



Could the 'Taylor Rule' Have Prevented the Housing Bubble?

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WOODS: The Taylor rule has been cited for so long by so many people who describe themselves as free-market economists that it has become more or less the conventional wisdom that the Taylor rule is a good guide for the central bank in formulating monetary policy. Let's start off by explaining who Taylor is and what the Taylor rule says, in a way that's understandable to the layman.

MACHAJ: Well, John Taylor started working on monetary policy in the early '90s. He published a paper describing what the Federal Reserve System was doing in terms of monetary policy in the '80s, and he apparently discovered that the Federal Reserve was following some version of the monetary policy rule, a sort of fixed rule. It was not probably fixed like the famous Friedman rule. It was short lived, but still it was a general rule for monetary policy. And it was a purely descriptive paper. And then after a few years, suddenly, from this purely descriptive paper in the literature we have a flourishing of the concept of the Taylor rule, based on this paper as if it were some normative proposition how to conduct a correct monetary policy, whereas it was just a description of what was done in the '80s. And that's how we got into the whole Taylor rule thing.

Also, in the early 21st century, various versions of the Taylor rule were proposed for monetary policy. Unfortunately, they failed, but Taylor himself, in 2009, after the Great Recession started, published a paper arguing that the Federal Reserve System was not following his rule, and that was the reason for the real estate boom, and that was the main factor for the recession. And therefore, from his description of various, let's say, mildly pro-market people with a sort of Friedmanite sentiment for having government rules that are supposed to constrain the government, we have the sentiment somehow about following the Taylor rule that is constraining government in some way by proposing a form of monetary constitution or something like that in order to stabilize the economy. But of course, the main problem is that this rule itself is vague, it's unclear, and it actually opens the door for destructive monetary

policy because it's still a monetary policy performed by the government, by a government agency.

WOODS: Right, so that, of course, is going to be the ultimate problem with it. But one of the points you're making in the paper is that even if we accept the idea that the Taylor rule is a good policy, even if we accept the idea that we should have some rule that overrides what would spontaneously occur on the market, nevertheless there are practical problems even with implementing the Taylor rule, one of them being the problem of figuring out which data ought to be used. Depending on which numbers you use, you wind up getting a different Taylor rule. Before we get into that, what exactly is the Taylor rule saying the central bank should do? He is saying, if you would listen to my Taylor rule, interest rates would have been higher, and you wouldn't have had this housing bubble. So what does the rule tell the central bank it should do with interest rates?

MACHAJ: The Taylor rule itself is just an equation, and the equation can have many different forms. To make it as simple as possible to our listeners, the equation says that you are supposed to arrive at a certain level of interest rates set by the central bank based on two other main variables: price inflation and the so-called output gap. Apart from that, we have some additional coefficients that we put in the equation, and we arrive at the final number. The higher the inflation rate, of course, the higher the recommended interest rate by the central bank, and the bigger the output gap—that is, the further away we are from, let's say, potential production, potential output—then the interest rates are supposed to be lower in order to boost spending and boost the economy and reach the potential level. Now, there are two main problems with this approach, and one group I would name as actually mainstream objections to the rule itself, and the other group I would just name Austrian objections—well, the mainstream objection would be that you have various problems with measurements, as you mentioned. That is, how you measure price inflation, and how you measure the so-called output gap. And there are lots of articles written in the mainstream literature actually arguing that there are serious problems with measuring the so-called potential output, the potential production. Some mainstream economists argue that we should get rid of it and forget it about it, because various ways of measuring this whole potential output are actually so vague that we should downplay it completely and forget about it.

