

The Business Cycle: A Geogist-Austrian Synthesis

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ABSTRACT. Conventional macroeconomics lacks a warranted explanation of the major business cycle, while the Austrian and geo-economic (Geogist) schools have incomplete theories. A geo-Austrian synthesis, in contrast, provides a potent theory consistent with historical cycles and with explanations about the root causes. The geo-economic and Austrian schools have had little interaction in the past, despite many similarities (Yeager, 1954 and 1984). Though the theories of the schools are largely complementary, each providing content the other lacks, so far a synthesis has not been forthcoming; although some geo-economists have incorporated elements of Austrian capital theory (e.g., Gaffney, 1994).

I

Introduction

THE CASE FOR A GEO-AUSTRIAN cycle theory would be less compelling if new-classical, real, and new-Keynesian theory, offered satisfactory explanations. But such has not been forthcoming (Sinha, 1988). Conventional theory centers on supply and demand shocks, with little consensus as to why such shocks should generate fluctuations with recurrent characteristics and duration. As Peter Hammond (1984, p. 61) states, "The modern view is that we have no acceptable economic theory of the basic cause of business cycles."

Will Lissner (1983, p. 429) stated that despite millions spent by the National Bureau of Economic Research (NBER) on business cycle research, "No satisfactory theory of the expansion and contraction of business activity known as the business cycle has yet been empirically validated." New-classical economist Thomas Sargent stated, "I do not have a theory, nor do

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I know somebody else's theory that constitutes a satisfactory explanation of the Great Depression" (Klamer, 1983, p. 69). New Keynesian models of menu costs, efficiency wages, hysteresis, and insider-outsider labor may offer explanations of rigidities, but hardly explain the regularity of cycles. Satya Das (1993) notes that there was no evident external shock for the 1990-91 downturn.

Real business cycle models have attempted to fill the gap, arguing that clusters of technological innovations can create cycles. But these models are found to be problematic when applied to international data (Hartley et al., 1997). Barsky and Miron (1989, p. 6) conclude that the technologically-driven seasonal cycle "casts doubt on the plausibility of aggregate technological shocks in explaining business cycles." As well, the "radical" political economy school that draws on Marxist theory also has not provided an adequate general explanation. Jonathan Goldstein (1996) observes that the cyclical profit squeeze caused by labor costs has been weak or inoperative since 1980. As there is still no consensus, the geo-Austrian synthesis as a testable hypothesis may provide some significant elements.

The Austrian theory explains the financial side of the cycle and the role of capital goods. The geo-economic theory explains the real side, "real" in this case meaning non-financial plus emphasizing the real-estate market and the role of speculation, which is tied to the financial side via the banking system. The synthesis thus not only brings together the Austrian and geo-economic theories, but also the real and financial sides of the cycle, to provide a more comprehensive explanation. While the Austrian and geo-economic theories have existed for decades, they have not heretofore been synthesized. Conventional macroeconomic theory has not assimilated either theory; perhaps the synthesis will provide a more convincing and less disregardable theory, particularly one with predictive power.

II

A Generic Theory of the Business Cycle

THE GEO-AUSTRIAN THEORY OF BUSINESS CYCLES can be better understood by first postulating a general theory of cycles. A basic question is whether macroeconomic fluctuations are cyclical to begin with. Alvin Hansen (1964, p. 6) maintains that an analysis of macroeconomic fluctuations supports the

hypothesis that the significant changes in variables are cyclical rather than less regular fluctuations. Each phase of a cycle is related to preceding phases. This proposition has been disputed, but the case for cycles is buttressed by the realization that there is more than one type of cycle, and that the various cycles have different durations. When one examines the major depressions and panics of the 19th century in the United States—in the 1830s, 1850s, 1870s, and 1890s—one unavoidably sees a 20-year pattern.

The proposition that fluctuations are indeed cyclical implies that general theoretical propositions can be made about cycles. Gottfried Harberler (1960, p. 276) posits that a "very general theory of the most important aspects of the cycle can be evolved." Barsky and Miron (1989) and Beaulieu and Miron (1990) see basic similarities between seasonal and business cycles; in both, output movements across sectors are highly correlated, and nominal money and real output move together. Internationally, John Baen (1996, p. 69) finds that there is "one generalized, theoretical property cycle," and "each country, each property market, is somewhere on the same 'conceptual' cycle."

