

THE CONTINUING IMPORTANCE OF AUSTRIAN CAPITAL THEORY

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...Now that we've got the introductory humor out of the way, let me turn to my formal remarks. The title of my talk is "The Continuing Importance of Austrian Capital Theory." Although there are many differences between Austrian economics and the neoclassical mainstream—particularly Keynesian macroeconomics—I think the Austrian focus on the structure of production is critical, especially in recent times. Indeed, you can't even *state* the Mises-Hayek theory of the business cycle if you use the standard Solow-type model of the economy, where the very concept of a "malinvestment" is impossible.

In the Solow-type approach, there is simply a capital "K" for the total amount of capital in the economy. You could talk about there being too little or too much investment in new capital, given the production technology and preferences, but it wouldn't even be possible to talk about an "artificial boom" where a growth in the capital stock was physically unsustainable and had to result in a drop in output.

This outline shows the points I'll make during the rest of the talk. First I'll contrast the Austrian approach with the Keynesian and Market Monetarist approaches, focusing on their different diagrams. When I show you the Hayekian triangle and Rothbard's version of the "circular flow" diagram, you will see the richer nuance of the Austrian approach.

Then I will explain the single best analogy of Austrian business cycle theory, which came from Mises himself: his fable of the master builder.

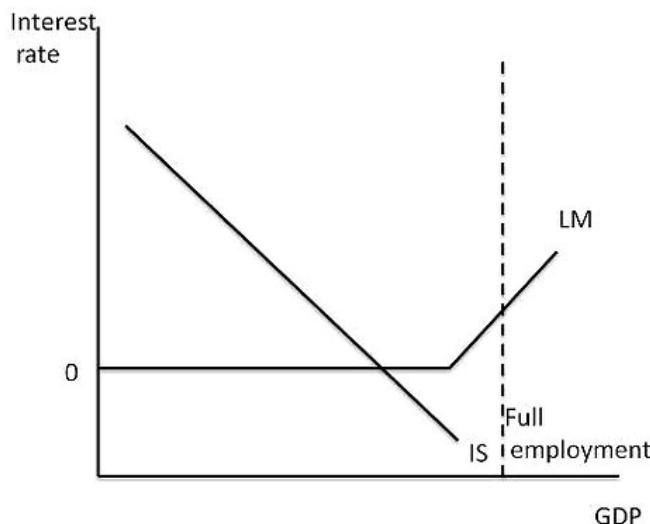
I'll wrap up with some empirical evidence to show that Austrian business cycle theory can explain things that the Keynesians cannot.

¹ Robert Murphy, Free Market Institute, Texas Tech University . The following text summarizes the presentation Murphy gave in Rosario on August 22, 2016, though the oral remarks were delivered extemporaneously.

The Keynesians and Market Monetarists

Now we turn to some examples of the Keynesian and Market Monetarist approaches. First we have the following screenshot from a blog post by Paul Krugman:

Most spectacularly, IS-LM turns out to be very useful for thinking about extreme conditions like the present, in which private demand has fallen so far that the economy remains depressed even at a zero interest rate. In that case the picture looks like this:



Why is the LM curve flat at zero? Because if the interest rate fell below zero, people would just hold cash instead of bonds. At the margin, then, money is just being held as a store of value, and changes in the money supply have no effect. This is, of course, the liquidity trap.

And IS-LM makes some predictions about what happens in the liquidity trap. Budget deficits shift IS to the right; in the liquidity trap that has no effect on the interest rate. Increases in the money supply do nothing at all.

SOURCE: Paul Krugman, "IS-LMentary," New York Times blog post, Oct. 9. 2011.

In the screenshot, Krugman is arguing that the IS-LM framework made two correct predictions about the Great Recession period (which suffered from a liquidity trap, in his view) that his conservative and libertarian critics got wrong. In particular, the people warning about high interest rates and/or price inflation because of budget deficits and quantitative easing were wrong, and so their (implicit) models were falsified.

Now let's turn to Scott Sumner's blog. Sumner is perhaps the single most influential proponent of Market Monetarism. Here's a screenshot from him:

But on Monday, Lautenschlaeger broke with normal etiquette to publicly criticize this stance, saying that ever looser monetary policy had its limits and that money printing had yet to stabilize sinking price inflation, its formal goal.

