

# Low Real Rates, Secular Stagnation, and the Future of Stabilization Policy

Lawrence H. Summers  
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Thank you very, very much Rodrigo for those warm words. For all of us in academic life, as satisfying as it is to research and even do policy work directly ourselves, our greatest satisfaction is in what our students are able to accomplish, and I have been very fortunate in many of the students that I have had, but none more than you. It was a pleasure to work with you as a graduate student. It was a mixed pleasure since you ran faster than I did, to play tennis with you (laughs) when you were a graduate student, and it has been a source of great satisfaction to see all your success and all of your achievement here in Chile.

And I am delighted to attend this conference to see collaborators of mine – Gauti and Robin – to see people from whose textbooks I have learned so much, like Woodford, to see people like Helene, who have contributed so much to our understanding of financial perils. I think the fact that over the last generation the central banking community has become seriously scholared with a deep commitment to close engagement with academics and intricate

research on the issues it faces, has been a significant contributor to better and wiser policies, and I think it is an example for other areas of public policy. I would guess, Rodrigo, that there are at least a dozen major Central Banks around the world that annually host some kind of conference of the same kind as your conference, where people come together to discuss a pressing set of questions. I wish the same thing was done by the world's foreign ministries, by the world's tax authorities, by those concerned around the world with questions of fighting poverty or whatever. I think it is a tribute to the central banking community that there are so many of these events.

I think it is the obligation of the keynote speaker at a conference like this to, ideally, be right, but certainly be provocative and a bit challenging, and, hopefully, say something that somebody remembers, and, so, it is in that spirit that I am going to address you this morning. Basically, what I am going to do is double-down on my remarks two years ago at the IMF on secular stagnation, tell you why what I thought then was a possibility, I now think is a probability, tell you why what I thought was a significant issue then requires a more far-reaching reassessment of both macroeconomics and of central banking and, more generally, macroeconomic practice than I thought at the time.

## Low Real Rates, Secular Stagnation, and the Future of Stabilization Policy

- **Decade of Surprises**
- Equilibrium Rates are Way Down
- The Continuing Relevance of the Zero Lower Bound
- What is to be Done?

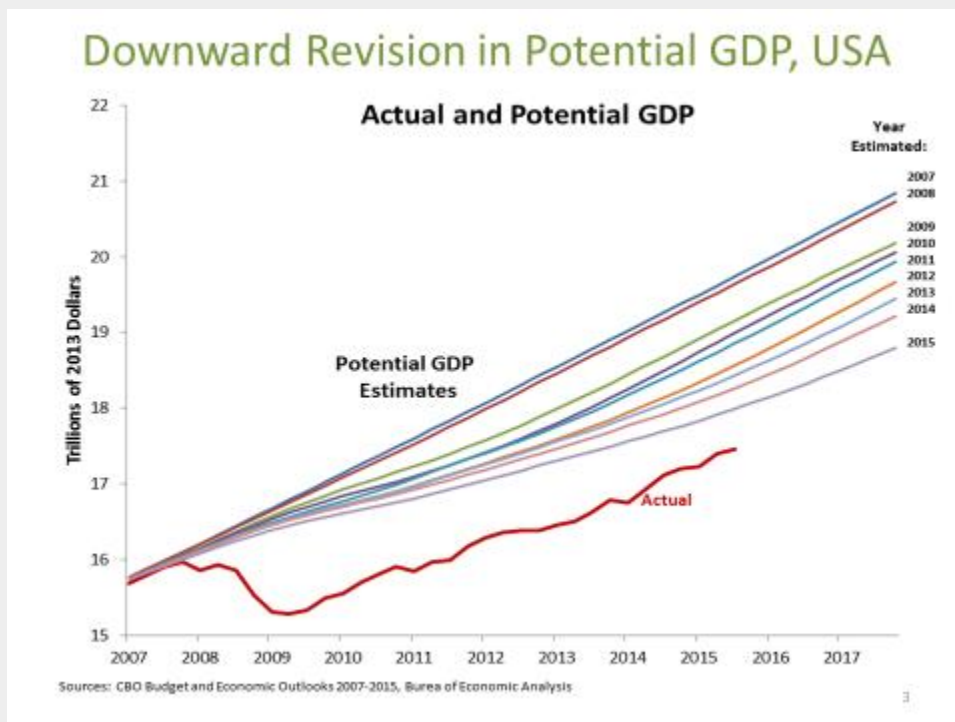
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When I spoke at the IMF two years ago, markets thought that the federal funds rate would be 77 basis points now and 170 basis points a year from now. They now think it is essentially zero now -- because that's what it is -- and they think it is going to be only 80 basis points as that time a year from now. Since the time when I spoke two years ago, when I think the notion that we were in some kind of permanent period of low interest rates and sluggishness was met with substantial surprise, ten year nominal bond rates have declined from 59 basis points to 32 basis points in Japan; from 275 basis points to 225 basis points in the United States; and from 176 basis points to 35 basis points in Germany. At the same time, as I will illustrate in just a moment, GDP growth forecasts have generally been revised downwards, as well.

So I want to suggest four things today: First, that it has been a decade of surprises and most of the surprises have not been good. Second is that everywhere rates are down from

where we might have supposed they would be a few years ago. Third, that the zero lower bound should be thought of as an important and ongoing part of macroeconomic life for the foreseeable future. And fourth, I want to offer some observations on what is to be done in the face of those circumstances.

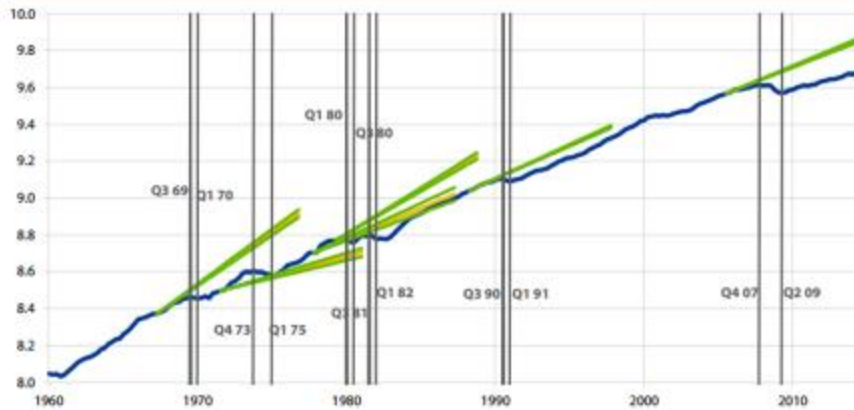
Here is a picture for the United States, the picture would, if anything, be a little more dismal outside of the United States.



GDP has been far short of potential and every year we revise our view downwards about the level of potential. This is a longstanding phenomenon.