The key puzzle in cycle theory is what causes the *decline*, rather than the upswing—agents in a market economy naturally wish to better their condition, which would lead to an ever increasing accumulation of wealth. Indeed, a puzzle exists when the economy fails to recover from a slump.

When an individual enterprise can no longer expect to make a profit, it will reduce output, possibly to zero. Irving Fisher (1932, p. 30) listed a reduction in profits as the fifth of nine factors that cause depressions, even suggesting that a depression "might be defined as the contraction of net worth and profits." Among the forces which can reduce profits are 1) a downward shift in the demand for the firm's products, reducing revenues; 2) an upward shift in the cost of particular inputs; and 3) a change in the production function that increases costs, such as an increase in taxes or regulatory costs.

Cycles have duration because market responses to such changes take time (Garrison, 1984), due to uncertainty as well as contractual, legal, and social rigidities. A major change in the economic environment can cause a rapid loss of profits, leading to business declines, unemployment, and a depression before the market can adjust to them. As noted by Friedrich Hayek (1941, p. 408), money is a "loose joint" which does not accommodate an immediate coordination of price changes.

More definite theories of cycles must therefore focus on particular reasons for the significant and rapid changes in costs or demand that typically occur. Examples of economy-wide costs that could rise to choke off profits include labor, interest rates, raw materials such as oil, natural occurrences such as droughts, and taxation. Henry George's theory points to land and rent costs; the Austrian school focuses on interest rates. Examples of economy-wide reduction in demand include the exhaustion of gains from clusters of innovations, malinvested capital goods, general overproduction or underconsumption (possibly due to inequality of income), and shifts in expectations. One can see why there are so many different cycle theories: each points to different costs or different reasons as to why costs would rise or demand decline.

The generic cycle theory also includes an analysis of the key turning points. Burns and Mitchell (1946) regard the peaks and troughs as the critical points, whereas Joseph Schumpeter (1939) posits that the critical region is the point of inflection where the upward swing switches from acceleration to deceleration, and vice-versa for the downward swing (Hansen, 1964, pp. 708). Goldstein (1996), analyzing rising labor costs in an upswing, notes that only in the mid-expansion stage does the reduction of unemployment act to raise wages and squeeze profits. Other costs would likewise be increasing then. A generic theory of cycles would thus seem to favor the Schumpeter view; 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, p. 180) notes, during an upswing, the peak of net investment is reached at the point of inflection.

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. As Henry George (1879, p. 264) put it, "Production, therefore, begins to stop. Not that there is necessarily, or even probably, an absolute diminution in production; but that there is what in a progressive community would be equivalent to an absolute diminution of production in a stationary community—a failure in production

to increase proportionately, owing to the failure of new increments of labor and capital to find employment at the accustomed rates."

That the seeds of the depression are laid in the middle of the boom when the second derivative turns negative accords with the generic theory of the downturn as caused by an increase in costs and/or a significant lack of demand, which would occur in the midst of the boom, reducing the rate of increase of further investment until the boom comes to a halt.

To refer to *the* business cycle, presumes that there is one type of cycle, but in a general theory of cycles, this cannot be assumed. Hansen (1964) has identified three types of cycles. Schumpeter (1939) also posited three types (though different from Hansen's). In the United States, besides seasonal cycles, there are minor inventory cycles of a duration of a few years: politically-caused, four-year cycles; intermediate cycles (which Hansen calls "major") in producers' equipment of various duration; and major real-estate cycles, which averaged about 18 years in duration up to 1929. Some recessions in the United States, such as the one in 1970, were precipitated by credit tightening by the monetary authority. There may also be long-wave Kondratieff cycles of 50–60 years or more (Vasko, 1987). Each of these cycle types could have its own dynamics and causes. One reason the NBER studies have not focused on the long real estate cycle may be that they are only looking at the short cycle lasting up to eight years (Baxter and King, 1995, p. 3).

The geo-Austrian cycle theory presented here focuses only on the approximately 18-year major cycle coinciding with the major depressions. It is not a universal explanation for all cycles. Within the major cycles there are also minor cycles, which add complexities.

