



Episode 1,045: The Key Ingredient in Why We Understand the Economy, and They Don't

Guest: Mateusz Machaj

WOODS: So let's look at your book. I mean, obviously it sounds rather technical, but I know you have a great skill in explaining technical things to a mainstream audience – [laughing] if we want to call my audience mainstream. But you know, to an audience that's not all PhD economists, including me, by the way. So in particular, I want to pick and choose which topics we cover from this book, and in particular, there's part of the book where you cover something called potential GDP. This is a concept where you are, even if you're not a professional economist, going to come into contact with in the popular media, because Paul Krugman uses this concept all the time in his *New York Times* columns, and he uses – well, we won't even get into what he uses it for. We'll get into that later. The point is it's a frequently employed concept even outside of academia. So first, I want you to explain what is potential GDP supposed to tell us? How are they supposed to figure it out? And what are the problems with this concept?

MACHAJ: Well, in general, the concept of potential GDP is a pretty useful tool when we talk about pure theory and very, very general ideas about what it means to have equilibrated production, equilibrated consumption, and so forth. But as often happens with any concept in both micro and especially macroeconomics is that when you start to talk about real empirical stuff, you have to somehow relate that theoretical concept to the data that surrounds you.

And so when you're just introducing people to macroeconomics, it's pretty good to use the term potential output. And this is what I say in the chapter, especially when you consider various theoretical models, again, which are not very, very sophisticated in empirical techniques. So for example, when you're saying that right now we're in a recession, you generally mean that somehow real production is behind its potential. So it makes sense to actually say that there is some output gap, that we are missing something, that we are not employing all the resources that we have, and so forth.

Now, the problem starts to develop when you try to measure that output gap, that is, to measure potential production, measure potential output and then compare it to the so-called real output, which would be GDP, gross domestic product. And when you start to do that, you somehow have to, well, guess to some extent what that potential output may be. And there are various empirical methods to this, which are pretty dissatisfying, and what I came to realize when I was writing this book is that even in the mainstream literature, they don't agree about how this potential output should be measured.

And there are differing techniques. Some of them are econometric; some of them are just trend continuation; some of them are so-called production functions – that is, you imagine the economy in a very, very simple, physical metaphor. But all those methods, they give different results. What's even funnier is they are corrected afterwards, like after a while. So some people are joking that you discover potential output only years after it happened, so it doesn't really make sense to measure it right now or try to foresee for the next quarters.

But the puzzle is that this is what the government is doing all the time and this is what the central banks are doing all the time. They use this notion, because this notion is the fundamental tool for them to explain their policies. I mean, this is what they're saying. *Look, this is potential output, so we are lagging behind and we should do something to stimulate the economy to reach this level of potential output.*

Now, as I say, on the basic, didactic, theoretical, general level, like when you just describe the framework, it makes sense to say that real production is behind potential production. This is also what the Austrians are doing when they say we are in a recession or, for example, we are in the boom phase, which is unsustainable. What they mean is that the current projects are not sustainable with the available resources. So it is a concept that is implicitly even without naming, it is used in some way by virtually all macroeconomic schools. But it gets freaky when you try to make it empirical and try to relate it to something measurable. This is when controversy develops.

WOODS: And here, it seems like this plugs into the idea of the structure of production, because I think the Austrian view of this would be to say it's not valid to look at the years of an economic boom that's artificially fueled by the central bank, and then when we have a crash say, let's measure where we are in the crash against where we would have been if there had been no crash and the earlier trend had persisted. Our argument would be there was something wrong with that earlier trend. There was something that could not go on indefinitely about that earlier trend, so it makes no sense to judge the existing economy by a trend line that is only imaginary, that could not have gone on precisely because there was something screwed up about the capital structure to start with.

