a large adverse recessionary shock. And I also expect that businesses will continue to feel a heightened degree of uncertainty about taxes and households will continue to feel a heightened degree of uncertainty about the level of federal government benefits. These considerations suggest that, for many years to come, the FOMC will have to maintain low real interest rates to achieve its congressionally mandated goals.

### **Financial Market Outcomes Associated with Low Real Interest Rates**

I have argued that, for some time to come, the FOMC will only be able to achieve its dual mandate outcomes if the time path of real interest rates is lower than in 2007. Indeed,

remember that in 2013, the mandate-consistent real interest rate over the next 10 years is at least three full percentage points lower than it was in 2007. It seems likely that the mandate-consistent time path of real interest rates could be unusually low for a considerable period of time. Moreover, these unusually low real interest rates will likely be associated with other unusual financial market outcomes. I'll discuss three of these outcomes in some detail: inflated asset prices, unusually volatile asset returns and high merger activity.

The first consequence of low real interest rates that I mentioned—higher asset prices—is the most obvious. Long-lived assets are somewhat substitutable for each other. Hence, investors generally respond to low real TIPS yields by bidding up the price of other long-lived assets—including gold, land, stocks or machines. It follows that when real interest rates are unusually low by historical norms, asset prices will typically be unusually high relative to historical norms.

The second consequence of low real interest rates is that asset returns should be expected to be highly volatile. When the real interest rate is very high, only the near term matters to investors. Hence, variations in an asset's price only reflect changes in investors' information about the asset's near-term dividends or risk premiums. But when the real interest rate is unusually low, then an asset's price will become correspondingly sensitive to information about dividends or risk premiums in what might seem like the distant future. This new source of

relevant information should be expected to induce more variability into asset prices and returns.<sup>5</sup>

Finally, I believe that when real interest rates are low, we should expect to see more mergers. Mergers typically involve enduring current costs in exchange for a flow of future benefits. For example, to initiate the merger, the acquiring firm has to search for an appropriate target, and that search can be costly. As well, after the merger, it may be necessary to undertake a one-time costly reorganization of people and materiel to achieve the anticipated gains in revenue. Businesses will be more willing to pay the upfront costs of a merger in exchange for the anticipated flow of future benefits associated with the merger if the real interest rate is low.<sup>6</sup>

In this way, unusually low real interest rates should be expected to be linked with inflated asset prices, high asset return volatility and heightened merger activity. All of these financial market outcomes are often interpreted as signifying financial market instability. And this observation brings me to a key conclusion. I've suggested that it is likely that, for a number of years to come, the FOMC will only achieve its dual mandate of maximum employment and price stability if it keeps real interest rates unusually low. I've also argued that when real interest rates are low, we are likely to see financial market outcomes that signify instability. It follows that, for a considerable period of time, the FOMC may only be able to achieve its macroeconomic objectives in association with signs of instability in financial markets.

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<sup>5</sup> Mathematically, I'm talking about the implications of having a higher average price-dividend ratio in the Campbell-Shiller (1988) formula. See also Cochrane (1992).

<sup>6</sup> Many academic models of mergers are based on this kind of cost-benefit structure. See Moran (2013) for a recent example.

## Financial Stability and Monetary Policy

These financial market phenomena could pose macroeconomic risks. In my view, these potentialities are best addressed through effective supervision and regulation of the financial sector. It is possible, though, that these tools may only partially mitigate the relevant macroeconomic risks. How, if at all, should the FOMC adapt monetary policy in response to any residual risk?

To answer this question, the Committee will need to confront an ongoing probabilistic cost-benefit calculation. On the one hand, raising the real interest rate will definitely lead to lower employment and prices. On the other hand, raising the real interest rate *may* reduce the risk of a financial crisis—a crisis which *could* give rise to a much larger fall in employment and prices. Thus, the Committee has to weigh the *certainty* of a costly deviation from its dual mandate objectives against the benefit of reducing the *probability* of an even larger deviation from those objectives.

This probabilistic cost-benefit calculation is conceptually challenging today and will remain so for some time to come. However, it is important to stress that the Committee is in a better position to address this challenge in 2013 than it was in 2007. The Federal Reserve System now dedicates a significant amount of our best staff resources to financial system surveillance. The Federal Reserve Bank of Minneapolis contributes to these efforts in a number of ways, including our ongoing monitoring of the risk-neutral probability distributions of future

asset values.<sup>7</sup> As a result of these efforts, the FOMC has a lot more information, on an ongoing basis, about the extent of financial system risks.

Nonetheless, as always, there is more to be learned. We need to understand better, in light of the current state of supervision and regulation, which residual financial system risks have the potential to translate into macroeconomic risks. And we need to understand better to what extent monetary policy tightening can in fact temper those residual financial system risks.

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<sup>7</sup> See the Minneapolis Fed's [asset prices page](#).

## Conclusions

Let me wrap up.

Over the past six years, there have been big changes in the demand and supply of safe assets. These changes seem likely to be persistent ones, and they mean that the FOMC may keep real interest rates unusually low for years to achieve its objectives of maximum employment and price stability.

It follows that, to attain maximum employment and price stability over the same long period of time, Americans will likely face the consequences of low real interest rates. I've emphasized consequences related to financial market instability, like inflated asset prices, volatile asset returns and heightened merger activity. Even in the presence of effective supervision and regulation, these phenomena could pose residual macroeconomic risks. The FOMC's decision about whether to respond to those residual risks using the rather blunt tool of monetary policy will necessarily depend on a delicate probabilistic cost-benefit calculation.

Thanks for listening. I look forward to taking your questions.

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