III

The Austrian Theory of the Macroeconomic Cycle

THE AUSTRIAN-SCHOOL CYCLE THEORY includes institutional, capital-structural, and monetary elements. The key element is the interest rate. Hayek (1933, p. 180) wrote that "The 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."

In Austrian theory, capital goods are disaggregated into those of higher

and lower order. Carl Menger, founder of the Austrian school, observed that capital goods could be used to produce consumer goods or other capital goods. He named capital goods producing other capital goods a "higher order" of goods than those producing consumer goods, which are the "first" order (1871, p. 80). There is thus a capital structure that can be depicted as a pyramid, with the highest order on top and successively lower-order goods and production, which is also larger in magnitude.

Menger (1871, p. 85) also observed that the use of some particular capital good normally requires other, complementary, goods of higher order. Taking up this theme, Ludwig Lachmann (1947, p. 198-9) stated that "Once we abandon the notion of capital as homogenous, we should therefore be prepared to find less substitutability and more complementarity." Factors employed in one firm tend to be complementary. Complements occur over time as well as space, as during the period of production, for example, hides, leather, and shoes are complementary (p. 205). "The accumulation of capital will therefore have what we may term a 'chain reaction' effect" (p. 209).

Menger recognized that time plays a key role in the production of capital goods: "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" (p. 152), although as Boehm-Bawerk (1921, II, p. 82) noted, there can be exceptions. Usually, the decision to produce higher order goods involves a lengthening of the "period of production," the duration of the time between investment and the reaping of profit. As Friedrich Hayek (1941, p. 191) noted, "the condition that all input must be invested in such a way that the ratio between the marginal rate of increase of the product and the size of the whole product is the same for all units of input, also determines the period for which each of the units of input has to be invested." The need to lengthen the period of production in order to increase productivity via higher order capital goods was recognized by Menger to be a "restraint upon economic progress" (1871, p. 153).

The return on higher-order capital goods is due to the great productivity of "roundabout" production. Boehm-Bawerk (1921, II, p. 82) posited as the key explanation for this greater productivity that "skillfully chosen circuitous methods tap the stupendous treasure of natural forces for fresh auxiliary powers, the activity of which is beneficial to the process of pro-

duction." The enhanced productivity is subject to diminishing returns, setting a limit to the degree of profitable roundaboutness.

The spontaneous order of a free market will generate some natural rates of interest (Wicksell, 1936) which then imply some optimal amount and structure of capital goods. As stated by Ludwig von Mises (1924), "The level of the natural rate of interest is limited by the productivity of that lengthening of the period of production which is just justifiable economically and of that additional lengthening of the period of production which is not justifiable." Capital formation different from this market-determined mix constitutes economic waste. In particular, as noted by Mises (1924, p. 401) if interest rates were temporarily artificially lowered due to an increase in the money supply by a monetary authority, this induces an increased investment in higher-order capital goods unwarranted by free-market demand: consumer goods (circulating capital goods) get used up while "the capital goods employed in production have not yet been transformed into consumption goods."

When the monetary authority injects money and credit into the economy and expands the supply of credit beyond that warranted by savings, it temporarily reduces interest rates if the subsequent price inflation is not yet expected, fostering more investments in higher-level capital goods than are warranted by the preferences in the market. When interest rates and prices rise, these malinvested firms fail, since the demand for these products is lacking, inducing the downturn. Hence, the Austrian theory encompasses rising costs (interest rates and prices) and a lack of demand for a significant portion of capital goods.

The conversion of "free" or circulating capital (or loanable funds) into fixed capital was first analyzed by Tugan-Baranowskii (1913). As Garrison (1997, p. 14) states, "capital needed to satisfy current consumption is in short supply. Structural unemployment that accompanies this intertemporal disequilibrium of the production process reduces output." Mason Gaffney (1994) notes that too much investment in fixed capital goods results in a dearth of circulating capital, capital investment is distorted not only from skewed interest rates but also (as noted in geo-economic theory below) from excessively high land prices due to land speculation.

Thus, as Hayek (1933, p. 179) put it, "a boom is thus made possible, with the inevitably recurring 'crisis.' *The determining cause of the cyclical fluctuation is, therefore, the fact that on account of the elasticity of the*

volume of currency media, the rate of interest demanded by the banks is not necessarily equal to the equilibrium rate, but is, in the short run, determined by considerations of banking liquidity" (italics in original).

