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Source: *The American Journal of Economics and Sociology*, Vol. 74, No. 2, Competing Theories of Economic Crisis (MARCH, 2015), pp. 278-297

Published by: Wiley

Stable URL: <https://www.jstor.org/stable/43818666>

Accessed: 16-03-2024 19:12 +00:00

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The Austrian Theory of the Business Cycle

By FRED E. FOLDVARY*

ABSTRACT. The Austrian school theory of the business cycle is based on the proposition that an artificial expansion of the money supply reduces the transaction rate of interest below its natural rate, which stimulates excessive investment in capital goods of long duration, and then when the rate of interest rises back up, these investments stop, and the economy falls into recession.

Introduction

The Austrian school of economics began with the publication of *Principles of Economics* by Carl Menger ([1871] 1976) in Vienna, Austria. Menger wrote in reaction to the German historical school, which sought to obtain economic theory by induction, generalizing from historical practice, and also in opposition to the prevailing labor theory of value, the proposition that the value of goods derives mainly from the labor that produces them. Menger's foundational Austrian theory includes the proposition that economic values are purely subjective, that basic economic theory is deductive, that capital goods have a time structure, and that money originated in commodities that facilitate indirect exchange. Menger was also one of the pioneers of marginal analysis, such as with marginal costs and marginal utility.

Extending Menger's theory of capital goods, followers including Ludwig von Mises and Friedrich Hayek developed a capital-based theory of the business cycle, as well as critiques of socialist central planning and central banking that extended to governmental intervention. The Austrian school of thought is now worldwide, as Mises, Hayek, Schumpeter, and other ethnic Austrians emigrated and spread its concepts, although the school's ideas remained outside the neoclassical orthodoxy. The global financial crisis of 2008 aroused renewed interest in

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American Journal of Economics and Sociology, Vol. 74, No. 2 (March, 2015).

DOI: 10.1111/ajes.12098

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Austrian economics and its explanation that the low interest rate policy of a monetary authority would fuel investment bubbles, followed by a collapse of asset prices, a financial crisis, and a severe recession. As the Austrian school of economic thought provides a coherent theory of the boom-bust sequence, and fits the historical patterns of the major cycles, it merits inclusion in a collection of boom-bust explanations.

The Role of Interest

The Austrian business cycle theorem begins with the interest rate. In Austrian thought, the rate of interest is based on “time preference.” As a fundamental premise of economics in general, time preference is the proposition that most people usually prefer to obtain goods sooner rather than later. People have a preference for goods now rather than waiting until later because of the finite span of life, and because of the uncertainty of the future. The sooner one obtains a good such as a car, the longer one will be able to enjoy it, and one desires it now rather than later because one may not be healthy or even alive in the future.

Time preference makes present-day goods have a greater subjective value than goods to be obtained in the future. The rate at which goods tend to be discounted over future years becomes what the “Swedish Austrian” Knut Wicksell ([1936] 1965) called the “natural rate of interest.” As stated by Roger Garrison (2001: 6), the Austrian school takes the “rate of interest to reflect a systematic discounting of future values.” This rate of pure interest is apart from the effects on debt service payments from inflation, taxes, and risk. In a completely free market, without any intervention by a central bank, the interest rate would be the natural rate.

Pure interest is about time rather than money. Interest is paid in order to shift a purchase from the future to the present day. For example, one could wait several years to save enough funds to purchase a car, or one could borrow funds to buy it now. The interest is a premium paid to shift the purchase to the present day.

Interest received can be an income to any input factor of production, depending on the use of the funds. If a worker borrows in order to pay for education that makes him more productive, the payment of the interest is part of his higher wage. If one borrows to buy land, the

interest is paid from the rent of that land; the interest is land rent paid to the lender. If one borrows to obtain or construct capital goods, then the interest is the yield of the tools. Hence, unlike the use of the term "interest" by some classical economists to refer to the yield on "capital," the time-preference meaning makes interest a return on any input obtained or enhanced by borrowing.