"I don't see any reason for further monetary policy measures, especially not for an extension of the (asset) purchase program," she said, ten days ahead of a meeting at which policymakers will set the ECB's course.

"It buys time but does not heal the structural causes of a slack economic recovery... We should give the numerous and massive monetary policy efforts time to take full effect."

Suppose you tried to illustrate Lautenschlaeger's concerns using an AS/AD model. The most straightforward approach would be to shift the AS curve to the left. But this would cause higher inflation, whereas the eurozone is facing excessively low inflation, and is trying to bring inflation up to its 1.9% target.

SOURCE: Scott Sumner, "Always double check your claims with the AS/AD model," EconLog blog post, Nov. 25, 2015

In this screenshot, Sumner is first quoting from the financial press, which itself was quoting a European policymaker on why the ECB should refrain from additional monetary stimulus. Sumner argued that using the AS/AD model—which stands for Aggregate Supply and Aggregate Demand—if Lautenschlaeger's diagnosis were correct, then we would see high price inflation. But since we see low price inflation, her diagnosis must be wrong, and therefore monetary stimulus is appropriate.

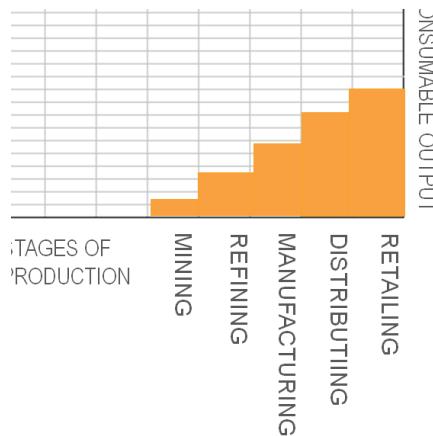
The common thread in both Krugman and Sumner's analysis is that they are gauging the wisdom of budget deficits and monetary easing by using a model of the economy consisting of two intersecting lines. Imagine if you went to a doctor, complaining of chest pains, and he drew two intersecting lines on a chalkboard before diagnosing your condition and prescribing the treatment. Would that reassure you?

Why then should we place any faith in policy prescriptions generated by models of the economy that consist of two intersecting lines?

The Hayekian Triangle

The Austrian School relies on a much richer understanding of the intertemporal capital structure of the economy. The fact that their approach is more sophisticated and complex doesn't mean they're *right*, of course, but it does make me trust their analysis more than two of their leading competitors. We see this in the Hayekian triangle.

Now this particular graphic is from Roger Garrison's excellent



PowerPoint presentations, available at his website. Particularly if you've had training in mainstream economics, I encourage you to check them out. Garrison does a great job translating the Mises-Hayek theory of the business cycle into a framework more accessible to neoclassical economists, using terms such as the PPF and loanable funds diagram that they would recognize.

In this diagram, we break the economy down into 5 separate sectors: mining, refining, manufacturing, distribution, and retail. Of course these are somewhat arbitrary, and even here the Austrian "model" of the economy is woefully inadequate. Even so, it can illustrate the boom-bust cycle in a way that the IS-LM or AS/AD diagrams cannot.

The Rothbardian "Circular Flow"

Now we come to what I might call Rothbard's version of the macro "circular flow" diagram. If you've taken a standard macroeconomics

course, you are familiar with this diagram, which shows money flowing around the economy in one circle, with goods and services flowing the other way. You can see how landlords, capitalists, and workers get paid their incomes, which they then spend on output in their roles as investors and consumers. Although the mainstream circular flow diagram helps us think through certain aspects of the macroeconomy, it has no structure of production.

In contrast, look at Rothbard's diagram, which I took from *Man, Economy, and State*. Let me first walk through the figure so you understand how to read it. We start at the top, at the "6th order" good. An entrepreneur advances 19 ounces of gold to the owners of land and labor, to hire their services. Perhaps we imagine workers harvesting wheat from the field. Then this entrepreneur-capitalist sells the wheat to the lower stage (5th order), to a different entrepreneur who pays 20 for the wheat. (That's the shaded box below.)