## Hysteresis A Frequent Event

Evolution of log real GDP and extrapolated trends for the United States



Sources: Blanchard, Cerutti and Summers

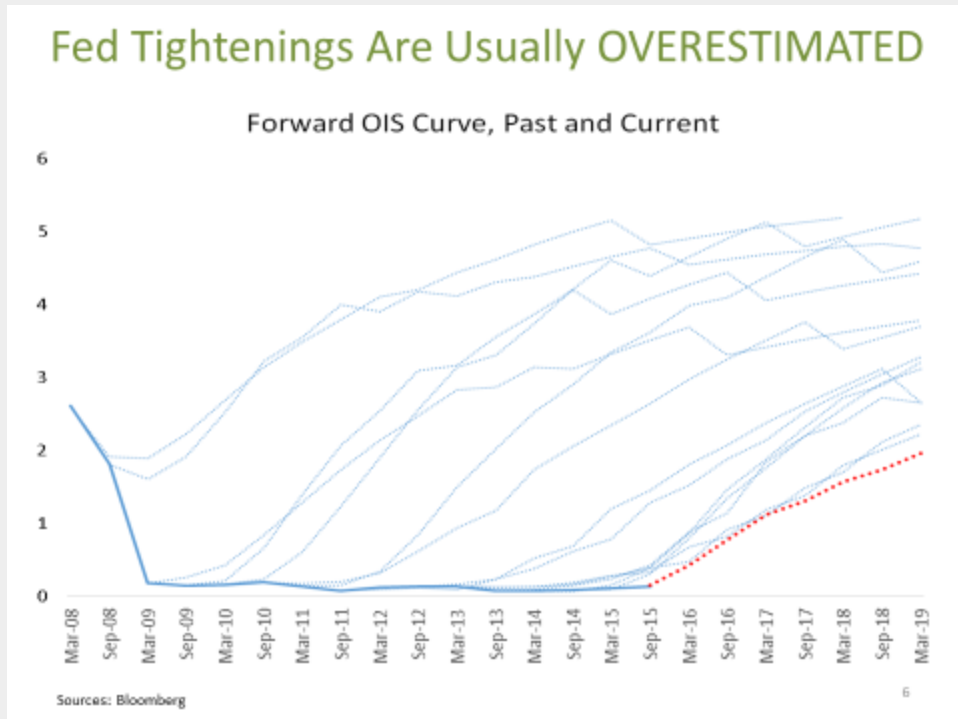
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Olivier Blanchard, Eugenio Cerutti and I, in a [paper](#) many of you will have seen, have looked at the question of what happens to GDP many years after recessions. Does it return to normal? Does it stay below trend? The general answer is it most commonly stays below trend. Cases where it returns to trend do take place, but they are slightly less numerous than cases where, not just the level of GDP, but the trend and growth of GDP declines after recessions. There are, to be sure, important issues of causation, but as best we can tell, even when you look at recessions that most clearly are caused by demand shortfalls, such as those prominently associated with disinflations, these conclusions continue to uphold.

## Triumph of Hope Over Experience



Not very surprising, then, that the continuing pattern, both for the world and for the United States, has been we will get an acceleration of recovery tomorrow, and it is very much like the old joke, it is no longer a true joke, but there was an observation that was true for 50 years in the oil industry. If you asked people at what price shale oil would be economic, the answer was a constant. It was the current price of oil plus \$10, and something of that kind has been the reality with respect to forecasts of an acceleration of growth.



Not very surprisingly, in the face of this, markets have constantly overestimated the rate at which monetary policy is going to be tightened. This is a picture for the United States, but there are similar pictures for other countries. If one used surveys of professional forecasters, instead of market estimates, the pattern documented here would be even more present.

And where are we today? I have become convinced after a variety of conversations with market participants that for the purpose of gauging something called the real interest rate, the average academic tendency to look at the TIPS (Treasury Inflation Protected Securities), look at the inflation indexed bond, is probably wrong, and that the better thing to do is to look at some kind of swap to infer a real interest rate. So, that is what I have done here with respect to real interest rates and with respect to inflation.

## Zero Long-Term Real Rate: Swaps

10 Yr Interest Rates and Expected Inflation			
	USA*	Japan	Euro
Nominal Swap Rate	1.95	0.46	0.72
- Inflation Swaps	1.51	0.79	1.40
Real Swap Rate	0.44	-0.32	-0.67

\*Adjusted for the 0.35 Percentage Point Avg. Difference Between CPI and Federal Reserve's Preferred PCE Inflation Rate

Sources: Bloomberg November 12, 2015

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And if you do not remember anything else, I suspect a sophisticated audience like this knows everything I am saying because of the picture, remember this: What this is saying is that nowhere in the industrial world is there an expectation that over 10 years inflation will reach the two percent target. Nowhere in the industrial world is there an expectation that real interest rates will average even one percent and that for the, this proxy of the industrial world, if you take any kind of reasonable weighted average, the real interest rate over the next 10 years is expected to be zero. And since, with an upper-sloping turn structure, we normally assume that there are some risk premiums, or the liquidity premiums embodied here, probably expected real rate are even lower than what is depicted here.



## Zero Long-Term Real Rate: Indexed Bonds

10 Yr Interest Rates and Expected Inflation			
	USA*	Japan	Germany
Government Bond Rate	2.3	0.3	0.5
-Breakeven Inflation	1.3	0.8	1.1
TIPS Real Rate	1.0	-0.5	-0.7

\* Adjusted for the 0.35 Avg. Difference Between CPI and The Fed's Preferred PCE Inflation Rate

Sources: Bloomberg

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One can, one can do the same calculation, I think it is slightly less to be preferred, using the indexed bond. It does not make a very big difference. The marginal difference that it makes is that the real rate is somewhat higher for the United States and the break-even inflation is, therefore, somewhat lower for the United States. So, markets are making a clear bet that two percent inflation is not going to happen and that real rates are not going to get near traditional benchmark levels even over a 10-year period, as I will suggest in a few moments, longer time frame.