Implicit returns are not really interest, although they are referred to as implicit interest. For example, the imputed return on machines owned by a firm has an opportunity cost of the interest that would be obtained if the machines were sold and the funds invested in risk-free bonds. But if the firm did not borrow funds to obtain the machines, the implicit return on the machines is a capital yield, and not really interest, just as the rent of land is not really interest if the owner does not have a mortgage.

Interest being based on time rather than money, the natural rate of interest would be in effect even in a barter economy, as a borrower of goods would pay back the value of the goods, plus extra goods amounting to interest. Time preference can be affected by productivity, as, for example, greater productivity might induce people to invest more at the present day, increasing the preference for present-day investing relative to investing in the future. But the origin of interest remains time preference, however it may be affected by rates of growth or the advance of technology.

In standard economics, the rate of interest is determined by the market for loanable funds, funds available for borrowing. The supply of loanable funds comes from savings and from money creation. Savings is defined as income minus spending for consumption. Time preference is a general tendency rather than a universal absolute, hence some people with a strong concern for their future would save funds even at an interest rate of zero. With a higher rate of interest, more people are willing to save funds, so at some quantity of saved funds, the supply curve of savings rises with higher rates of real interest, i.e., the nominal rate minus the inflation rate.

The demand for loanable funds is the quantities that borrowers seek to obtain at various rates of interest. With lower rates of real interest, borrowers will obtain more funds. Hence the demand curve for loanable funds slopes down, like other demand curves. The rate of pure

interest is set at the intersection of supply and demand, where the quantity supplied of loanable funds equals the quantity demanded for borrowing. This market for loanable funds is consistent with time preference, as both the upward-sloping supply curve of savings and the downward-sloping demand curve for borrowing originate in time preference. Shifting a purchase from the future to the present day has a cost, and the lower that cost, the greater the shifting.

Economics divides spending into two categories, economic consumption and economic investment. The economic meaning of "consumption" is the using up of the economic value of a good. Economic investment means an increase in the stock of capital goods and human capital, in contrast to the financial meaning as a purchase of an asset such as shares of stock, land, or bonds. (If a person hoards currency, then that currency becomes a capital good investment that he is, in effect, purchasing.)

Thus the borrowing of funds can be either for consumption or for investment. "Net savings" is gross savings minus what is borrowed for consumption. Since the total savings in an economy equals total income minus total consumption, in a closed economy, with no funds or goods to and from abroad, net savings equals investment. (In an open economy, if imports equal exports, then net savings also equals investment.)

Therefore, interest is not merely funds paid by borrowers to savers. The rate of interest has a very important role in the economy. The interest rate equalizes net savings and investment. If savings rise, the interest rate falls, so that the greater savings becomes equal to the greater borrowing for investment. If the demand for loanable funds rises, then the interest rate goes up, equalizing the greater borrowing to a greater amount of savings. The rate of interest adjusts so that all funds saved equal funds borrowed. (In an open economy that also uses foreign savings for domestic investment, the interest rate plays the same role, except that the supply of loanable funds is enhanced by foreign savings, so this added complexity can be ignored for the purpose of analyzing the role of interest.)

In assuring that net savings equals investment, the interest rate also allocates spending between consumption and investment, assuring that all income gets spent. Thus the interest rate has three related jobs. First,

the interest rate equalizes savings and borrowing. Secondly, the interest rate equalizes net savings and investment. Thirdly, the interest rate allocates spending for consumption relative to investment.

Austrian economics posits that any imposed interference with the natural rate of interest will hamper its economic role, resulting in distortions of spending and of prices. Such skewing results in an inefficient use of resources, and can also possibly set in motion a sequence of events that ends up in a recession and depressed economy. An understanding of how this happens requires an analysis of the role of capital goods.

Capital Goods

Capital goods are items, other than human beings, that have been produced but not yet consumed. Neoclassical economics generally treats goods as homogenous, as if all capital goods were clones of one good. To a great extent, this homogenization of capital goods is done to facilitate the mathematical treatment of production functions: $Q=f(K,L)$, output as a function of labor and capital, where land is ignored for production and then included in capital for the distribution of income.