At this point, we know that the 6th order entrepreneur received a net income of 1 ounce gold, because he advanced 19 ounces originally to the land owner and workers, and eventually sold the product for 20 ounces. That's why you see a "1" flowing off to the left of the "20." It shows the interest income accruing to that stage.

Now, in addition to paying 20 ounces of gold for the wheat, the 5th order entrepreneur advances an additional 8 ounces for more raw

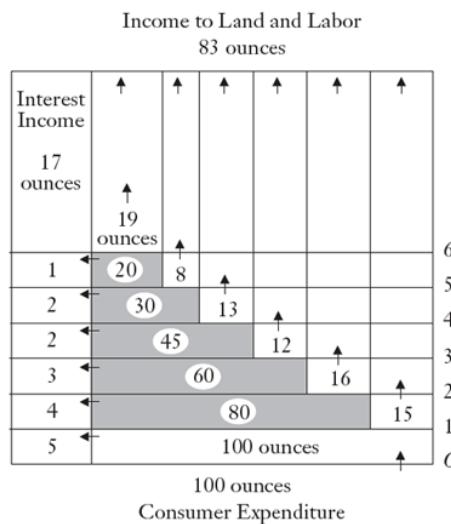


FIGURE 41. INCOME ACCRUING TO FACTORS
AT VARIOUS STAGES OF PRODUCTION

materials and labor. That's the "8" flowing up in the diagram. Perhaps this represents the materials and labor necessary to turn the wheat into flour. Then the 5th order entrepreneur sells the flour to the 4th order entrepreneur for 30 ounces of gold. The net 2 ounces of interest income flow to the left at this point.

If we skip to the final stage, we see the 1st order entrepreneur had to advance 80 ounces of gold to the previous stage to obtain its output; let's say it's loaves of bread coming from the commercial bakeries. He also had to advance an additional 15 ounces of gold for natural resources and labor power in order to run the grocery store where the bread is sold. Finally, the neatly packaged loaves of bread are sold to household consumers for 100 ounces of gold. That means the final capitalist earned a net 5 ounces of gold of interest income on his investment, which you see flowing to the left in the bottom row.

Now step back and survey the whole scheme. The idea is that this system gets into a long-run stationary state, where each period the 6th order capitalist advances 19 ounces of gold to start a new batch, and the entrepreneur-capitalists in each stage likewise do their respective parts to reinvest most of their revenues into the business. Once the pipeline is up and running, every period 100 ounces' worth (in money terms of course) of bread comes shooting out of the production process to be consumed by households.

How can the households afford it? Well, the total interest income to the capitalists is on the left: they collectively earn $1+2+2+3+4+5 = 17$ ounces of gold each period. Along the top, moving left to right, we see the total income payments each period to land owners and workers, namely $19+8+13+12+16+15 = 83$ ounces. All told, the people in this economy earn 100 ounces of gold of income period, which they completely exhaust on bread purchases.

Now Hayek originally used his triangle to show what happens when an influx of new credit can push down interest rates to artificially low levels, and thereby distorts the structure of production. However, for our purposes I want to just show you one thing regarding this Rothbardian version, to see how much richer it is than the mainstream approach.

If you asked a mainstream economist about the GDP of this hypothetical economy, she would say it's 100 ounces worth of real output, which consists of 100 ounces of consumption (C), and 0 ounces of government spending (G), investment (I), and net exports (X). The

mainstream press would pick up on that statistic, and point out that this economy was built 100% on consumption. If households cut back on bread purchases, Keynesians might warn of impending disaster since retail spending drove the entire economy.

However, this would be a very shortsighted way of describing the situation. In fact, every period total *gross* investment is $19 + (20+8) + (30+13) + (45+12) + (60+16) + (80+15) = 318$ ounces of gold, which is more than triple the level of consumption each period. (Conventional GDP accounting only looks at *net* investment as a contribution to real output. Gross investment is excluded for fear of “double counting” production in a given line.) If the entrepreneur-capitalists engaged in more consumption spending, there wouldn’t be more bread to go around: the same number of physical loaves would shoot out of the pipeline. But such a move—if it interrupted the gross reinvestment—would bring the system crashing down. Notice, however, that it might take several periods for the ramifications to hit the households.

