THE AUSTRIAN SCHOOL IN THE NBER'S BUSINESS CYCLE STUDIES

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Abstract: References to the Austrian School appeared in business cycle studies published by the National Bureau of Economic Research, founded in 1920, each decade the nonprofit published a study in the 20th Century. The earliest (1927) and most recent (1992) references were to Friedrich A. Hayek and Ludwig von Mises. References to Joseph A. Schumpeter are explained by the institutional economics of NBER research directors Wesley C. Mitchell and Arthur F. Burns.

Key words: Austrian School of Economics, business cycle, National Bureau of Economic Research (JEL classifications: B25, E32)

Introduction

The Business Cycle Dating Committee of the National Bureau of Economic Research (NBER) is the unofficial umpire of U.S. cyclical turning points within the economics profession. Some research has questioned the NBER's methodology and turning points[1] yet many economists accept its business cycle chronology, which dates to 1854.

Founded in 1920 and based in Cambridge, Mass., the NBER is a nonprofit that receives its funding from individuals, corporations and foundations. The NBER

[1] Koopmans (1947) is a critique by an econometrician. Cloos (1963, a, b) is a critique by a Federal Reserve economist. Romer (1994) and (1999), a member of the Business Cycle Dating Committee, presents an alternative chronology of cyclical turning points.

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describes itself as “the nation's leading nonprofit economic research organization.” According to the NBER, “Twelve of the 31 American Nobel Prize winners in Economics and three of the past Chairmen of the President's Council of Economic Advisers” have been NBER researchers. (www.nber.org/info.html) NBER researchers use an inductive-measurement approach. These include developing new statistical measurements, and estimating quantitative models of economic behavior. These methods are applied to the business cycle. The NBER has published 32 “studies in business cycles” in its 85-year history.

NBER research directors Wesley Mitchell (1874-1948) and Arthur F. Burns (1904-1987) have been major intellectual influences on the Bureau’s cyclical research. Mitchell and Burns were among a particularly large concentration of institutional economists at New York’s Columbia University. (Rutherford, 2004, 32). Mitchell studied under Thorstein Veblen, the founder of the institutionalist school (Oser and Blanchfield, 1975, 360). Burns was Mitchell’s protégé in the early 1930s (Hetzel 1998, 24). The institutional economics of Mitchell and Burns extended to their business cycle research. *Measuring Business Cycles* is the title of their masterpiece, published by the NBER in 1946. An element of institutional economics in business cycle studies is its emphasis on empirical research and measurement. Mitchell saw quantitative and statistical work combined with policy experiments as “the closest approach to the methods of the natural sciences possible in economics (Rutherford, 1998, 19). Mitchell and Burns used an inductive-measurement approach in their business cycle studies. Mitchell argued in an early essay (1896, 157), “Deductive reasoning is proverbially likely to lead the inquirer astray, unless its results are checked and corrected by inductive

investigation." Burns and Mitchell (1946, 8-10) explain this 'inductive verification of business cycle hypotheses.'

Traditional Austrians, by contrast, approach the business cycle as an exercise in deductive reasoning, not measurement. Economics' purpose is not to apply the methods and procedures of the laboratory (Mises 1949, 7-8). Rothbard (1962, 1970, 26) rejects the idea that economics, "to be really scientific," should be elaborated according to the symbolic notations of mathematical logic." Mathematical logic is appropriate to physics, not economics (Rothbard 1976, 22).

The inductive-measurement approach begins with the collection of empirical data and proceeds to cyclical theory. The deductive approach starts and ends with theory. It does not rule out data collection, but terms these "historical accounts."

Despite these methodological differences, references to Austrian economists appeared in NBER business cycle studies each decade a study was published in the 20th Century. These include 16 of 32 NBER studies. The greatest number of references, including Schumpeter, Hayek and von Mises, occurred in the 1920s and 1990s, Most references since 1920 have been to the neo-Austrian Schumpeter, and are explained by Mitchell and Burns' institutional economics.