This uniform treatment of capital goods as one variable can be useful in models of economic growth based on the accumulation of capital goods, as a greater amount of capital goods yields greater growth in the next period. The problem is that the neoclassical models fail to account for the coordination between investment and consumption. As stated by Peter Boettke (2012: 83): "Economic actors must decide where to allocate scarce capital goods to produce final products that meet consumer demands. Production plans of some must mesh with the consumption plans of others. If these plans don't mesh, resources will be misallocated and thus wasted." This misallocation occurs when the transaction rate of interest is pulled up or pushed down away from its natural rate; the market is not allowed to coordinate production with consumption. The Austrian explanation is based on recognizing capital goods as heterogeneous.

In Austrian theory, there are two ways of structuring capital goods. First is the time structure of capital goods, or, as expressed by Garrison (2001: 15), "the intertemporal structure of capital." Austrian analysis

differentiates capital goods according to their duration, how long they last until consumed. Goods of short duration, hence a fast turnover, are designated as “lower-order goods” or “goods of first order” (Menger [1871] 1976: 80). An example is the inventory of perishable foods in a grocery store. These are also referred to as “circulating capital.” Goods of the longest duration, or “period of production,” are called “higher-order goods.” Thus the structure of capital goods is like a stack of pancakes, ranging from the lowest order to the highest order.

The higher the capital goods are in the stack, the more investment in these responds to interest rates. Capital goods with a short duration are little affected by the rate of interest, since the asset is held for a very short time. Goods of long duration are very responsive to interest rates, especially as companies often borrow to finance such investments. Thus low interest rates induce greater investment in higher-order capital goods, while high interest rates reduce such investment. Low interest rates make the stack taller, while high interest makes it shorter.

The other way that Austrian economics structures capital goods is by how far they are removed from ultimate consumer goods, those typically bought by households. As Carl Menger ([1871] 1976) wrote: “The times at which men will obtain command of goods of first order from the goods of higher order in their present possession will be more distant the higher the order of these goods.”

For example, the production of apples provides a consumer good. But suppose there will be greater apple production if the grower applies fertilizer and irrigation. The time and resources spent for the capital goods of soil additives, canals, and pumps imply less time and resources available, in that duration, for growing and harvesting and transporting the apples. So for that time, there is less production and sales of apples, but the investment will yield more apples in the future. The Austrian economist Böhm-Bawerk ([1884] 1959) called this process, investing in capital goods that later increase output, “roundabout production.” Since the ultimate payoff is further in the future than the provision of apples in the present day, the capital goods of roundabout production are higher-order goods more sensitive to the interest rate than funds used for immediate production.

The time structure combines with roundabout production to create an overall structure of capital goods from lowest to highest order, which

becomes ever more responsive to interest rates the higher they are in the structure. Peter Boettke (2012: 83) describes the investment decision that entrepreneurs must confront. "The capital structure coordination problem exists because capital goods have multiple-specificity and must be allocated among competing investment projects." Entrepreneurs must choose where in the capital structure to optimize their investments.

When the natural rate of interest prevails, there is no bad consequence from a low versus high rate of interest. If a low interest rate is caused by a high savings rate, then the high amount of investment is offset by a low amount of consumption. If a low interest rate is caused by little borrowing for investment, then the low investment is offset by high consumption due to the high preference for present-day consumption. The amount of consumption versus investment, and the resultant economic growth rate, depends on the time preferences of the people. If people generally desire to consume more at present, and less in the future, they will save less, the interest rate rises, and there is less investment and growth, but that is not a problem, as it is their choice. In a pure market economy, the relative investments in higher- and lower-order capital goods reflect the prevailing natural rate of interest, which is based on the time preferences of the public.

The Effect of Central Bank Manipulation

Economic trouble arises when the rate of interest is not allowed to do its job. For example, when a central bank, such as the U.S. Federal Reserve ("the Fed"), manipulates the money supply, this can affect interest rates.

Friedrich Hayek ([1933] 1966: 180) wrote that "[t]he cause of cyclical fluctuations is that because of the elasticity of the value of money, the rate of interest is not always equal to the equilibrium rate, but is in the short run determined by banking liquidity." Ludwig von Mises ([1924] 1980: 401) had earlier theorized that when interest rates are pushed down by a monetary authority, the structure of capital goods becomes distorted.