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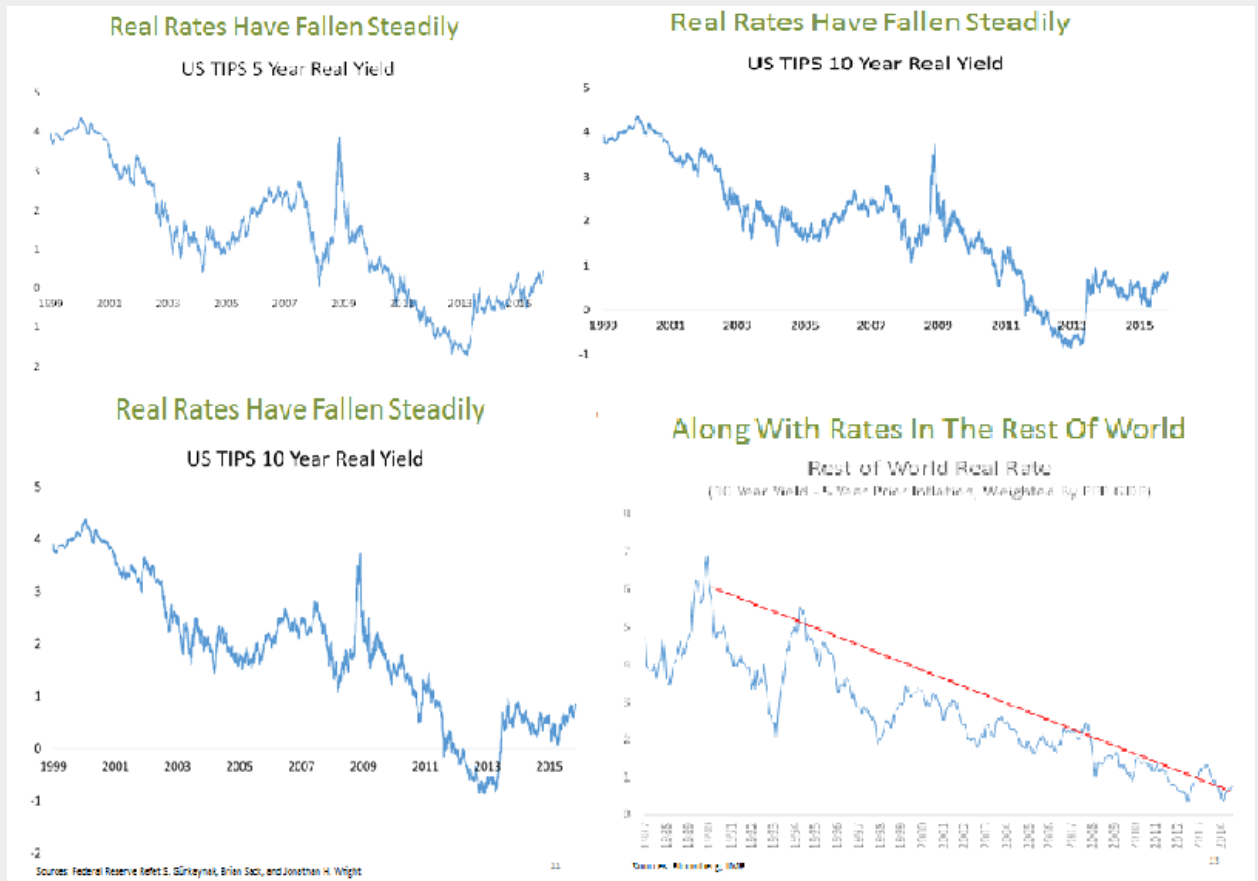
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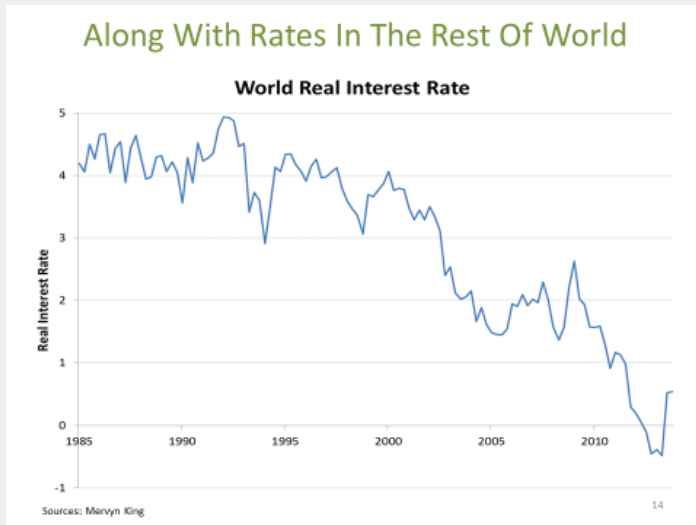
I would suggest that these events are closely related. I would suggest that what has gone on, certainly in recent years, and for quite a long time, is that there have been a variety of structural changes in the economies of the industrial world that lead to an increasing propensity to save, a decreasing propensity to invest, and, as a consequence, lower equilibrium real rates; as a consequence, less aggregate demand and disappointing growth performance; and, as a consequence, less upward inflationary pressure. While I do not believe that precise sources have been well worked out or are easily identified, I believe that one possibility is the trends we have observed over last 20 years will continue. Another possibility is that where we are is where we will stay and another possibility is that patterns will reverse. The central case is not that matters will reverse. The central case is that matters will stay where we are. Or to put the point more prosaically, if you are asked to extrapolate the time series 3-2-1, you do not really know what to do. You can make a case for zero because it seems natural to continue the

trend. You can make a case for one because that is roughly where it is now and you do not know what will happen next. You can make a case for two because that is the long-run average. You do not know for sure, but you probably would not want to say that two was your best guess, and, essentially, that is the issue that I believe we confront when we think about looking at real rates going forward.

Here are a variety of charts. I would be the first to bet the fact that there are a lot of pictures of highly-correlated things does not really make the case stronger, but I will show them to you nonetheless, US five-year tips, US 10-year tips, US five-year forward tips, and estimate of the rest of the world's real interest rate.



Just for independence, Mervyn King's estimates of the rest of the world's real interest

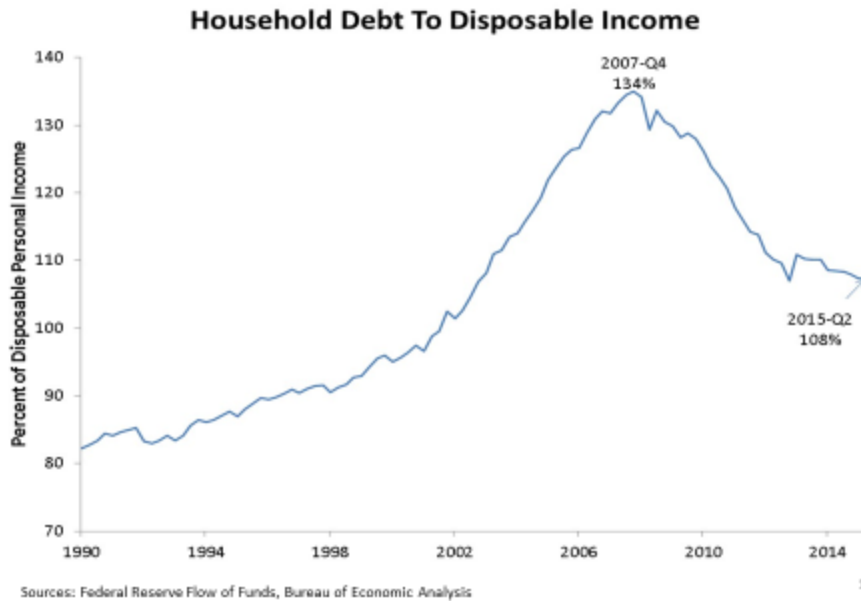


rate. It is, I would suggest, difficult to escape the conclusion that real interest rates have been trending downwards for some quite substantial interval that predates the period of the financial crisis in 2008. I have

come to the view that this idea of secular stagnation has been with us for quite a long time.