The 1920s

The NBER's first step toward identifying historical business cycles, after its founding in 1920 was to complete chronological records of changes in general economic conditions in the United States and England (1790-1925), France (1840-1925), Germany (1853-1925), Austria (1867-1925), and twelve other

countries (1890-1925). (Moore and Zarnowitz in Gordon (1986 NBER 743)) These business annals were based on studies of official documents, reports by contemporary observers and students of economic history, periodicals, pamphlets, and books. The resulting volume listed several hundred sources.

Thorp (1926 NBER) includes research by Hayek and von Mises but is defined as an *annal*, not an NBER business cycle study. Hayek and von Mises' work is an example of a historical account. Hayek[2], Mitchell writes in his introduction (p.19), contributed revisions to Austria's business. Thorp cites von Mises (1915) as a source (p. 230) for Austria's business annals in the 1912-1913 period:

1912 Prosperity; recession; depression.

Increasing activity and progress; Balkan War; autumn, plunges industry into deep depression; numerous failures; foreign trade very active.
Severe monetary strain; active speculation, especially first half-year; bourse severely depressed, last quarter; Balkan moratoria cause difficulties.
Excellent crops.
Revival of emigration; uncertainty due to Balkan War; October.

1913 Depression; panic.

Widespread inactivity; much unemployment; foreign trade declines sharply.
Money tight; financial panic necessitates moratorium; bourse dull.
Fair rye and wheat, excellent oat crops.
Internal and external political troubles; record emigration; army mobilised for several months fearing Russian aggression.

Mitchell (1927, 1956 NBER) is the first Bureau business cycle study. More Austrians are cited than in any NBER study until Zarnowitz (1992). Mitchell terms

[2] Mitchell (1927 NBER, 202) explains, "Finally, in January 1927, an Oesterreichisches Institut fur Konjunkturfurschung was organized in Vienna, with a scientific staff directed by Dr. F.A. von Hayek." Mitchell notes (p. 361), "Dr. F.A. von Hayek of Vienna reviewed the Austrian annals." Mitchell explained Thorp's work as follows: "Dr. Willard L. Thorp, who directed the work of compilation, ransacked the rich resources of the New York Public Library for official documents, reports, pamphlets, periodicals, and books dealing systematically or incidentally with business conditions in various countries. The generous cooperation of several foreign scholars brought additional materials and special knowledge to the work." Mitchell and Hayek also exchanged correspondence (Kauder 1965).

Hayek's work "scientific" (202), and refers to Bohm-Bawerk's "theory of crises" (431-32), and Ropke[3] (1926) on "the volume of credit" (35). Mitchell (49) also refers to an earlier Ropke (1922) work. Mitchell devotes the most space to Schumpeter (1910, 1912, 1914, 1926), identified with economists who "regard business cycles as by-products of progress in the arts of production and of business organization"(93). He discusses Schumpeter in the following passage:

"Professor Joseph Schumpeter of Bonn holds that to explain business cycles by errors bred of uncertainty and nourished by mass psychology is superficial. That errors are made, that they wax with prosperity, and that they play a considerable role in the cycle he admits; but, he adds, crises and depressions would continue to run their round if miscalculations were eliminated." (20)

"The fundamental cause of business fluctuations, Schumpeter finds in the innovations made from time to time by the relatively small number of exceptionally energetic business men—their practical applications of scientific discoveries and mechanical inventions, their development of new forms of industrial and commercial organizations, their introduction of unfamiliar products, their conquests of new markets, exploitation of new resources, shiftings of trade routes, and the like. Changes of this sort, when made on a large scale, alter the data on which the mass of routine business men have based their plans. These

[3] Mitchell cites Bohm-Bawerk in this passage: "As late as 1898, Bohm-Bawerk thought it necessary to argue that a theory of crises "should always form the last, or next-to-the-last, chapter in a system of economic theory, written or unwritten." The converse view, that ideas developed in the study of business fluctuations may lead to reformulations of economic theory, still strikes most economists as strange."