Suppose the Fed has a monopoly on the money supply, as it has had since the end of the gold standard in 1933. When the Fed expands the

money supply, the Fed increases the deposits or reserves held by the banks. For example, the Fed buys bonds from the public, and the check received by the seller is deposited into his private bank account. The private bank deposits that check into its account at a Federal Reserve Bank, and that Federal Reserve Bank raises the reserves of the private bank by the amount of the check.

With greater reserves, the banks lower their lending rates to induce greater borrowing. The rate of interest paid and received, the “transactions rate” of interest, gets pushed down below the natural rate. This artificially low transaction rate induces greater investment in higher-order capital goods.

The most important of the higher-order capital goods is real estate and its associated materials and durable goods. The construction of houses requires a greater production of inputs such as lumber, bricks, cement, and glass. The purchase of a house induces the purchase of durable goods such as furniture, appliances, and tools. Likewise, an office building or a factory needs related capital goods. The construction industry in the USA has provided over a fourth of total investment (Matthews 1967: 98). The great amount of labor in construction and complementary industries results in massive unemployment and a decrease in the demand for goods when the boom ends. For example, in 1929, total direct employment in construction was 3 million, but if complementary industries are included, 9 million were employed (Long, 1940: 7). Arthur Burns (1969: 69) concluded that “few other industries have the power to convert an increase in activity into a sustained expansion.”

The conversion of what would have been quickly circulating capital goods into a greater amount of fixed capital was first analyzed by Tugan-Baranowski (1913). Typically, a central bank pushes down the transaction rates of interest when its directors seek to stimulate economic growth. But, as explained above, the lower interest rate induces more borrowing, especially for higher-order capital goods. Thus, as happened in the years prior to the recession of 2008, much of the borrowing goes to buy and construct real estate and its associated goods.

Not only does the structure of investments in capital goods get altered, but also the structure of relative prices. The increase of the money supply does not merely raise prices, but also distorts ratios such

as the purchase price of real estate relative to rentals. Prices rise fastest and greatest in the assets most bought from borrowed funds. This phenomenon is called the “Cantillon effect,” after the Irish-French economist Richard Cantillon ([1755] 2010).

The monetary inflation causes price inflation, so after the economy is once again growing, the central bank reduces the growth of the money supply, which slows down the increase in the loanable funds, or investable resources. The transaction rate of interest goes back up, perhaps now above what would have been the natural rate. The higher rate of interest now flattens the structure of capital goods, and investment in higher-order goods, such as real estate, slows down.

Projects that were profitable with low interest rates are now unprofitable with the higher rates. In Austrian economics, these now unprofitable projects are called “malinvestments.” The decrease in the higher-order investments result in a layoff of workers in those industries. In real estate, the affected workers include not just those in construction, but also real estate brokers, appraisers, financial firms, and the producers and sellers of raw materials and durable goods. As their income drops, they demand fewer goods, and the rest of the economy produces less. The fall in investment takes down with it the financial industry that provided the funds that later become bad loans.

Although the business cycle operates via the banking and credit system, Friedrich Hayek ([1933] 1966: 182) acknowledged that there is no reason why the original disturbance has to be of monetary origin. “Nor, in practice, is this even generally the case, and it naturally becomes quite irrelevant whether we label this explanation of the Trade Cycle as a monetary theory or not” ([1933] 1966: 183). However, Ludwig von Mises ([1949] 1966: 554) emphasized that “every nonmonetary trade cycle doctrine tacitly assumes—or ought logically to assume—that credit expansion is an attendant phenomenon of the boom.”

The Austrian economist Joseph Schumpeter ([1939] 1982) posited that the critical times in the business cycle are the points of inflection, where the upward swing switches from acceleration to deceleration and vice-versa for the downward swing. The peak and trough are visible and dramatic, but the causal change occurs at the inflection. If these are sine-wave-like curves (though not necessarily symmetric), the first derivative would measure the rate of increase or decrease at a point,

while the second derivative would measure the rate at which the increase or decrease is changing. At the point of inflection, the second derivative changes sign: an upswing that was accelerating or moving at a constant rate now slows down. As Hansen (1964: 180) notes, during an upswing, the peak of net investment is reached at the point of inflection.