MACHAJ: Absolutely. Plus, also, there is one additional thing to be mentioned, which is that in the typical practice and theory of monetary policy as it is done right now by most central banks, potential output is just one-dimensional variable – meaning you're just saying that potential output is 5% higher than total output. So you're comparing two aggregates. It's one dimension. Whereas for the Austrians, it's two dimensional variables, because first you talk about production, but then you talk about production at the particular moment of time, which means that it's more complicated than just one variable, than just one simple index showing you, oh, this is 5% too big. No, no, no, that's not the point. The point is that it's not big at the right moment in production time.

WOODS: And I think now – probably I should have done this before, but it would be a good time for you to explain in your title the phrase "structure of production." We hear it a lot from Austrians. I don't hear it much from anybody else. So first, I'd like to know

what's meant by the concept, and secondly, why doesn't anybody else seem to think it's useful?

MACHAJ: IN general, structure of production means – it's the concept that was started with Carl Menger, and then it was developed by Böhm-Bawerk and then later Austrians, and then the most sophisticated story you may find and the best one is the one in *Man, Economy, and State* by Murray Rothbard. Before that, you have Mises' treatise, which does not really have lots of production theory, and so we would have to go back to Böhm-Bawerk. But in the case of Böhm-Bawerk, you don't have a monetary framework that Rothbard develops. And then later Austrian thinkers when you think about Mark Skousen or Huerta de Soto or even somewhat Austrian-friendly – we can say George Friedman to some extent – they are actually inspired either implicitly or explicitly by what Rothbard did in *Man, Economy, and State*.

And so the idea of structure of production is that production can be divided into stages. And the fundamental problem of sustainability and equilibrium and investments which are not malinvestments in the production structure is consistency between the stages – that is, consistency starting from very early stages of production and then ending with the consumer sector. It's the basic tool also to be used in the business cycle theory, mostly Austrian business cycle, but it doesn't have to just be the Austrian business cycle, actually. But it's a useful concept to explain the idea of investment mistakes, which appear in various clusters when you consider recessions and depressions and the business cycle and so on.

Your question, why is this concept not developed in the mainstream literature, well, it's truly hard to answer. I think the main reason why it is not developed is that there is pretty big limitation on how to apply this concept to actually measure production. If you treat macroeconomics as just sets of aggregates that you can just add together and then compare in some forms of equations or some form of general connections, then you need a simplified index. And you cannot create it if you say that production is segregated, that you have various stages which can be connected together in a sustainable or unsustainable manner, and sort of the only way for this is to have a market discovery process. I mean, it's such a general statement, which is problematic to be measured, because if it were somehow, some sort of general macroeconomic planning could be possible. But the whole point is that it's not because we cannot do this type of measurement.

So that would be I think my general answer why it never really got so much attention, because how are you to do the macroeconomic planning if you're saying macroeconomic planning is not that easy because you have two dimensions in here, not just one dimension.

WOODS: Right, and so therefore, this concept would not – because it can't be mathematically manipulated, it's just a nonstarter for a lot of people for whom that's what economics is all about. Now, we talked about – this is Episode 1,045.

MACHAJ: My happy number.

WOODS: Yeah, I know, what a coincidence that is, right? How about that?

MACHAJ: [laughing]

WOODS: On 1,036, we actually went through and gave a couple of examples of what the structure of production would look like for a particular good, starting at very remote stages with — it could even be with somebody who was inventing it or doing research about how it might be brought about, and then raw materials, and all the way down to the process of physically delivering the product to the retail store and marketing it and having it be present in the retail store. And we explained that.

So what's helpful about that and what makes the Austrian analysis unique, I guess, is that — and we see this, by the way, in the efforts by Keynesians to refute us. They don't even seem to understand what we're saying because they can't conceive of a structure of production. So they say we say that there's just too much investment going on, that the number is too big, according to us.

MACHAJ: Right.

WOODS: That's all they can think of, is there must be some number and they think it's too large.

MACHAJ: Overinvestment, right.