Here is a rather unconventional but I think not without validity version of US economic history going back the better part of a generation. We have had financial crisis and slow recovery, despite zero rates for the last seven years. Between 2003 and 2007, the economy grew at an adequate rate. I suppose some people would say a good rate. No one, would I believe, say a superb rate, nor would anyone suggest that the economy had hugely overheated in an inflation sense. And, yet, that growth was based on what we are now completely clear was a manifestly unsustainable financial foundation; a foundation of a vast erosion of credit standards, a foundation of a once-a-century bubble in housing prices, a foundation of growth in household debt to support consumption at a rate that is clearly not sustainable.

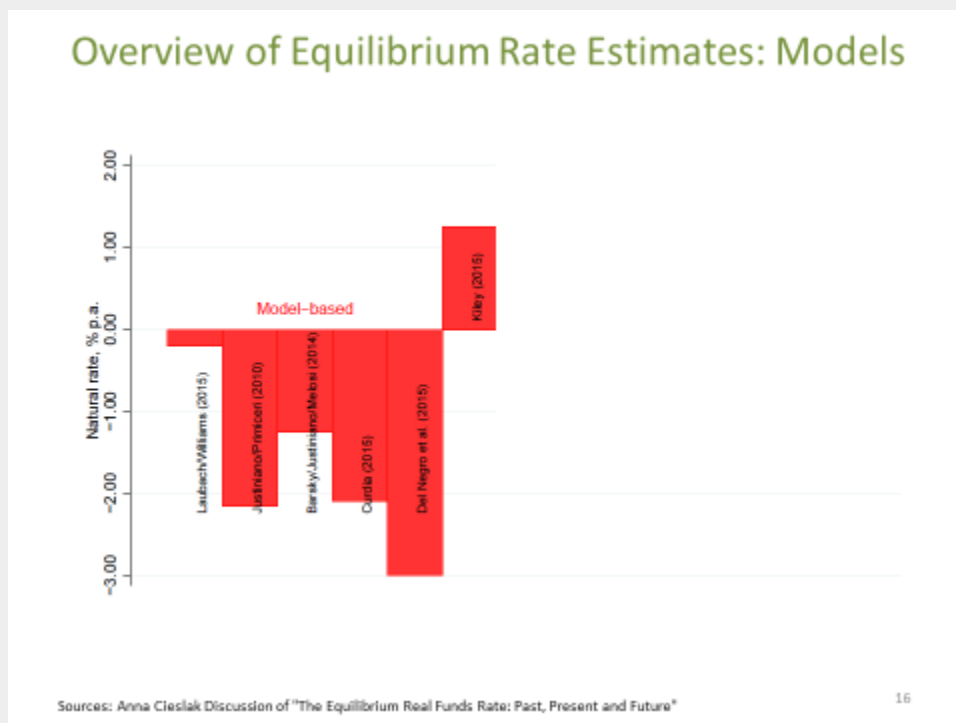
## Unsustainable Credit Growth 2003-2007



Prior to 2003 to 2007, the economy was in recession or a post-recession from 2001 to 2003. Prior to that, it was supported by what is now universally recognized as having been a bit of the 1999 stock market bubble, particularly in technology, that gave rise to substantial wealth effects. So, if one asks a question for the US economy, how long has it been since the economy grew at a reasonable rate, near full employment, with a sustainable financial foundation, one probably has to look to the mid-1990s to find such a time. In other words, it is not that secular stagnation means that the economy will always be stagnant. It is that the monetary policies that are necessary to counter secular stagnation will be able to achieve growth for a time, but at the price of considerable financial unsustainability.

This view is corroborated by what I think is a quite striking disjunction. There are by now a variety of economists with a variety of different methodologies who have attempted to do econometrics and estimate something that they think of as an equilibrium real rate or

uncontrolled real rate. The calculations all are based on the same idea. You look at what the real rate is and if the economy is soft and inflation is falling, then you say the actual equilibrium rate is lower. If the economy is fast and inflation is accelerating, then you say that the rate we see is below the equilibrium real rate, and there are a variety of econometric approaches that have been taken to it. Here is a survey by Anna Cieslak and what you see is their view of the present is, with one exception, that the current equilibrium real rate is significantly negative and certainly the consensus of model-based estimates is far, far below the notion of a two percent rate.



This is in stark, stark contrast with what the people who do without econometrics today; all of whom in one way or another sort of think the world is going to find its way back to what is normal.

## Overview of Equilibrium Rate Estimates: All

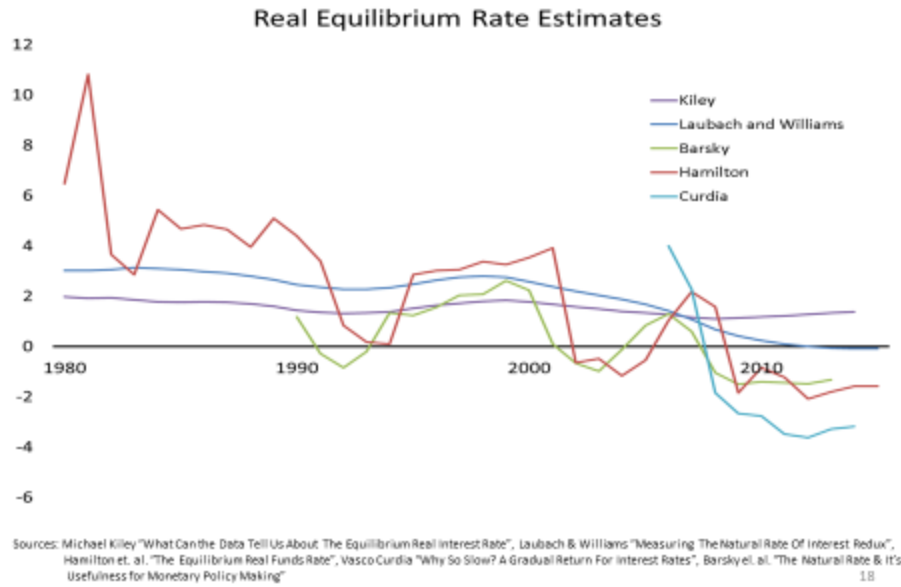


Sources: Anna Cieslak Discussion of "The Equilibrium Real Funds Rate: Past, Present and Future"

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My life experience tells me that if markets are saying something strongly and have been saying it for a long time, and econometrics is saying the same thing, and that the official sector thinks that things are going to return to normal because it is more comfortable to think that, that there is at least a substantial chance that the official sector should be giving more weight to what markets and econometrics are saying.

## Decline In Real Equilibrium Rate



Here is another version: This shows the, the estimates from the various models over time. They show, albeit in more noisy ways, a similar kind of pattern of general decline.

What is behind this? I am not going to take a lot of time going through this because I have talked about it on many other occasions.