In the Austrian theory, the cause of the major depressions is distortions in the previous boom. "Once the second derivative turns and stays negative, the decline in the first derivative is inevitable. A negative second derivative continuously slows down a boom as it climbs to a peak" (Foldvary 1997).

Economists of all schools of thought generally agree that fluctuations in investment drive the business cycle. Other schools focus on fluctuations in investment caused by clusters of inventions, pessimistic or optimistic emotions, random shocks, land speculation, and other causes. The Austrian school economists do not deny these elements, but believe that the chief cause of the major recessions and depressions has been the malinvestments and subsequent termination of these, caused by the interventions of monetary authorities in the money supply and rates of interest.

The malinvestments caused by artificially low rates of interest also cause economic waste. The resources used to build the capital goods with a long period of production take away resources that could have financed goods with shorter periods. Instead of empty houses that remain unsold, there could have been a greater production of household goods and associated inventories. If the natural rate of interest had prevailed, the investments in goods with a quicker turnover would have provided sustainable production and employment.

Boom-bust cycles have a long duration because market responses to changes in profits and to relative prices require an adjustment time (Garrison 1984). The responses of firms are slowed by uncertainties, contractual obligations, and social rigidities. A famous saying by Friedrich Hayek (1941: 408) is that money is not a "tight joint" that induces immediate coordination, but neither is money a broken joint. Rather, changes in money, hence also in interest rates, wages, and other variables, have a time lag, thus money is a "loose joint."

The presentation of cycle theory by Austrians typically ignores the role of land, even though land fits into the Austrian structure of production as a highest-order asset, with an infinite duration. However, one Austrian school economist, Karl Pribram (who moved to the United States in 1931), did integrate land values and rent as well as construction in theorizing about the business cycle. Pribram (1940: 70) recognized that increases in rents and land values accompany a rise in building activity. Pribram (1940: 65) also pointed out that in the final stages of a boom, land value costs render building activity unprofitable.

The Austrian Remedy

Since, in Austrian theory, the cause of recessions is the manipulation of money and interest rates by a central bank, the Austrian preventive remedy is to avoid such controls by leaving interest rates and the money supply to a free market in money and banking, i.e., “free banking” (Selgin 1988).

In free banking theory, there are two types of money: real money, and money substitutes. The real money is “outside money,” money not created by the banking system, which historically was a commodity such as gold or silver. Money substitutes are “inside money,” paper notes or bank accounts that are created by the banks, and are convertible to the real money.

In Austrian theory, as stated by Lawrence White (1989: 3), “the proper regulator of the supply of money is neither “rules” nor “discretion” for a central bank, but competition. Convertibility of inside money into a commodity outside money ... restrains the supply of currency and deposits.”

Austrian monetary theory does not prescribe the use of gold or any other specific form of real money. However, as stated by White (1989: 57), historically there has not been any non-commodity outside money. “For this reason free banking on a specie standard is the most plausible monetary system free of government involvement.” Now that digital currencies such as bitcoin have emerged, it is also possible for these to serve as outside money.

For the purpose of explaining free banking, suppose that the real money is gold. Units of currency, such as U.S. dollars or British pounds,

are simply weights of gold, such as the U.S. dollar set at about 1/20 of an ounce of gold. Gold coins, whether minted by government or by private firms, circulate as the real money.

It is convenient to hold currency in the form of paper notes, as well as disks of metals other than gold for small change. Therefore, the banks issue notes and token coins as money substitutes. Bank notes can be exchanged for gold coins of the same denomination at any time. For example, a \$100 bank note can be exchanged at the bank for a \$100 gold coin. Also, checking account funds can be withdrawn in gold coin, since the demand deposits, or funds in a bank, are also money substitutes.