WOODS: Well, actually, let me jump in on this issue of the output gap, because this is the term that I would think most normal people are not familiar with. The output gap is something that you'll hear especially among Keynesian economists when there is a recession. They say that there's an urgent need for stimulus programs because every day that we don't engage in stimulus, we are losing potential output. Our factories are idle, our workers are idle. We have this potential to produce all of these goods because, look, we have the raw materials, we have the factories, we have the people, but none of these things are coming together, and stimulus can bring them together. In other words, every day that they don't come together we lose potential output, because we could potentially be producing at this level up here, but because

of the recession conditions and the unemployment of resources, we're producing only down here. So there's an output gap between where we would be producing if everything were gainfully employed as opposed to what we're producing now when some things are not gainfully employed. That's what's meant by the output gap. Am I right about that?

MACHAJ: Yep, yep. Well, on the very, very general level, the term itself, potential output, makes some sense, of course, because every economist would tell you that when we are in the recession, our production possibilities are not fully utilized. They are not fully used because we have high unemployment. We have various scarce and idle factors of production that we could employ to increase our production. So on the very, very general level this is very correct, but the question is, how do we solve this problem? So how do we make sure that all of those various factors are employed in fact? Various stimulus programs, government programs that are being used often result in some form of employment of those factors, but this employment is at the expense of malinvestment created by that government spending or that government stimulus—that is, by capital consumption. So there is a famous paper by Austrian economist Fritz Machlup about capital consumption in Austria, where he describes various government policies that resulted in some stimulus for economic activity, but the final result after many years was that there was huge capital consumption, and a decrease in a general level of wealth in the country. So the question is, of course, when we are in the recession, real production is below some level of potential production, this is true. When we have high unemployment, of course, we could reach higher employment levels, but the question is how do we get there, and how do we make sure that an increase in employment and an increase in the usage of factors of production results in permanent growth, higher growth, and sustainable growth? That's the key question.

WOODS: Right, exactly. It seems to me that the idea of the output gap takes for granted that the current configuration of the structure of production is optimal, and all we need to do is just rev it up again, start it up again. But what if in fact the employment of resources is incorrect in some sense? Then it's a problem. In other words, as you say later in the paper, they're thinking in terms of volumes instead of thinking in terms of patterns of capital.

MACHAJ: Exactly, that's the basic Keynesian message. That's the essence of Keynesian economics. Somewhere Keynes wrote in his *General Theory*, I believe, he said I am not concerned with the direction of employment; I am concerned about the volume of employment. So that's why you have all those arguments about people digging the holes and then filling them up again with whatever, trash, or putting printed dollars in bottles and then putting bottles down between the surface and then digging them up again. All those arguments are based on various Keynesian—Keynesian arguments actually are based on this notion that we are focused on the volume, not the direction? Classical economics and especially Austrian economics is focused more on the direction of employment—that is, how we employ resources in various stages of production and in various places in the economy? So this is what matters for efficiency in the long run. It's always easy to spend money on whatever and hire people, but

the big question is, can we go on with this for a longer time, not just for a couple of months or two years?

WOODS: So what is the role that this idea of the output gap plays in Taylor? Is he saying that we have to look at the output gap—which is a difficult concept to begin with and certainly a difficult one to measure—and have that be one of the factors that decides where the central bank should target interest rates?

MACHAJ: Right. There are various ways of measuring output, and there is no reason to assume that one way is better than the other. Each of those ways can give us totally different results. And then we will have different recommendations for the interest rate. So using one concept of the output gap, the result may be 5% and using the other concept of potential output and the output gap, we will have interest rate recommendations at, for example, 2.5%. That's a big difference between 5 and 2.5. That's a huge difference. But in any case, whatever type of way we are using—originally, Taylor was using a very, very comfortable, let's say, concept, he was focused on the trend. So he basically said, we just look at the long-term trend, and the long-term trend is showing us potential output, and we just focus on that. So this is one of the possible ways to do this. But whatever type of way you use, whether it's the general trend or whether it's based on some form of econometric models, or on some other ways, you arrive at a certain aggregate level of something, of potential output. That is to say we, for example, reach an observation that potential output is 3% higher than total production. The basic methodological problem with this is that it's a totally aggregated and averaged out number. So it's not telling you anything at all about the direction of employment. It's not telling you anything at all about malinvestments. It just tells you that some number that we have gathered from the current data, that is, Gross Domestic Product, and some totally invented variable that we call potential output, is different by 3%. So it doesn't tell you anything at all about the extent of malinvestments and problems in the direction of the employment of factors of production. That is to say, it connects in no way the interest rate with what is really going in the economy. And that's the fundamental macroeconomic problem that I see in this rule.