## Why Might Equilibrium Real Rates Have Fallen?

### Increased Savings

1. Changes in distribution of income & profits share
2. Reserve accumulation or capital flight
3. Increasing deleveraging & retirement preparation

### Decreases in Investment Propensity

1. Declining growth rate of population and/or technology
2. Demassification of the economy
3. Fall in price of capital goods

### Other Factors

1. Interaction between inflation & after tax real rates
2. Increased frictions in intermediation
3. Increased global safe asset demand

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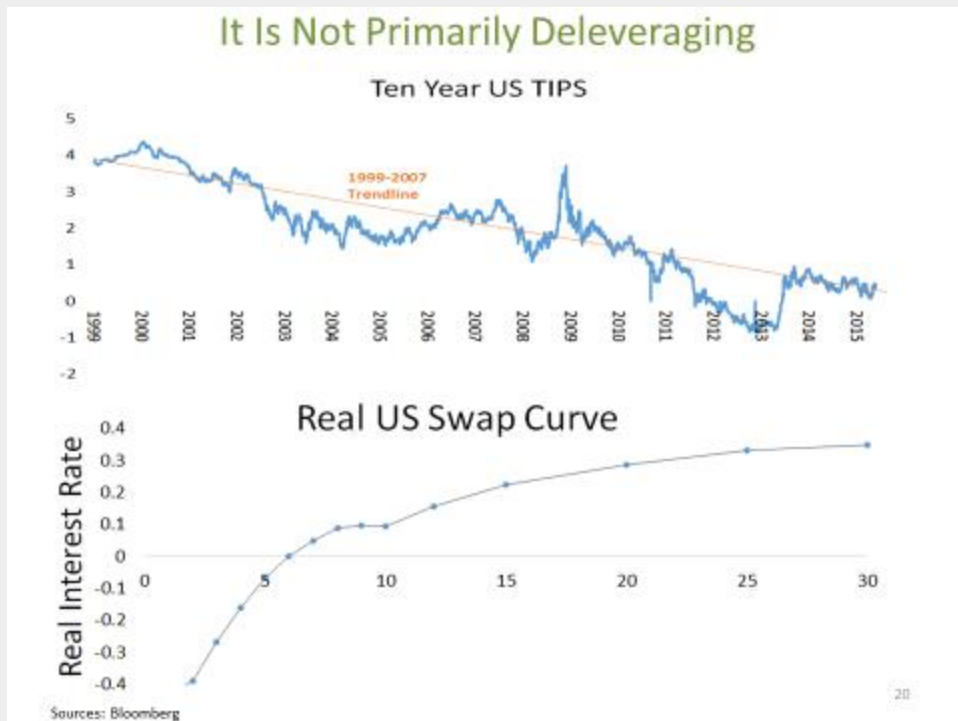
Increases in savings may be caused by changes in the distribution of income, reserve accumulation, increased de-leveraging, decreases in investment propensity, population, de-massification of the economy. Think about one area, AirBnB and the effect it has on the demand for new hotel rooms. Think about the fact that Apple and Google which are cutting-edge competing technology companies with very large stock market caps, have more cash than they know what to do with. Other factors: think in particular about increased frictions in intermediation.

I would add one aspect to this list which as I thought about it more I have come to think is not irrelevant. There is a real puzzle around the productivity statistics. We sure seem to see a lot of unskilled people being disemployed and it is hard to understand why technology that would unemploy a lot of unskilled people, would not also be leading to stronger productivity growth. It is plausible to believe that we have more productivity growth than we are measuring

and that the gap has increased through time. If that is right, that is another reason to think that real interest rates, as measured with our price indices are likely to be lower on a semi-permanent basis.

What is behind this? There are, I think, two views, broad classes of views, that are alternative to mine. Mine is that the broad technological features of the economy have changed that should not have been expected to be constant. That there are a variety of trends that are evolving that have led to lower real rates with the right presumption being that that will continue to be the case for quite some time to come. There are, I think, two primary alternatives to this line of thought, or at least ideas that have been presented as criticisms of this line of thought: One is the view, perhaps most prominently associated with Ken Rogoff, that this is really all about the aftermath of a financial crisis and is about the phenomenon of deleveraging, and that we just have to wait and things will revert to normal once we are through the financial crisis. This idea finds its expression in lots of official sector talk about headwinds; in other we have these headwinds so the rates need to be low now, but then the headwinds will stop and the rates will not need to be low.

I find it very difficult to imagine a headwind that is blowing hard in 2015 of which one should not assume will be blowing hard in 2018. It was easy to imagine in 2011 that there were a set of important consequences of the crisis that had not yet worked through, but I am not aware of strong candidates for the 2015 headwind that is not going to be a 2018 headwind or a 2020 headwind.



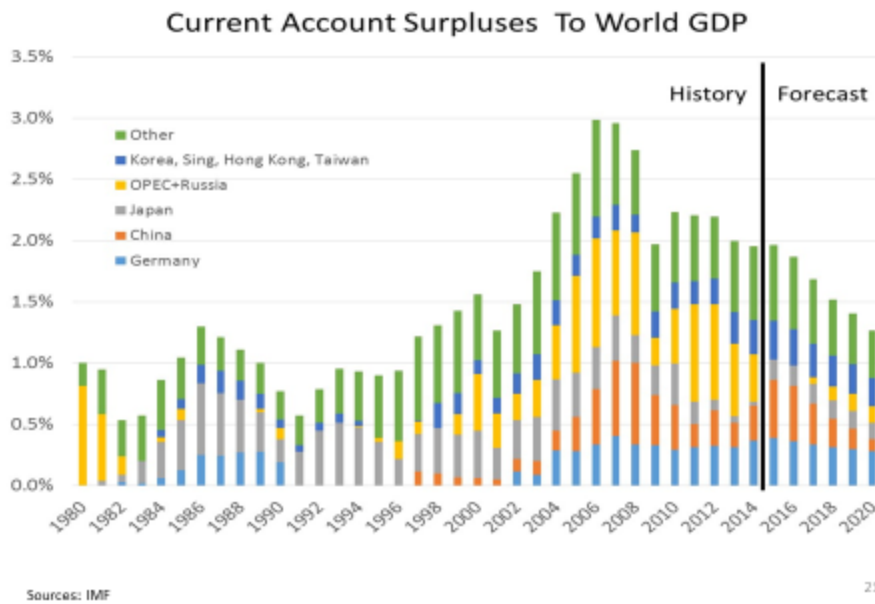
In any event, two simple quantitative observations reinforce my view: you could do this graph in a way that is less sympathetic to my taste, but I think the basic picture is right. If you simply fit a trend line through ten-year tips since they started existing through 2007, where we are in 2015 is more or less spot-on that trend line, and, so, if you had had to predict through extrapolation from any of these various trends that I have shown where we would be, this is about where we would be. Second, if you look at the swap curve, which, for the reasons I explained earlier, I think is probably the better way to measure real rates, the US swap curve is saying that they are going to be very low for a very long time. Thirty-year real swaps are at about 30 basis points.