Each bank issues its own bank notes, inscribed with the name of the bank. Generally, only the notes of the best-known and most-trusted banks would circulate. Presented with the notes of an unknown bank, a seller would typically require to be paid in real money or in trusted bank notes. The law would not mandate any required reserves, but would require an honest disclosure of the amount of real money held by the bank and the amounts of money substitutes issued or held. The banks would generally honor each other's bank notes, and funds would be freely transferred between the accounts of a buyer and seller, as done today.

Today, paper currency acts as the real money, with demand deposits and other funds in financial institutions serving as money substitutes. The transition to free banking recommended by George Selgin (1988) is to freeze the quantity of paper currency, which would continue to serve as real money, while allowing any future expansion of money to be done by the private banks either in the form of private bank currency or in financial funds. The private bank notes would be convertible into Federal Reserve notes on demand.

If the major economies of the world adopt free banking, then Austrian economists believe that gold would emerge as a global currency, since a common currency would facilitate trade better than constantly fluctuating national currencies, which require conversion costs. Selgin (2008: 303) states that in the past, private coinage was useful, and privately issued coins could function well again as vehicles for currency. "Commercial mints ... had to vie for the services of the world's best metal engravers or risk seeing prospective clients go elsewhere."

With no central bank to serve as the lender of last resort, the banks would be associated in a consortium for mutual aid. If one bank had insufficient amounts of real money, it could borrow some from other banks, just as banks today borrow from one another when their reserves fall too low. The consortium would operate as the institution of lending as last resort.

With free banking, there is no government-required deposit insurance. There can be privately provided deposit insurance, for those banks and customers who are willing to pay for it.

Free banking would leave the money supply to the public's demand to hold money. If a bank issued more bank notes than the public seeks to hold, the notes would come back to the bank for redemption into real money or the notes of some other bank. Austrian economists refer to this as the "law of reflux," which says that unwanted money will go back, or reflux, to its issuer. Therefore, there will not be a general over-issue of private money substitutes. The redemption of bank notes into real money anchors the money supply to the real money, whose supply can only be increased by, in the case of gold, new mining.

With the supply of money determined by the public's demand for money, there would be no manipulation of the money supply to distort the rate of interest. The amount of money could expand if the public seeks to hold more funds, as output grows. Otherwise, the price level would be stable, and most likely there would be a mild annual deflation of about 1 percent; greater productivity reduces the prices of goods relative to wages, as occurred during the 1800s.

The natural rate would prevail, and the interest rate would be allowed to perform its economic role in balancing out savings and borrowing, net savings and investment, and allocating spending between consumption and investment.

Also, without the continuous monetary inflation that has occurred since World War II, and without the associated price inflation, the nominal interest rate would be the same as the real interest rate. Therefore, long-term interest rates (such as for long-duration mortgages or 30-year bonds) would be about the same as short-term rates. Any difference in short- versus long-term debt service would be due to risk premiums rather than pure interest.

Moreover, in a pure market economy, there would be no taxes on interest income. Taxation distorts the yields of various bonds. For example, if tax-free interest on municipal bonds is 3 percent, taxed corporate bonds yield 6 percent when the tax rate is 50 percent of income, to equalize the after-tax rates, aside from risk. The deduction of mortgage interest expense from taxable income, and the taxation of interest income, distorts the gains from savings and the costs of borrowing, which then add to the distortions in the structure of capital goods. The ability to deduct mortgage interest from taxable income has the result of reducing the effective interest payments for real estate, which gets capitalized in higher prices for real estate and possibly a greater construction of owner-occupied housing relative to other capital goods. However, so long as tax policies do not change, this becomes a long-term distortion rather than causing economic fluctuations.

Austrian school economists, especially Friedrich Hayek and Ludwig von Mises, were among the leading critics of state socialism. In his book *Socialism*, Mises ([1922] 1981) theorized that a highly socialized economy would be ineffective, as its planners would not be able to undertake economic calculation, lacking the prices provided by markets. Hayek (1945) emphasized the knowledge problem: the knowledge needed for production and trade is dispersed, often tacit, and ever-changing, so that central planners could not collect it to make efficient plans.