Although the cycle works through the banking and credit system, Hayek (1933, p. 182) also noted that there is no reason why the initiating change, the original disturbance, should 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" (p. 183). He recognized also that "the existence of most of the interconnections elaborated by the various Trade Cycle theories can hardly be denied" (p. 52). Hence, the Austrian credit effects could be induced by real-estate factors and then work in tandem with them to cause the bust, as history has shown. Rising interest rates together with rising land prices then choke profits, with real-estate construction a key capital-goods malinvestment.

Along similar lines, R.C.O. Matthews (1967, p. 128) stated that "monetary factors must have at least a permissive significance in the cycle: even if fluctuations originate from real forces, monetary conditions must be such as to allow the real forces scope to work themselves out." Ludwig von Mises (1966, p. 554) also held this view, that "every nonmonetary trade-cycle doctrine tacitly assumes—or ought logically to assume—that credit expansion is an attendant phenomenon of the boom." The historical record repeatedly shows the complementary role played by the banking system in facilitating real-estate booms.

IV

The Geo-economic (Georgist) Theory of Macroeconomic Cycle

HENRY GEORGE (1879, p. 263) acknowledged that factors other than land, such as "the tremendous alterations in the volume that occur in the simpler forms of commercial credit," affect business cycles. However, in his theory, land plays the primary role. George maintained that "speculative advances in land values" check production and are the initiatory cause of periodic depressions.

Land is essential for all production. In any particular economic region, the quantity of surface sites is fixed. The supply of land for particular purposes expands with increasing rent (including the conversion of water to

solid surface), but the total site area is fixed. When a boom is underway, the anticipated increase in rent induces speculators to buy land for price appreciation rather than for present use, which causes the current site value to rise above that warranted by present use. Once widespread speculation sets in, land values are carried beyond the point at which enterprises can make a profit after paying for rent or mortgages. The rate of increase of investment slows down, eventually reducing aggregate demand as the slowdown ripples through the economy, increasing unemployment and bringing forth a depression. Thus a fall in demand follows the initial cause, the rising cost of land.

After land prices and rents drop, along with other costs, investment again becomes profitable. The economy recovers. George (1879, p. 268) noted that depressions were preceded by booms and land speculation, "followed by symptoms of checked production." He rejected theories of general insufficient demand, invoking language akin to Say's law: "The diminution of the effective demand of consumers is therefore but a result of the diminution of production" (p. 269). The high cost of land and rent is, in effect, "a lockout of labor and capital by landowners" (p. 270). George's theory attempted to resolve the paradox of idle labor and capital in the depths of a depression. The market was not clearing because labor and capital were cut off from the necessary natural opportunities offered by land.

Writing after the depression of the 1870s, George pointed to the example of the railroads, the construction of which had been accompanied by widespread speculation that "ran up land values in every direction. . . . Lots on the outskirts of San Francisco rose hundreds and thousands per cent, and farming land was taken up and held for high prices" (p. 276). As the transcontinental railroad approached completion, instead of bringing prosperity, a depression began. The rapid construction of railroads itself was a result of land grants by the federal government to spur on a national rail network. The train of events that contributed to the depression of the 1870s was therefore not a purely endogenous market process but induced to a great extent by the shock of infrastructure subsidies by government, and speculation at the urban terminus of the railroad induced to a great extent by the rail service as well as the government-provided local infrastructure.

George's theory does not include real-estate construction, an important element of the geo-Austrian synthesis, because real estate structures form the linkage to the capital-goods malinvestments of Austrian theory. Fred

Harrison (1983, p. 65) depicts the construction industry as a "transmission mechanism" by which the land market impacts "the factory, office and corner retail store." McGough and Tsolacos (1995, p. 20) find that in the United Kingdom, rents lead the office building cycle, are coincident with the industrial-building cycle, and lag the retail-building cycle, but capital (land) value is procyclical and leads the property cycles. A key aspect of this process is the tendency to overbuild during a land-speculation boom, followed by a long interval of depressed building. George Hull (1911, p. 130) posited that the high price of construction is the "real, original, and underlying cause" of industrial depression.