Now, I do not have any intelligent views at all about macroeconomic life in 2050. So, if the idea is that we have headwinds that are going to blow for 30 years that are not going to blow permanently, I have no view at all on that question, but it seems to me

that the current market judgment is telling us that real rates are going to be low for a very long time, and it seems to me that the pre-crisis trend is suggesting something similar, and so it seems to me odd to maintain the assumption that there is something natural about the natural rate that will cause it to reverse to a normal level.

The second idea that is held out as an alternative is Ben Bernanke's celebrated savings glut. At one level, what exactly am I arguing about? The notion that there is a savings glut that is holding down real interest rates and the notion that there has been a structured change in the savings investment-balance that leads to lower equilibrium real rates are really kind of the same proposition. But when Ben talks about it, he seeks to draw the distinction in two ways. He puts great emphasis on the international factor and he regards the emphasis on the international factor as suggesting that this may all be transient or subject to being removed by better negotiation at the IMF.

## Bernanke's Savings Glut At Most Part of Story



As a crude proxy, what I have done here is I calculated the sum of all the world's current account surpluses as a proxy for the savings glut, and you see why Ben wrote the paper he did in 2005, but that savings glut has calmed down and is trending further down on current forecasts. And real interest rates are substantially lower than they were when Bernanke was writing in 2005. So, I do not doubt the relevance of an international savings glut, and, indeed, I believe that a pressing issue in thinking about all of this that I am not going to have a chance to talk about today is that we are likely heading into a very difficult period in emerging markets, which is likely to lead to substantial capital outflows from emerging markets, which is likely to exacerbate the pressure on equilibrium real interest rates in industrial world that I have described. So, I hope I have convinced you that the right thing to guess is the equilibrium real rates are, at best, low for long and not implausibly declining for awhile.

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What does all this mean? What Hansen talked about secular stagnation, these were well chosen words. He said, “This is the essence of secular stagnation, sick recoveries which die in their infancy and depressions which feed on themselves and leave a hard and seemingly immovable form of unemployment.”

## “Secular Stagnation” Dates To The 1930s



“This is the essence of secular stagnation - sick recoveries which die in their infancy and depressions which feed on themselves and leave a hard and seemingly immovable core of unemployment.”

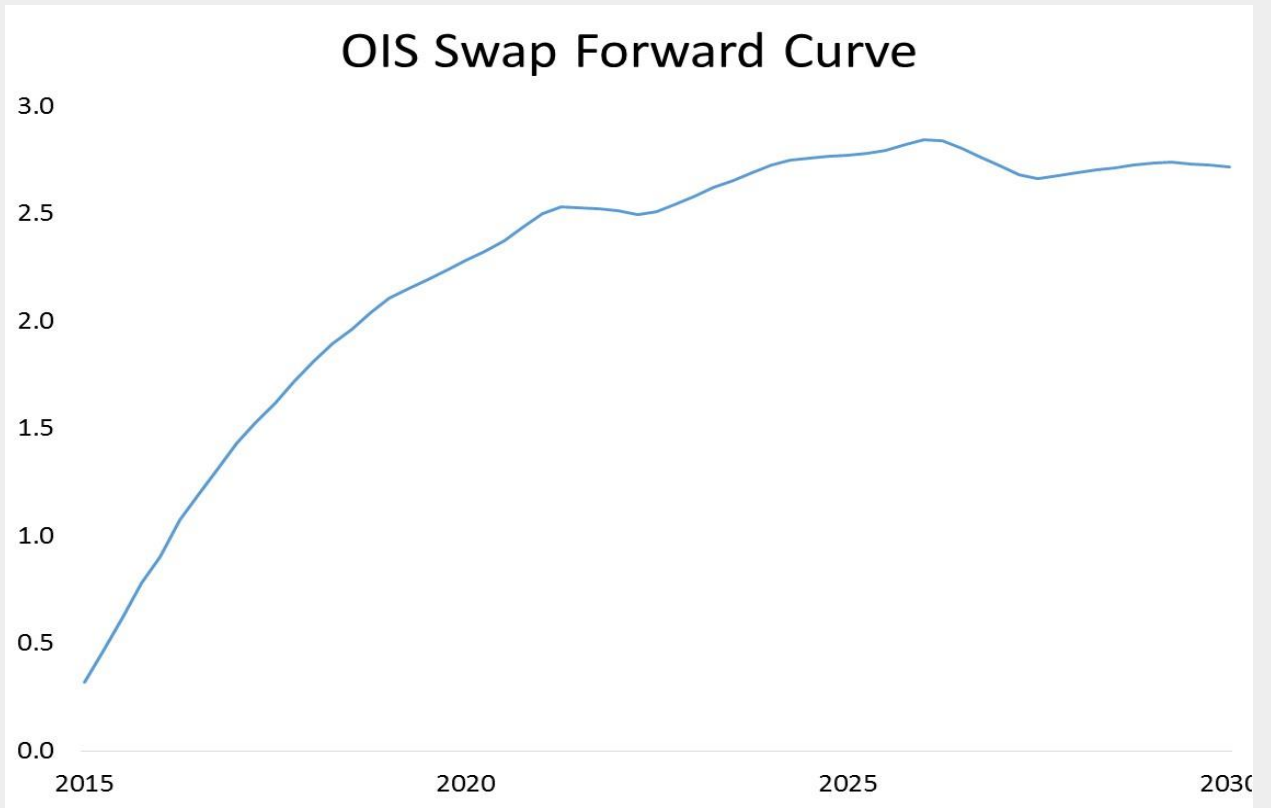
- Alvin Hansen, 1939

Sources: Alvin Hansen "Economic Progress and Declining Population Growth", American Economic Review, March 1939

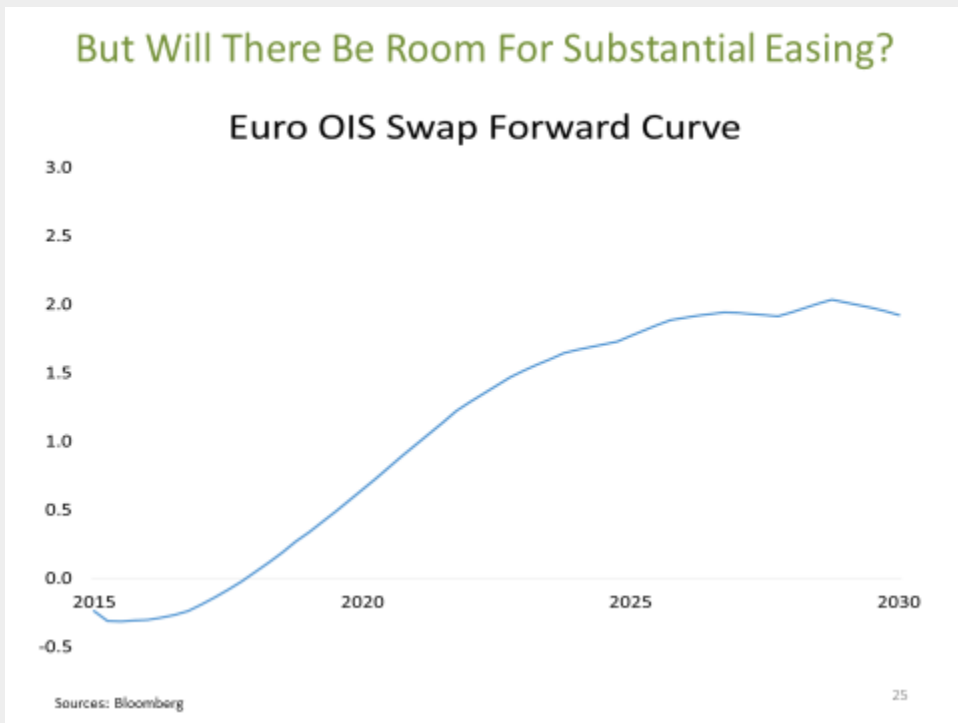
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If I were rewriting that sentence, I might substitute the word non-employment for the word unemployment, given that in the United States the unemployment rate is five percent, but the fraction of the adult population that is working is lower than it has been in 35 years. Notice that he did not say that there would never be any recovery; only that the cyclical fluctuations that took place would take place around a rather unsatisfactory level of performance.