WOODS: Right, yeah. But instead, it's that the interest rate manipulation distorts the kinds of investments you would undertake, because obviously, anybody could tell — we think about a home mortgage, helps to explain the principle. Obviously, if there's an even very tiny decrease in interest rates, it really affects the monthly payment on your 30-year mortgage. If there's a tiny decrease in interest rates and you've got a one-month mortgage, you won't even notice it. So that is to say the lowering of interest rates tends to encourage projects that bear fruit only in the more distant future. And again, on episodes where we talk about the business cycle, we can explain how this eventually comes to grief. It creates a pattern of investment that is not in conformity with what the public wants and is willing to sustain. But that's where the structure of production comes into all this.

Now, I'm looking at the back matter of your book. Because I've looked through and I know the different topics that you cover, but here where you're trying to sell the book, so to speak, one of the questions is, "How do economic bubbles develop?" And I'm curious about how you would explain that and why would you say that it's not the case that economic bubbles could simply develop because, let's say, there's some kind of a mania about something. There's a craze about something psychologically and that creates a bubble. Why is that an inadequate theory of bubbles?

MACHAJ: Right. In chapter six of my book, I try to talk not only about Hayek's theory; I also talk about two interesting theories. One is by sort of post-Keynesian Hyman Minsky and the other one is sort of Keynesian too, Richard Koo, the so-called balance sheet recession. And so Minsky actually tries to focus on the aspects of maniacs and psychological factors, as you mentioned them. But when he describes the process, somewhere in the back he mentions fractional reserve banking and credit expansion, but he doesn't really put it up front. So he sort of focuses on the psychological aspects,

but what the important fact is the institutional structure of the banking system with the central bank, which orchestrates the credit expansion.

And for him to even not consider that is very problematic. I might agree that of course everything starts off psychologically. Everything starts in our mind. But what matters is the real phenomena that constitute our choices. As Roger Garrison once put it, you cannot spend your expectations, so you need some form of leverage and financing, and even if being a maniac is an important element, what matters is where you get the capital and how you finance that. And you finance it through the banking system, through the banking system that affects everyone because money is present everywhere in the system.

And a sort of similar story goes with Richard Koo. What he says about the problems in the balance sheet structures of the banks and of the financial companies, about derivatives and so forth, really you can learn a lot by reading this, but the main problem with Koo's theory is that it's a balance sheet recession. But what about the balance sheet boom? I mean, when you talk about the balance sheet recession, it's not that it pops from a very, very sustainable balance sheet. No, it pops because first there is balance sheet expansion, and then there is balance sheet recession. And so what Minsky and Koo are saying about manias first in the booming phase and then sort of when people are very over pessimistic during the recession, some of it may actually fit into the Austrian theory, but what they miss is the central picture – that is, the first booming phase and its institutional framework.

Also, if I may add because what you said was very relevant about the interest rates and investments at various moments in time, it reminds me about the main difference between the Austrian school and the mainstream school. The main difference is that the Austrians always emphasize the problems of complexity and problems of fragility. And this applies to everything when you look at it. It applies to everything. It also applies to the idea of production and potential output. It also relates to the capital structure. You probably had many people on the show saying that capital goods are heterogeneous. It means that you cannot just easily substitute them and the question of substituting them and connecting together the questions of complementary goods, you cannot subject it to simple form of planning and simple form of measurement.

It works the same for any other field. Like consider, for example, theory of economic growth. In the mainstream theory, economic growth very often is treated with aggregates, like K being one aggregate for all capital goods or L being aggregate for all labor hours and the workers. Okay, sometimes they make it more complex. They add variable H , which would be human capital, but then again it is subjected to the same type of criticism, that you cannot really find one unit for this stuff because you have all this heterogeneity and if you want to explain the diversity in growth between different countries, you have to relate to some qualities, not just quantities.