WOODS: Getting back to the practical issues of the different ways you can measure these sorts of things, output gap or inflation, so that you could wind up with different Taylor rules—depending on which data you use you would get a different outcome and a different policy prescription—I found it interesting in your paper that an economist at the Atlanta Fed, a David Altig, apparently came up with a version of the Taylor rule using his version of the data that showed that the Fed did observe the Taylor rule during the housing bubble years.

MACHAJ: Yes, exactly.

WOODS: So how useful can this thing be if it can be used both to condemn and praise the Fed?

MACHAJ: Exactly. Exactly. That's the thing. In my paper, I have Taylor's presentation where he shows that the Fed should have followed his version of the rule. Therefore, interest rates would be higher, so there would be no real estate boom. I also gave the example of Altig from the

Federal Reserve. Of course, he presented it during the boom years, and he showed we are following the Taylor rule, and it's working. Of course, he used different sorts of data. And then I give my version of the rule, and I show that we can have a Taylor rule recommendation with even lower interest rates than the ones that were set by Alan Greenspan. So we would have even a higher real estate boom than actually was the case. So all those things about the ambiguity of the data are present in the mainstream literature. Also, there is this notion that we can mention that when we collect the data, that's always a challenge, because the central bank, when it uses the data, it uses past data. But data is being constantly revised. For example, data about Gross Domestic Product can be revised, and the revisions are substantial.

Orphanides, who is famous in the literature for criticizing the Taylor rule, notes that we can only focus on past data, but this data can be revised within months, but we have to make a decision right now. So should we somehow deal with revised data after that, or should we be more focused on predicted data because, of course, we're interested not in past inflation rates, we are interested in future inflation rates, that is, we're interested in what will happen in the future. So this complicates the issue even more, and this is all present in the mainstream literature, so we're talking about the first group of arguments, that we have all those measurement problems about those variables that make the whole idea of the Taylor rule very, very difficult to be applied for a successful monetary policy. So it is kind of similar to problems with the so-called Friedman rule. You remember the famous Friedman rule, which is dead by now, about the money supply growth each year. Then it turned out that we have some problems because we are not sure how to measure the money supply. We have various ways of measuring that can be changed and so on. The Taylor rule is even more difficult because it's not only the question of one variable called "money supply." It's the question of invented variables such as potential output, it's the question of measured variables such as real production, which is being constantly revised, and it's the problem, of course, of price inflation. We have various indexes of price inflation also, right? They can differ. We have core inflation. We have the personal consumption expenditures index. We have various ways of measuring price inflation. So which one do we choose for the equation to arrive at successful interest rates? That's the challenge, and that's the challenge even from the mainstream perspective. That's one of the things in my paper that I tried to be focused on, that is, on mainstream objections to the rule itself because apart from that we have strong Austrian objections to the rule.

WOODS: Right, number one, the output gap concept itself, and secondly, the very idea of monetary policy. Of course, if we want to get into a really sweeping critique, we would star there.

When you and I shared an office for a week this summer at the Mises Institute, I showed you an article that David Stockman had written on the Taylor rule—David Stockman, the former Director of the Office of Management and Budget under Reagan—and I just want to share with people the paragraph that I pointed out to you in particular. He cites this lengthy passage from Taylor, and he says, "Only an academic power-seeker could come up with a Rube Goldberg

contraption that ludicrous. Just re-read the policy rule in the second paragraph above. The four quarter rate of inflation, when there are 27 different versions published by the government statistical mills—all of which have been manipulated and deformed over the years, one half the deviation of national GDP from ‘potential’ GDP, which is unmeasurable in a dynamic global economy, and a magic constant named two. At least he has the good grace to name this gibberish after himself.” You can’t write that in an academic paper, unfortunately.