Here are the OIS swap curves, that is, forecasted future fed funds for the major regions:



US, basically, gradually getting to two-and-a-half;

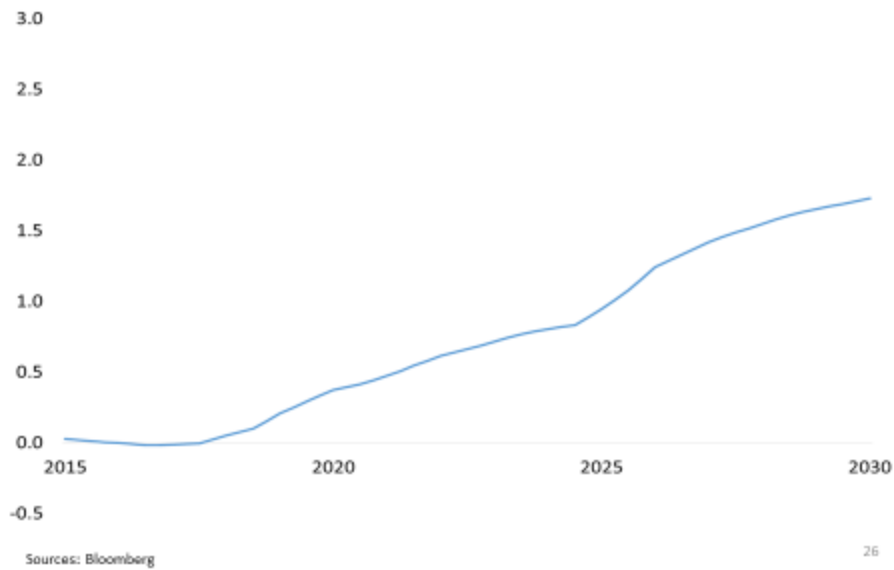


Europe more gradually getting to two;



## But Will There Be Room For Substantial Easing?

### Japanese OIS Swap Forward Curve



Japan more gradually getting to one-and-a-half.

How serious is this? Here is a simple and I think rather troubling calculation for the United States. We went back through history and we asked ourselves the question, take times when the unemployment rate is below six percent, so we are not still in a major downturn, and take times when the economy has been recovering for five years, and what are the odds of a recession over various intervals? And this obviously, these are obviously the conditions now, and that simple conditioning exercise suggests an estimate of close to 60 percent over two years.

## Expansions Don't Last Forever

**5+ Yrs Since Trough**  
**Unemployment Rate <6%**  
**Odds Recession**

1954 on    1984 on

Within:

6 Months	15%	16%
12 Months	32%	35%
18 Months	45%	47%
2 Years	57%	59%
3 Years	78%	77%

Sources: BLS, NBER

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## Expansions Don't Last Forever

Expansion Following Unemployment Below 6% and Recovery >5 Years Old



A somewhat more optimistic estimate comes from just observing that there is a consensus forecast and the consensus forecast has a root means square error, and calculating

the answer from the root means square error, that gets you an estimate of 25 percent over the next two years.

### Current Forecasts Imply 25% Recession Within Two Years

	<b>2016</b>	<b>2017</b>
Consensus Forecast	2.60	2.65
- Recessionary Growth	0.40	0.40
Recessionary Forecast Error	2.20	2.25
% RMSE of GDP Forecasts	1.80	2.10
	1.22	1.07
Percent Chance Recession	<b>11%</b>	<b>14%</b>

Sources: Survey of Professional Forecasters, Federal Reserve Updated Forecast Errors

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You do the calculation with three-year-plus expansions for Japan, Germany, the UK, and the US, what you see is there is a better-than-even chance of recession within the next few years in any place, and that there is an overwhelming likelihood of recession within the next few years someplace.

## Always A Decent Chance of Recession Intermediate Term

### Three+ Year Old Expansions Percent of Time Recession Within:

	2 Years	3 Years	5 Years
Japan	30%	40%	54%
Germany	53%	74%	98%
UK	28%	40%	63%
US	43%	63%	88%

\* 1970-on

Sources: NBER, Economic Cycle Research Institute

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Here are figures for United States recessions. I would summarize this, and I do not quite have this figured, by saying that every seven-and-a-half years the Fed has had to cut rates by 400 basis points in order to respond to an incipient downturn.

## Large Rate Cuts Are Often Necessary

### Recession Easings

#### Fed Funds Rate

	Start	Final	Easing
1957	3.5	0.7	2.8
1960	3.9	1.2	2.7
1970	5.6	3.5	2.1
1974	11.0	4.8	6.3
1981	20.0	9.5	10.5
1990	7.8	3.0	4.8
2000	6.5	1.0	5.5
2007	5.3	0.0	5.3

Sources: Bloomberg

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You can see where this is going. The right prediction is that there will be a down turn, that if it is to be addressed with monetary policy it will require a degree of monetary easing that would take one far below the zero bound. I think that if and when the Fed lifts off in the coming months that it will have said goodbye to the zero rate.

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What, then, are the policy approaches that are open to us? And here I can only be more speculative and offer my best guesses and invite challenge and discussion. I will have succeeded in my primary purpose if I have convinced you that some questioning in this space, the likely substantial inadequacy of monetary policy in its ability to use these conventional tools in the next recession is a problem that we are very, very likely to face.

## Monetary Policy Options

- Raise Inflation Target
- Forward Guidance
- Broader QE
- Negative Rates

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There are probably more broad strategies for monetary policy, but much of the discussion, it seems to me, centers on four: Raising the inflation target. This seems to me relevant to think about, but not for thinking about the next decade. As the figures with which I began this talk suggest, it is not now seen as likely by market participants that the inflation target will be hit in any country over the next 10 years. And simply announcing that the inflation target is even further up seems to be quite unlikely to change that situation, and, so, it seems to me that an inflation target increase unconnected with other measures is, sort of, besides the point.