Karl Pribram was perhaps the first geo-Austrian synthesist, although he was not explicitly Georgist. An Austrian economist who moved to the U.S. in 1931, he integrated land values, construction, and the role of rent. Pribram (1940, p. 70) recognized that increases in rents and land values follow a rise in building activity. Pribram (p. 65) also pointed out that in the latter stages of a boom, real-estate costs render building activity unprofitable.

The construction industry has amounted to a quarter or more of total investment (Matthews, 1967, p. 98), and it affects the demand for other durables. For example, in 1929, total direct employment in construction was 3 million, but, if complementary industries are included, 9 million were employed (Long, 1940, p. 7). Arthur Burns (1969, p. 69) concluded that "few other industries have the power to convert an increase in activity into a sustained expansion." Real estate structures play a key role in the main categories of investment (other than inventory): business fixed investment, residential construction, and consumer durables.

Burns (1935, p. 94) theorized that pecuniary forces induce correlation in construction cycles among various regions. Uncertainty regarding future rents and demand, as well as the durability of buildings prolong the cycle (pp. 94-5). When a minor recession occurs during a building boom, many projects in progress continue, reducing the potential severity of the recession. By the same token, extreme overbuilding cannot be corrected quickly, prolonging major depressions.

V

The Geo-Austrian Synthesis

INTEGRATING THE TWO THEORIES, the geo-Austrian theory of the business cycle is as follows. At the beginning of the expansion, the banking system

expands credit by an amount greater than is warranted by available savings. This artificially reduces interest rates; the skewed market rate is lower than the normal natural rate. Low interest rates induce investment in higher-order capital goods, much of it consisting in real estate construction, related infrastructure, and durable goods.

As the expansion turns into a boom, land speculation sets in, fueled by still cheap credit. Land rent and prices then rise higher than is warranted by current use. Meanwhile since consumer time preference has not changed, the demand for consumer goods continues as before, and prices rise. When the money expansion providing cheap credit ceases and when inflationary expectations affect the market for loanable funds, interest rates rise, especially affecting the interest-sensitive real-estate market. Higher costs (which can include higher taxes and labor costs along with higher interest rates and more expensive land) now reduce the rate of increase of new investment. The higher-order investments, chief among them real estate, turn out to be malinvested, as there is insufficient demand for the extra capacity, with vacancies in shopping centers, hotels, office buildings, and apartments.

The negative second derivative (decrease in the rate of growth) eventually slows the expansion and brings on the decline, which accelerates as the reduction in demand follows the cessation of investment due to costs. This scenario is consistent with the empirical data showing real-estate construction as well as prices peaking before the onset of the depression. Once the recession begins, then as real-estate prices fall, loans start to exceed the value of the properties. The real-estate collapse brings many banks down with it, and it may take some time for banks to recover.

The depression of real-estate as well as the decline in other prices now makes investment more attractive. The cycle then moves again to the expansion phase. Note that even if credit is not unduly expanded, real estate speculation could still cause the cycle, but it is considerably dampened if interest rates are not artificially depressed.

The geo-economic remedy for the cycle is the public collection of rent (PCR), also known as land-value taxation (LVT). When future rents are collected, the profit is taken away from real-estate speculation. The Austrian remedy for credit manipulation is free banking (Selgin, 1988), a banking system without a central bank, with unrestricted branches, and with competitive private bank notes ("money substitutes" redeemable into base

money such as gold or a frozen quantity of federal reserve notes). Hence, the geo-Austrian policy to eliminate the major business cycle would be the combination of PCR/LVT and free banking.

The collection of the land rent by governments or by voluntary civic associations (Foldvary, 1994) would also provide revenue without interfering with price and profit signals, and without hampering the entrepreneurs who, in Austrian theory, play a key role in economic advancement. Geo-Austrian policy thus treats the causes of cycles rather than attempt to remedy the effects, as does Keynesian stabilizing policy. Free banking allows for a flexible response to changes in the demand for money rather than attempt to force-feed stability through a steady increase in a money supply, which is difficult to measure and control, aside from the problem of knowing the optimal amount of increase. The public collection of rent and elimination of other taxes, as Henry George advocated, would also eliminate the distortions on interest rates caused both by the taxation of interest income and the tax-deduction of interest expense. Interest rates and land rent would then be priced as warranted by markets rather than skewed by credit manipulation and speculation induced by infrastructure not paid for by the owners of land.