MACHAJ: That’s true. There is also one thing that we have to remember. Even putting aside the arguments about ambiguity of the data and uncertainty about the measurements, there is a Hayekian element that we have to remember when we criticize the Taylor rule. Because even if you assume that we have some sort of version of the rule where we have output gap measures, and we have price inflation, and there we go, we have policy recommendations for the interest rate. The thing is that we are, by using that level of the interest rates, we are only targeting those two variables. That is, we are targeting certain levels of inflation rates and a certain level of these supposed output gaps. But we just satisfy our macroeconomic goals that we have in our minds or in our government papers. What we are missing is that by pursuing this type of policy, we can still have malinvestment booms and financial bubbles, and that’s the thing. Because even when you look at Taylor’s paper from 2009, where he demonstrates that the interest rates should have been higher, he gives no explanation how this equation, the Taylor equation, is supposed to relate to macroeconomic stability. He just assumes it. He just says, now look, interest rates could have been higher, and if they were higher, of course, there was no more investment boom. Well, that’s fine, but it’s not really a theoretical argument. Whereas the most important contribution by Hayek, in terms of macroeconomic issues, is the demonstration that even if we target some particular macroeconomic variable, we can still have malinvestment booms and financial bubbles. That is when we, for example, target the price inflation at 0%, we can still produce credit expansions that will result in malinvestments, and it is exactly the same thing with the Taylor rule. Even if we have assumed the Taylor rule, and we are targeting the so-called output gap to be zero, that is, to reach potential output, and even if we are targeting certain levels of price inflation at the same time, we still will produce credit expansion that may result in financial bubbles and more investment booms, and that’s the second part of the argument, which I find also very, very important aside from the mainstream arguments against the Taylor rule.

WOODS: Well, Matt, I appreciate your time today in taking us through this. As I say, this is a topic on which so many free-market economists go wrong to the point that a lot of people may just think without knowing much about it that the Taylor rule must somehow be a free-market principle, but of course, in the very nature of it, it can’t be. And then we see even the practical problems, quite apart from the theoretical ones with it, and we see that it just needs to be chucked along with the Friedman constant-rate-of-money-growth rule. Instead of trying to come up with all these rules, what about just letting the free market, that these people supposedly believe in, handle this question?

MACHAJ: That's the thing. Well, the interest rate is just a price. It's a price, and a price is supposed to reflect conditions in the market. That's the thing. It's not supposed to reflect the balance between general price inflation rate or the so-called output gap. The role and the function of the interest rate is to balance savings and investment in the financial markets. That's the key issue. So it's not supposed to be manipulated by the entity called the central bank in order to arrive at some macroeconomic goal of having an inflation rate at zero. Well, of course, it's always 2%, right? Stable prices are defined in the mainstream literature at 2% inflation, of course, to leave some margin for extra printing for the government. But in any case, the interest rate is supposed to balance the demand side and the supply side in the financial market, in the savings market, in the loan markets, and so forth. It's not supposed to satisfy our preferences for a particular macroeconomic variable to each reach its assumed goal. It's a very, very different function, and that's the rule. I don't know why people are so sentimental about the Taylor rule. Perhaps those pro-market, mildly pro-market economists, well, they think in terms of rules for the government, and some of them think that if we have short and simple rules for government activities, then it somehow results in a greater amount of free market, but it's not really the case. You can write a simple rule saying government owns everything. It doesn't mean that we are closer to free market when we advocate that rule, right? So we have to always be careful about various rules that they invent for the government. It's not the question of having simple and clear rules. It's also the question of having rules that result in lower government power. That's the thing.