So the same thing when you consider society. For mainstream economists, perhaps a simplifying metaphor would be to assess society in terms of measurable stuff like how many people you have, what is their height, and so forth. But as we know, society is so much more. There's just so many qualities within societies that you cannot easily subject to measurements. And it works exactly the same with the capital structure and the concept of structure of production.

WOODS: Your book also takes on the subject of the neutrality of money, and the Austrian position is that money is non-neutral. I'd like you to explain what does it mean to say that money is not neutral, and what real-world consequences does that have that we would need to care about it?

MACHAJ: Non-neutrality of money means basically that any change in the money supply always leads to real-world effects and real-world redistribution effects, sometimes referred to as Cantillon effects. Neutrality of money, to start off with the opposite – neutrality of money would mean that if you increase the money supply – for example, if you increase the money supply two times, all prices just double immediately and everyone knows about this and all the contracts and also past prices – that is, prices signed from the past contracts – they are also readjusted. So no one really loses and no one wins.

Now, the real-world increase in the money supply is always decentralized. So you have a money counterfeiter or you have a central bank or you have a gold mine if you're on a gold standard, and you create new money or you dig it out and you spend it in the economy, it leads to the adjustments which are unproportional. Some of the people receive their incomes first. Some of the people are latecomers. And therefore, prices are not rising everywhere to the same extent. This leads to the redistribution process or form of distribution process, if you prefer to use distribution instead of redistribution. And so you cannot actually design a monetary system in which you have complete money neutrality. You will always have some real-world changes.

Additionally, this will always happen even when you have the so-called programs of matching money supply and monetary demand. You can never match it, because the increase for the demand for money always happens elsewhere than increase in the money supply, and so those two things when they happen at the same time, you increase the money supply in one place and you have increased monetary demand in the other side of the economy, this will lead also to redistribution effects. And both of those effects, as Mises says, they coexist, but they work in different fields.

WOODS: All right, so people who say money is neutral and doesn't have these real effects, first of all, why is this argument even being had? Is the point that – are the Austrians trying to say that when you engage in monetary policy, you're doing more than just affecting prices; you're also affecting real resources? But wouldn't a Keynesian accept that? *Yes, of course monetary stimulus affects real resources. That's precisely what we want it to do.*

MACHAJ: Right, right, of course. To be honest, hardly anyone believes in money neutrality. I mean, when you talk to any economist, they will tell you of course money's not neutral. But the point is how non-neutral it is. Like, how relevant is that? And for example, you have some real business cycle theories and equilibrium business cycle theories in which economists are saying, okay, it has some effect but it's just some form of wealth effect, which disappears after a while and it's not very relevant, not very important and the sources for fluctuations and cycles are elsewhere. I mean, hardly anyone really believes that after 2008.

And then on the other hand, you have economists saying, okay, money is not neutral, but right, as you say, Keynesians, the point is that we increase the money supply

because it stimulates the sectors, but the problem is that without it we would have underemployment – and they can give the numbers – and when we have underemployment, we have real production lagging behind potential output. And this is when you need the measurement we just talked about. So the rationale for using the monetary stimulus or actually even fiscal stimulus for some of the Keynesians – the rationale rests on the idea of potential output.

So when you actually criticize and attack this concept of potential output, the whole house becomes a house of cards. It just potentially can fall on itself, because without the idea of having this total output, total measurement of production, some imaginary construction which is to help us direct real-world policy – without that, you're in big trouble because you cannot make your rationale.

WOODS: Let me just ask you just like a current-day kind of question. Over the past ten years, you could say that the central banks of the world have engaged in highly unusual, unorthodox monetary policy, by their own admission. There's no textbook urging them to do some of the things they've done. And they could argue that we've managed to hold things together. We have not had a repeat of the 1930s, as difficult as things have been. We've managed to hold things together, and that at least shows that, even if we haven't been perfect, activist monetary policy, you can declaim against it all you like in your theoretical treatises, but it helps in the real world.

MACHAJ: Meaning that they did not allow for the catastrophe to happen? They saved the world? That's the argument?