VI

Historical Evidence Favoring the Geo-Austrian Synthesis Explanation

A DISTINCTIVE FEATURE OF FLUCTUATIONS of both construction and real estate prices over the last 150 years in the United States, Great Britain, and other countries is the regularity of cycles of roughly 20 years (Matthews, 1967, p. 98). Clarence Long (1940, p. 155) observed that a decline in building precedes general business declines in major downturns (p. 159), a phenomenon that has continued to the present day.

The United States has had a real estate cycle of roughly 18-year spans, starting as early as 1800. The peaks of the U.S. real estate cycles prior to World War II occurred in 1818, 1836, 1854, 1872, 1890, 1907, and 1925. Cycle bottoms occurred in 1819, 1843, 1858, 1875, 1894, 1908, and 1933 (Hoyt, 1970, p. 537). Upward movement in real estate prices persisted in 1819–1836, 1860–72, 1894–1907, and 1908–1925. Sharply falling real estate prices occurred in 1818–19, 1837–1840, 1857–59, 1873–75, 1892–94, 1907–08, and 1929–32 (p. 538). Detailed histories of these cycles are related in

Hoyt (1933), Sakolski (1932), Hicks (1961), English and Cardiff (1979), and other works.

The congruence of the real estate and business cycles is seen clearly in the Great Depression and preceding 1920s boom. In 1920, the total value of U.S. urban land in cities of over 30,000 was \$25 billion. By 1926, urban sites rose to over \$50 billion (Hoyt, 1933, p. 234). During 1925, \$500 million of northern capital had poured into Florida real estate, where speculation was most extreme (Thomas, 1977, p. 208). In the fall of 1926, the Florida land boom collapsed. Construction in the cities continued with undiminished ardor during 1927–1928; from 1923 to 1929, the square feet of office space in Chicago almost doubled. So powerful was the 1920s boom and subsequent bust that no new office buildings were erected and no new large hotel was built in Chicago from 1931 to 1950 (Hoyt, 1970, p. 153).

If the production of capital goods, especially construction, was the key element of the “second derivative” of the 1920s boom, its decline after 1925 would eventually bring the first-derivative growth to a halt. The timing, in the midst of the boom, was right. Hansen (1964, p. 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.” Hoyt (1970, p. 532) remarked that the increase in the number of foreclosures in 1927 “was a barometer of approaching financial storms.”

Murray Rothbard (1975, p. 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 1922–25. Here again, the money and credit system, this time orchestrated by the new Federal Reserve System, fueled the speculation.

The next historical real estate peak in the U.S. would have occurred in 1943 had the 18-year cycle continued, but building was dampened by the prosecution of the war. Price and rent controls, millions of men overseas, and a postponement of marriages reduced normal real estate demand. The historical U.S. real estate cycle was broken, and, there was no major post-war depression.

Indeed, there followed an unusually long period of smoothly rising real estate prices and construction. An old-fashioned real-estate boom finally developed, especially for apartments, from 1967 to 1972, coin-

cluding with increased inflation. Baby boomers increased the demand for rental housing. Prices of apartment buildings were rising faster than their rents, but "investors didn't care . . . they were buying into the rental property market in order to speculate on future price increases" (English and Cardiff, 1979, p. 43). The Tax Reform Act of 1969 had made rental property more attractive. Tax shelters used negative cash flow as a tax advantage. Real estate became a favored hedge against increasing inflation, the stock market having topped out. Real Estate Investment Trust (REIT) assets grew from \$2 billion in 1969 to \$20 billion in 1973. Commercial bank mortgage loans increased from \$66.7 billion in 1969 to \$113.6 billion in 1973 (English and Cardiff, 1979, p. 44).

Then vacancies began to increase. "With catastrophic swiftness, the money machine sputtered to a stop. The financial superstructure collapsed; the REIT industry faced bankruptcy" (English and Cardiff, 1979, p. 45). Interest rates were also increasing. Many REITs and developers went bankrupt. Apartment units begun dropped from their peak of 1,047,500 in 1972 to 268,300 in 1975 (English and Cardiff, 1979, p. 46). "More money may have been lost in the Apartment Crash than in any of the more celebrated crashes. But it remains an unheralded financial crisis" (English and Cardiff, 1979, p. 47). It was the worst recession in the U.S. since the 1930s.