Although Rothbard’s diagram is, to repeat, absurdly simplistic if we are trying to represent the global economy, nonetheless it can show the potential problems that are set in motion when false price signals lead entrepreneurs in “higher” stages to do the wrong thing.

The Austrian Theory of the Business Cycle

In the interest of brevity let me summarize the essentials of what Mises called the circulation credit theory of the trade cycle, or what is nowadays called Austrian business cycle theory.

First, market interest rates are *prices* that help firms and households coordinate their activities. In general, Austrians stress the importance of market prices to guide entrepreneurs to invest in projects that best satisfy consumer preferences, given the constraints of resource supplies and technological know-how. When it comes to interest rates specifically, they help coordinate intertemporal plans. Loosely speaking, a low interest rate is a signal that capital is relatively abundant, and so can be tied up in longer projects (other things equal), while a high interest rate serves as a large “penalty” on duration.

Now, what happens if the market interest rate is low *not* because of genuine savings by households, but because of bank credit pumped into the financial sector? This leads to *malinvestments*, where long-term projects are started even though society does not have the resources to carry them all to completion.

What this means is that “easy money” causes more pernicious effects than mere price inflation, as one might think from the Keynesian and Market Monetarist paradigms. On top of the general reduction in the purchasing power of money, inflationary policies also cause the interest rate to fall to artificially low levels. The capital structure becomes unsustainable, making a recession inevitable.

Ironically, the Austrians view the recession as a cleansing period, and in that respect is “good” or “healthy” for the system. In contrast, the ostensibly prosperous boom period is where the errors occur. Note the contrast here between the Austrians and other schools.

The Master Builder Analogy

Still the best analogy to illustrate the Austrian business cycle theory, and their typical policy prescriptions, is Mises' own “master builder” fable. Imagine a builder who has various quantities of lumber, glass, shingles, bricks, and so forth at a work site. He also has various workers with different skills. The builder draws up a blueprint for a house, based on the available supplies.

However, imagine that the builder thinks he has 5,000 bricks to draw from, when in reality he only has 4,000. If his blueprints call for using all of the bricks, then clearly the house cannot be completed as designed. (Mises assumes the builder only has access to the original materials on site.)

Now, when is the best time for the builder to find out the truth? Clearly the answer is, “Immediately.” The longer the illusion persists, the more difficult it will be to salvage the project. The worst time to discover the mistake is after the 4000th brick has been laid, if the builder still thinks he has 1,000 additional bricks at his disposal.

Now it's true that if the builder learns the truth early on, this realization will cause a short term “recession” in building activity. The builder will tell all the workers “STOP!!” while he surveys the state of the unfinished house and the remaining supplies. Using this information as a regrettable given, the builder would then redesign the house. Obviously the new house will be less ambitious than the original blueprints called for, but the sooner the mistake is caught, the better the final house will be.

The analogy Mises drew with the broader economy should be clear. It does not make us wealthier to have the banking system flood the credit markets with cheap credit. This process doesn't produce more factories,

farmland, or surgeons. But artificially low interest rates are analogous to the builder thinking he has more bricks than he really does.

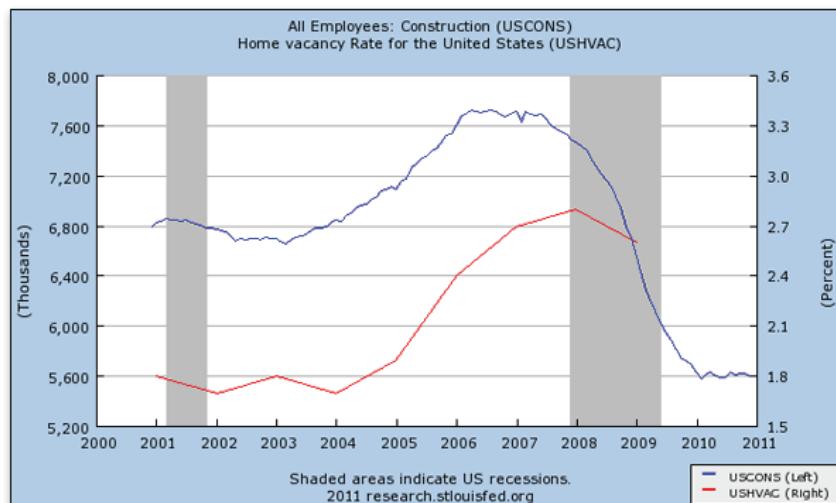
We can also extend Mises' analogy by supposing a government official wanders up to the construction site soon after the master builder has told everyone to "STOP!!" while he revamps the blueprints. The government official is baffled by the "irrational" cessation of productive activity. Why, he sees skilled carpenters lounging under a tree, while there are lumber and bricks lying available on the grass. The government official orders the carpenters to jump up and start constructing a gazebo with the lumber and bricks, so that these "idle resources" can be put to use and the unemployed can go back to work.