This critique extends to governmental interventions, i.e., central banking and any alteration of peaceful and honest human action by subsidies and imposed costs. Austrian theory generally concludes that government interventions cause economic damage by distorting prices and output, and wasting resources. By "intervention," Austrians mean market-hampering policies that interfere with voluntary action, not a market-enhancing protection of property rights under a rule of law. In Austrian thought, free banking would work best in the context of an overall free-market policy.

The Austrian school critique of governmental provisions and interventions implies the belief that the private provision of civic goods and services would be more efficient and less subject to political transfer-seeking or rent-seeking. The current system, which taxes labor, goods, and investment yields to provide public goods, provides an implicit subsidy as higher real estate rentals and property values. In contrast,

with the private provision of civic goods, such as from residential associations and proprietary communities, property owners would pay for the services received from firms and community associations, with no subsidy to real estate. The reduced subsidy to land values would dampen the business cycle.

Once a depression is underway, Austrian economists have stated that the best policy is to avoid artificial stimulus and let the economy remove the bankrupt enterprises, and then let it recover on its own. In response to Keynesian critics who believe that markets can remain broken, Austrians point to the U.S. depression of 1920–1921 as an example of a market-based recovery. The depression of 1920 was preceded by a credit-led boom. “The years preceding 1920 were characterized by a massive increase in the supply of money via the banking system” (Woods, 2009). But during the depression, the U.S. government did not enact stimulative policies. The economy recovered on its own.

Benjamin Anderson ([1949] 1979) describes the history of that depression. “In 1920–21, we took our losses, we readjusted our financial structure, we endured our depression, and in August 1921 we started up again. . . . The rally in business production and employment that started in August 1921 was soundly based on a drastic cleaning up of credit weakness, a drastic reduction in the costs of production, and on the free play of private enterprise. It was not based on governmental policy designed to make business good.”

The fall in asset prices during a depression, and possibly drops in other costs such as labor, make investing profitable again. The increase in investment and consumption due to lower prices is called “the Pigou Effect,” after Arthur Cecil Pigou (1943). As stated by Gene Callahan (2002: 280): “In the downturn, certain factors of production are underpriced and may be idled. The deeper a downturn goes, the more underpriced they become.” The prescient entrepreneurs who, in the face of uncertainty, can envision the recovery and profit opportunities, invest in assets and enterprises when they are cheapest.

Land in Austrian Theory

The Austrian school theory of the business cycle, aside from that of Karl Pribram, does not usually analyze the role of land. The inclusion of the

land factor makes the explanation more complete. Investment in real estate includes the purchase of land, and low interest rates induce a greater purchase of land for both real estate construction and for speculation. The cheap credit caused by the excessive expansion of money in effect subsidizes the purchase of land. At the peak of the boom, speculation lifts the price of land beyond what households can afford, and also reduces the profit expectations of enterprise and investors. Therefore, it is not just higher interest rates but also higher prices for real estate that choke off new investments.

The land aspect is fully compatible with Austrian theory (Foldvary 2012) because land is an asset of infinite duration. It is not a capital good, but a related asset that is complementary to the structure of capital goods, and an asset involved in roundabout production. Therefore, the distortions in capital goods caused by cheap credit, which result in malinvestments, can be applied also to “malspeculation” in land value. The inclusion of the land factor makes the Austrian theory more complete, both in theory and in testing it with the cycles in economic history.

Historical Evidence for the Austrian Explanation

The Austrian explanation for the boom-bust sequence is consistent with the expansion of both money and real estate prices and construction of the 1920s, followed by diminishing growth, and then the Great Depression of the 1930s. The Austrian school economist Murray Rothbard (1975: 86) reports that the money supply of the United States increased by 62 percent during the 1920s boom. The major increases in credit expansion took place in 1922–1925.

A paper by (non-Austrians) Barry Eichengreen and Kris Mitchener (2003: 3) confirms the role of money and credit as a cause of the Great Depression: “We conclude that the credit boom view provides a useful perspective on both the boom of the 1920s and the subsequent slump.”

The expansion of credit fueled the rise of urban real estate prices along with a major building boom. From 1923 to 1929, the square feet of office space in Chicago almost doubled. So much construction occurred during the 1920s boom that no new office buildings were erected and no new large hotels were built in Chicago from 1931 to 1950 (Hoyt [1933] 1970: 153).