The economy of the latter half of the 1970s has been characterized as "stagflation." Land values increased along with other tangible assets as inflation induced speculation and soaring prices, but unemployment remained high, and the deviation of real income from the trend remained negative during the latter 1970s (Parkin, 1984, p. 28). The value of new construction put in place (in constant dollars) and construction contracts by floor space peaked in 1978 (Statistical Abstract, 1996, p. 710). The recession of the early 1980s followed along the earlier real-estate patterns, but it occurred only about nine years after the previous bust instead of the eighteen years of the former cycles. One reason could be that the inflation of the latter 1970s artificially took the economy out of the recession without fully liquidating the malinvestments. The 1973-1982 period could be interpreted as one long recession interrupted by a speculative rally fueled by monetary inflation. (The 1930s depression also had a rally that peaked in 1937, after which the economy collapsed again.) Another factor in the 1975-9 boom was the arrival of huge numbers of World War II baby boomers in the housing market (Crellin and Kidd, 1990, p. 1). Gregory, Head,

and Raynauld (1995, p. 3) find that the U.S. trough of 1975 was closely associated with the worldwide slump, while the recession of 1982 was more U.S.-specific, e.g., due to the tight monetary policy responding to inflation.

Following the 1982 trough, the economy recovered and another real estate boom was underway. One catalyst was the decrease in marginal tax rates. Another boost to real estate speculation was the raise of deposit insurance to \$100,000, which facilitated lending to developments which turned out to be malinvestments. A third government stimulus was the liberalized depreciation deductions of the 1981 tax law, which created tax shelters in real estate. Once again, the government helped induce real estate speculation, and the result was enormous overbuilding. In the 50 largest metropolitan areas, office space doubled to 2.5 billion square feet. The number of shopping centers rose 57%. Hotel rooms jumped 43%. The population only expanded 8.5%. Between 1984 and 1989, real estate loans increased \$366 billion, increasing from 25% to 37% of bank lending. Lending standards were loosened, with loans often covering all of a project's costs. "Lax lending was fed by speculative buying of commercial properties" (Robert Samuelson, 1990).

The Tax Reform Act of 1986 eliminated some tax-shelter advantages of real estate, which brought down the increase in construction. Though not as affected by that Act, the value of residential construction also peaked in 1986 (Statistical Abstract, 1996, p. 710), as did net mortgage flows, with declines thereafter especially strong in commercial and multifamily funds (Furlong, 1991). Single-family housing starts and building permits also peaked in 1986, dropping off sharply thereafter. The recession of 1990 followed. The second derivative of new construction, the percent annual increase in value, peaked in 1986, even though in absolute amounts it continued to rise (Statistical Abstract, 1996, p. 710).

Housing was the weakest sector of the economy in 1990. Multifamily housing was in the deepest recession since World War II (Housing Background, 1991, p. 1). The Washington, D.C., area, the fundamental reason for the slowdown in the fall of 1990 (and increasing joblessness) was ascribed to "real-estate overbuilding coupled with cutbacks in bank lending" (Swardson, 1990). The "Washington area economy is suffering from the burst of the ballooning local real estate market," with major banks "pushed over the brink of the sluggish real estate market" (Brenner, 1990).

TABLE 1¹

Peaks in Land Value	Interval (years)	Peaks in Construction	Interval (years)	Depressions	Interval (years)
1818	—	—	—	1819	—
1836	18	1836	—	1837	18
1854	18	1856	20	1857	20
1872	18	1871	15	1873	16
1890	18	1892	21	1893	20
1907	17	1909	17	1918	25
1925	18	1925	16	1929	11
1973	48	1972	47	1973	44
1979	6	1978	6	1980	7
1989	10	1986	8	1990	10

By mid 1991, home building had dropped to levels lower than the 1982 and 1974 real estate depressions, with the lowest number of permits since 1957 and a housing-start level matching 1946 (Lehman, 1991). Land prices dropped 10% to 40% (Salmon, 1991).

The real-estate cycle in the U.S. is summarized in Table 1.

Real-estate values and construction have peaked one to two years before a depression, and have stayed at peak levels until the onset of the downturn. The historical evidence is consistent with the theory that speculative booms in real-estate prices and construction act as an impetus for the downturn itself. Similar histories have taken place in other countries, including Great Britain and Japan (Harrison, 1983).