A second category of options involves forward commitments to lower interest rates in the future. In Europe and Japan, this seems to me to be a matter of near irrelevance since rates are expected to be at zero for quite some number of years and it is very unlikely that statements of current policymakers about periods when they will not be in office are likely to

have large effects. It is conceivable that these could have some effect in the United States, but whatever the effect is, we have probably seen most of it, given the enormous emphasis put on the importance of the gentle path.

A third instrument is broader quantitative easing. I find myself with a kind of intermediate position. I cannot really understand the arguments of those who think that buying treasury bills is what central banks do, but buying longer-term bonds is some fundamental new kind of government intervention in a market economy that represents an outrageous distortion around market pricing. So, I was not with those who were offended by the concept a-priori, nor does it seem to me that any religion should surround the question of the size of a central bank's balance sheet. Nonetheless, I understand the concern that efforts to bring down rates by changing risk premiums past a certain point are likely to be inefficacious, the concern that, if one is able to find some capital expenditure which market participants would not do with a two percent Treasury Bond rate, but would do with a one-and-a-half percent Treasury Bond rate, there is at least room for doubt about both its quality, and I am very much aware of the various issues, the political and practical feasibility, that attend the use of QE.

Finally, there is the question of negative rates where the conversation falls in two categories: there is what I call the science fiction category of sometimes stamping money, or eliminating paper currency and there is the practical negative rate policy of the kind that is now being pursued. I think the question there, to which we do not know the answer, is how negative can rates really go on that path before people start storing currency or the like. When I was Treasury secretary, I was of the view that for other reasons having to do with law

enforcement, the world would be a better place without the \$100 bill, or the €500 Euro note, or the 1000 franc Swiss note. So, there may be scope to promote and make storage more difficult. I think it is hard to believe that the world needs a negative two percent rate. You are not going to be able to get to a negative two percent rate with current institutions, and I think the lesson of my slide about 2002 to 2007 is pregnant. Even if one can somehow achieve extreme liquidity, low rates, low discount factors, inflated asset prices, and a significant contribution to aggregate demand, one is still left with two large questions. One, what is the consequence of all of that for financial stability down the road, and two, is the essence of monetary policy that works by pulling forward expenditures? And there is, I think, some reluctance on the part of these enthusiasts to consider that if you pull forward expenditures, then they are not there to take place at the time from which you pull them forward. That, in a sense, easy money does have a little bit of the characteristics of an opiate; that you need to keep increasing the dosage to maintain a constant effect. Think about investment adjusting to a desired capital stock as the micro foundation of an IS curve and you see what I mean.

All of this, and I can see that my time is up and I will finish quickly, all of this leads me to very substantial skepticism about the ability to monetary policy as conventionally conceived to meet the challenge of the next recession when it comes.



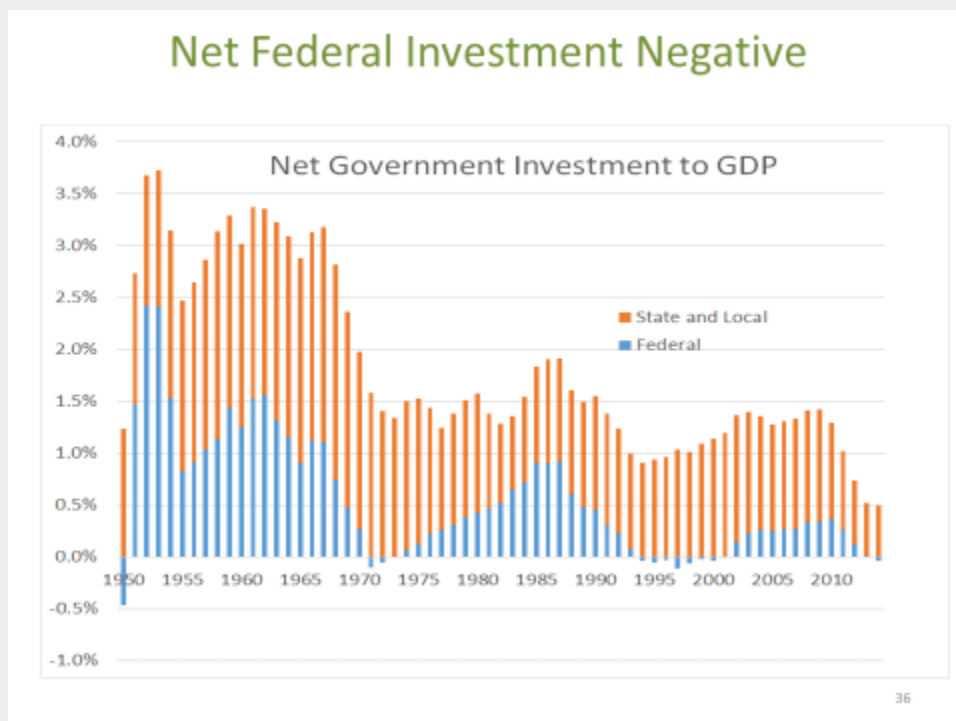
## Fiscal Policy Issues

- Ricardian Equivalence?
- Government Budget Constraint
- Fiscal Monetary Coordination
- Dynamic Efficiency

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I believe that it is appropriate that we go back to an earlier tradition that has largely passed out of macroeconomics of thinking about fiscal policy as having a major role in economic stabilization. For a variety of reasons, I do not think that Ricardian Equivalence is a substantial, practical obstacle to the use of discretionary fiscal policy or stepped up automatic stabilizers. I believe we need to study much more extensively than we have the set of issues around government budget constraints in worlds where it is very likely that  $R$  is less than  $G$ , in worlds where a safe financial instrument can be issued at bill rates that are with a very, very high probability less than growth rates. I am a skeptic on the notion that somehow calling fiscal policy “money financed” changes fundamentally its character. The arguments of Adair Turner and others seem to me to depend upon a notion that you are making some kind of permanent commitment with respect to future monetary policy by engaging in money-financed fiscal policy. But since no one knows what fiscal policy would have been, and monetary policy would

have been in 2026 in the counterfactual, I think that discussion is meaningless even with the best will in the world for commitment. And I think, ultimately, we need to think very hard about a whole set of ideas in a world where the defining problem seems to be an excess desire to save, to the point where the risk adjusted real safe rate is very close to zero. All of this is a very different world than the one I grew, than the one I grew up in as a macroeconomist.



I will just finish with these four conclusions: Lowflation is the problem Central Banks should be thinking about. Real rates are likely low for long. Central Banks may not be able to achieve on their own their basic counter-cyclical mandate. We need to contingency plan for a world of secular stagnation. Thank you very much.

## Conclusion

- Lowflation Is A Bigger Problem Than Inflation
- Real Rates are Likely Low For Long
- Central Banks May Not Be Able To Stabilize Economies
- We Need To Contingency Plan For A World Of Secular Stagnation

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