Yet it is clear that this "stimulus" plan from the government official has pernicious consequences. It will divert scarce resources into channels that the master builder almost certainly would not have chosen. It only exacerbates the original problem, making the recovery that much harder. The finished house will now be even less desirable because of the government official's meddling.

Krugman vs. ABCT

Now that I've explained the basic theory, let's look at some empirical support for Austrian business cycle theory. The first comes from an argument Paul Krugman had made on his blog, where he claimed that the recession was due to a general shortfall in demand, and *not* to a "reallocation problem" flowing from an overinvestment in housing.

There was plenty of evidence that I dug up in response to Krugman, but for our purposes here let me show just one. We can see that as the housing bubble intensified—indicated by the rising share of households with no occupants, as they were being built and then held off the market for speculative purposes—more and more workers were sucked into construction. Then when the bubble burst and speculators dumped their houses (in which they were *not* living), the vacancy rate sunk back to normal levels and construction workers had to move into other channels. This pattern is exactly what you would expect to see if the Austrian explanation were true, whereas with the Keynesian story, it's hard to see why the demand for houses "should" be at pre-crisis levels when vacancy rates were still so historically high. (In fairness it would be better to see later data for home vacancy rates, to see how quickly they fell as the recession progressed.)



Explaining the “Predictive” Power of the Yield Curve

Finally, in the few moments I have left, let me show you that I think Austrian business cycle can explain the apparent predictive power of the yield curve.

It is well known in financial and economic circles that the yield curve typically inverts before a recession, and, moreover, that an inverted yield curve is typically followed by a recession. (The frequency of false negatives and false positives depends on the exact measure used to define recessions and “inverted yield curve.” But the fit is amazingly tight for the postwar U.S. economy.)

Given this pattern, the problem is how to explain it? Mainstream economists may invoke a consumption-smoothing argument, whereby some market participants foresee an impending recession, and in their attempts to adjust intertemporal allocation, cause short-term interest rates to spike while long-term rates plummet. (Intuitively, investors don’t want to sell short-term bonds and buy long-term bonds, because they want to transfer wealth to the future when their income will be lower due to the recession.)

However, a more elegant explanation flows from the obvious implications of Austrian business cycle theory. During an inflationary boom, with new credit being pumped into the financial sector, short-term rates are held low. However, long-term rates are (typically) higher because of the monetary inflation, since the banks can’t alter

“real” interest rates in the long run, *and* on top of that the influx of new money raises expected price inflation over the coming years.

However, at some point the central bank and commercial banks become alarmed by the rising price inflation, and so they turn down the monetary spigot. The slowdown in new money injections causes short-term rates to spike. The switch to monetary tightness reduces the expected long-run rates of price inflation, leading investors to accept lower nominal yields on long term bonds.

In this explanation, the apparent predictive ability of the yield curve is *not* due to investors collectively “already knowing” about the recession, and then looking at the yield curve to learn what they already (collectively) know. Rather, in my interpretation, the forces that *cause* the boom-bust cycle—namely, periods of monetary inflation and monetary tightness—also cause the “normal” yield curve and then its inversion.

Conclusion

In this talk I had to be brief, but I hope I’ve demonstrated the continuing importance of Austrian capital theory. With its rich concept of the structure of production, the Austrians can explain how monetary disturbances lead to “real” malinvestments in physical capital goods, which then necessitate a crash and recessionary period. In contrast, the simplistic framework of Keynesian and Market Monetarist models cannot even entertain the possibility of a boom-bust cycle due to malinvestment.