VII

The Shock of Public Works

ADAM SMITH (1976 [1776], Book I, p. 275) noted that "Every improvement in the circumstances of society tends either directly or indirectly to raise the real rent of land, to increase the wealth of the landlord." Real-estate speculation as it has existed has not been a pure market phenomenon, but has been greatly induced by public works and other government services.

Public works played a key role in the boom-bust cycles of the 1800s. In the 1830s the major project was canals, and then it was the railroads. Infrastructure for automobiles, and also public transit systems, have been important in the 20th century (Foldvary, 1991).

In 1962 the Regional Plan Association of New York City computed the marginal capital cost to taxpayers of providing government services to one residence in the area at \$16,850. This was for streets, highways, schools, water lines, sewer lines and plants, police and fire protection, libraries, administration, etc. A UCLA study came up with a figure \$1,000 less than the New York City figure for Los Angeles (Prentice, 1976). As another example, the Metro system in the Washington, DC, area raised land values around the Metro stations by \$2 billion five years after the first trains began rolling, based on the most conservative assumptions, according to a congressional staff survey (Harrison, 1983, p. 221).

R.C.O. Matthews (1967, p. 107) stressed that "the nexus between building and transport is part of the mechanism by which building fluctuations acquire cumulative forces." Transportation improvements "act as a shock capable of setting a building cycle in motion." The tenets of urban land economics developed in 1926 by Robert M. Haig emphasized the complementarity between rent and transport costs (Alonso, 1964). When the transport is not financed from the generated rent, the site owners receive an in-kind subsidy of economic rent. In 1947, for instance, Chicago consolidated its transportation system, coordinating the subways, elevated line, street cars, busses, and suburban railroads; Homer Hoyt (1970, p. 366) observed that the effects of this transportation system on real estate values "can scarcely be overestimated."

Besides such local public works, there are state and federal government services that generate rent. The purchase of land in anticipation of the provision of increased services to a new area, and the lobbying for public works and transportation by landowners, can be regarded as "economic-rent seeking," the attempt to capture the expected value of these government services, capitalized in the increased price of land.

John Maynard Keynes argued for public expenditure of public works to stimulate aggregate demand. That many of his followers believe that such government stimulus is needed to correct what they believe to be a "fundamentally flawed, non-self-correcting market economy" (Rowley, 1987, p. 154) is ironic, since such public works, combined with credit expansion,

so often induces speculation in the real estate market, with its resultant booms and busts. Every increase in government expenditure that has social value creates an economic shock in the form of a rapid increase in site values if it is not offset by a collection of the economic rent generated or expected.

VIII

Conclusion

THE GEO-AUSTRIAN SYNTHESIS a theory of the business cycle with more explanatory depth than conventional theory, is consistent with economic history, and is comprehensive in that it includes both the financial and real elements and their interconnections. It does not provide the only explanation for cycles, but does encompass the major booms and depressions. The Austrian and geo-economic theories have been incomplete, and the synthesis is mutually complementary, Austrian theory providing the role of interest rates and the capital-goods structure, and geo-economics identifying the key capital-good malinvestment and the role of land speculation and fiscal policy.

The 18-year cycle in the US and similar cycles in other countries gives the geo-Austrian cycle theory predictive power: the next major bust, 18 years after the 1990 downturn, will be around 2008, if there is no major interruption such as a global war. The geo-Austrian synthesis provides a research agenda that can test historical cases in more detail. Much work needs to be done on empirical studies linking the money supply, real estate markets, and business cycle. However, given the evidence as presented here, the Georgist component of the geo-Austrian synthesis is testimony to the insight of Henry George, who originated one of the earliest theories of the business cycle, a theory which has been confirmed by subsequent history as a relevant and important explanation of booms and busts.

Endnote

1. The data from 1818 to 1929 are from Harrison (1983, p. 65), except for building data for the 1909–1929 period, which are from Hansen (1964, p. 41). Data for 1972–1989 are from *Statistical Abstract*, 1996, housing prices and “Value of New Construction Put in Place” reports of the U.S. Department of Commerce, Bureau of the Census. The land-value peak for 1989 is from the Board of Governors of the Federal Reserve *Balance Sheets for the U.S. Economy* (1991).

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