The Austrian proposition that the cause of the bust is rooted in the previous boom has evidence in the slowdown of construction after 1927. Hansen (1964: 46) calls the drop in construction in 1928 “catastrophic,” and states: “No explanation of the boom of the twenties or the severity and duration of the depression of the thirties is adequate which leaves out of account the great expansion and contraction in building activity.” The Austrian connection between excessive credit and the boom-bust was also evident. Hoyt ([1933] 1970: 532) remarked that the increase in the number of foreclosures in 1927 “was a barometer of approaching financial storms.”

Japan’s boom of the 1980s and subsequent bust also fits the Austrian story. After the recession of 1974, Japanese real estate owners “were rescued by governmental and central bank ‘lifeboat’ operations” (Harrison 1983: 169). Japan had an extreme real estate boom during the 1980s, in both construction and land values, which then burst in 1990. Governmental expansionary policy failed to lift the economy out of the subsequent doldrums.

The 1997 Asian financial crisis also fits the Austrian story, as it was preceded by an “enormous increase in liquidity” that flowed into East Asia. This increase in money originated “primarily from the American and Japanese central banks.” Much of the liquidity went “into the asset markets of the East Asian countries whose currencies were tied to the dollar.” Investment in real estate construction was symbolized by the erection of the world’s tallest building in 1997 in Malaysia. The rise in real estate prices and construction was unsustainable, and in 1997, the East Asian economies’ stock markets, real estate markets, and currencies fell dramatically. Once again, the increase in money fueled a speculative real estate construction and land value bubble, which then crashed (Ludwig von Mises Institute 2014).

While there are disputes over the basic causes of previous major recessions, there is little doubt that the recession that began in December 2007 and continued through 2009, and the plunge in output and asset values during the “Crash of 2008,” was caused by real estate and its financial dependents. Again, cheap credit played a leading role. Homeowners borrowed \$2.5 trillion from 2001 to 2005 using their real estate as collateral (Panzner 2007: xiii).

The real estate boom of the 2000s decade was enlarged by the role of Fannie Mae and Freddie Mac, government-sponsored enterprises that bought mortgages and packaged them as mortgage-backed securities. Their role fits in with the Austrian critique of intervention. While the intention of these institutions, with their governmental backing, was to promote home ownership, the effect was to spread the risks of widespread defaults throughout the national and world economies. Not just the banks were at risk, but also insurance companies, pension funds, hedge funds, and, ultimately, the taxpayers.

A decline in real estate activity signaled the onset of the recession to those who understood the real estate cycle. The U.S. Commerce Department reported that new-home sales were down 21 percent during the first half of 2007. Inventories of unsold homes already stood at a seven-month supply by the end of May. The median sales prices had fallen almost 1 percent in 2006. House prices in 10 of 21 the largest U.S. cities had fallen at the fastest pace in 16 years in April. The National Association of Realtors announced that sales of existing homes dropped 8.4 percent from February to March 2007, the largest one-month decline since January 1989, during the last housing recession (Robb 2007).

In accord with the Austrian theory that higher-order capital goods rise and fall prior to goods in general, orders for American-made durable goods fell sharply in May 2007. The Commerce Department announced on June 27 that May orders for durable goods, manufactured products that last at least three years, fell 2.8 percent, or \$6.1 billion, to \$213.0 billion. Orders were down for metals, machines, and electronic appliances. Orders for non-defense capital goods fell by 3 percent. Residential fixed investment, the GDP component that includes spending on housing, plunged by 15.8 percent in the first quarter (Farrell 2007).

Conclusion

Not all recessions fit the Austrian theory, but the major ones have done so. The Austrian school theory of the business cycle concludes that it is not “business” itself that causes the boom and bust, but rather the governmental monetary and fiscal interventions that skew investment, speculation, and relative prices. In the Austrian perspective, it should more accurately be called an “interventionist cycle.” Since the Austrian school

theory of the time structure of capital goods has yet to be integrated into mainstream economic theory, its business cycle theory remains a distinct explanation that has been shown to be consistent with economic history.

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