WOODS: Right, they saved the world, yeah.

MACHAJ: Well, the counterargument could be – Well, first of all, there were different policies there, right? So if you criticize TARP, it's sort of different than criticizing what Bernanke did. You had to make sure of fiscal and monetary policies, and I believe you should use different types of arguments against both of those. But to focus on just the general policy of saving and bailing out, what they did was basically to promote various assets in the system. And as we've seen from the liquidation of Lehman and what happened afterwards, it's really hard to make an argument that if some of the other banks failed, then it would result in a total catastrophe. AIG was sort of saved, but what happened after that in the stock markets and so forth was not really much better than what happened after Lehman.

And so I don't think they can claim that the past ten years were so great because of their interventions. I mean, one could actually argue that they created a sort of – in some of the fields, they created a sort of zombie economy where you just, instead of cleaning out the system and getting rid of toxic and bad assets, you just somehow sustain it and you subsidize bad projects. So even though it was not a catastrophe, you can always speculate that counterfactually, things might have been better if you'd just allowed things to be developed differently.

WOODS: Let's wrap up because, unfortunately, I have to sort of run because of the craziness of this week. But obviously people ought to read the book. It's a good – if you have some background in Austrian economics, then this is going to fill in some gaps for you. I absolutely guarantee you it's going to fill in some gaps where you are

not quite sure how it all ties together. This'll tie them together, *Money, Interest, and the Structure of Production*. But just give me an overview of why it is, if you were trying to explain to the man on the street who says I see different economists and I don't know which ones to listen to and which ones seem to understand things better, what is it about the Austrian approach that makes it the most likely to be correct, that makes it the most realistic?

MACHAJ: I would say being suspicious of any variables, any indices, any models, perhaps even sometimes too suspicious – to have some form of self-criticism, sometimes we Austrians tend to be too suspicious of everything. But you know, it's always good to be this one person in the room complaining a little bit about any modeling which may turn out to be wrong, and that perhaps instead of having central modeling and then putting all the modeling on all the rest of the people and all the rest of companies in the system – like it was done, for example, in the case of regulatory policies before 2008, 2007 – defending this view that somehow you have to impose all the interpretations, all the monetary, all the legal interpretations on every market participant in all of the financial market, perhaps this may be creating a huge, systemic risk, because then if there's something wrong with those policies, then everyone is hurt, like it did happen in 2007, 2008, when it turned out that all those great regulations in the banking system, they actually channeled malinvestment into specific assets and they actually encouraged the banks to go into risky businesses.

And so it's always good to have some form of distance and a different perspective on the things, that perhaps what we are measuring here and what we are assessing here, it just may turn out to be wrong. And if we want to impose it on everyone, there will be huge, systemic risk in doing so.

WOODS: Well, again, the book is *Money, Interest, and the Structure of Production: Resolving Some Puzzles in the Theory of Capital*. There's a lot in here. We could talk for quite some time on this, but you are coming up against an American holiday and that trumps everything, which I have to get ready for. But I'm glad you were able to talk to me. You're on vacation right now and you're speaking to me from a hotel in Poland. How about that?

MACHAJ: Right, yeah, but you never say no to Tom Woods.

WOODS: [laughing]

MACHAJ: So yeah, you just have to do it when he calls you. It's always being good to be part of the best podcast in the world.

WOODS: Oh, I appreciate that, and you sent me the book and I got it thinking that we could talk about it on the show. And then I got it and said, "How about talking about it immediately?" And you were kind of thrown that, well, hold on a minute. I'm on vacation. I basically said, "Screw that! I had three people bail on me this week. You've got to do" – [laughing] So that's how, ladies and gentlemen, it came to be that on Thanksgiving Day we are talking about capital theory. All right, anyway, Mat, enjoy your vacation. Talk to you again soon.

MACHAJ: Okay, you too. Thank you very much. It was a pleasure as always.