Mitchell cites Ropke in this passage: "The "real cyclical bacillus" he finds in periodic variations of the ratio between accumulation and consumption, which cannot be altered much without producing serious disturbances in the process of exchange. But these periodic variations in the ratio between accumulation and consumption are due in large part to periodic changes in the volume of credit—changes which appear in discrepancies between the real and nominal rates of interest, in the liquidity of the credit-granting banks and in their operating policies."

plans doubtless involve a certain element of error; but business innovations produce a far graver situation. (20-21)

Enterprise must adapt, Mitchell explains Schumpeter's theory, "or go to the wall:"

"Considerable numbers do fail. A far larger number manage to work out new plans based on the new data concerning prices, costs, methods and markets. But this process of feeling out the novel conditions and making adjustments to them takes time. While the readjusting is under way, the making of innovations slows down; even the most restless of enterprisers cannot get the capital and cooperation required to carry out their schemes. This is the period of depression." (21)

Depression lasts "until the readjustments have gone far enough to produce a fairly stable condition of affairs, stable enough to let men regain confidence in the future." Business "resumes operations on a large scale," and prosperity returns: Mitchell explains the next stage of Schumpeter's theory:

"There follows an increase of demand and a rise in the price of consumers' goods. The general activity thus initiated brings prosperity to the mass of enterprises-—and stimulates further innovations. Prosperity continues until the unsettling consequences of the business changes begin to appear *en masse* in the shape of large supplies flooding the market, high costs of materials and labor, shifting of demand to new products, the supersession of old sources of production by new sources, and so on. Then comes a new crisis and a new period of readjustments."

To complete Schumpeter's theory, Mitchell explains, it is necessary to show why innovations themselves come in *waves* (emphasis added):

"Schumpeter explains that the combination of capacities required for conceiving new undertakings and carrying them through all obstacles and hazards is rare among men; but that when a few highly endowed individuals have achieved success, their example makes the way easier for a crowd of imitators. The rising prices, the increasing demand, the spread of optimism make borrowers more eager and lenders less cautious. Men who do not have the capacity to originate new schemes may have the wit to profit by and even improve upon the work of the pioneers. So, once started, a wave of innovation gains momentum—until it is checked by the consequences which it produces."

Waves have served as the basis for empirical research in physics. They also play a central role in Schumpeterian cycllical theory.[4] NBER researchers using an inductive-measurement approach would exhibit curiosity about this theory.

The 1930s

The NBER published several works on the business cycle[5]. None were termed "NBER studies in business cycles."

The 1940s

4. Schumpeter (1942, 68) also cites "long waves." Schumpeter was a neo-Austrian who accepted Mengerian and Bohm-Bawerkian cencepts while rejecting other Austrian ideas (1911, 1934, 1955, 16; 1939, 505, 561) "Boehm-Bawerk alone," he wrote, "achieved complete consistency" on "the ultimate elements of production" in "the hierarchy of goods," and is "the most important authority" on "the element of time in economic life" (1911, 17n, 34). Schumpeter (1939) cites vcn Mises (634n) and Hayek. A "Hayek effect" (812) is "the effect on investment of a rate of interest lower then would have been obtained had the process been left to itself." Schumpeter (296n) acknowledged he was not "a wholesale admirer" of Hayek's theory "*as far as it claims to be a fundamental explanation* of the causes of the cycle. But he wrote that "the course of American events" in the 1820s, 1830s, 1920s and 1930s "invites interpretation in terms of that theory."

5 Schmidt (1934), Bliss (1935), and Mitchell and Burns (1936, 1938)

Burns and Mitchell (1946 NBER)[6] is the second business cycle study. It includes 13 pages that refer to Schumpeterian cyclical theory, including a discussion of waves. Schumpeter (1939) bases his theory on his interpretation of waves and cycles developed by three economists: Joseph Kitchin**,** Nikolai D. Kondratieff (1892-1931?) and Clement Juglar (1819-1905). Kitchin identified a three-to-five year inventory cycle, Kondratieff identified half-century "long waves," and Juglar identified a seven-to-11 year industrial cycle. Schumpeter developed a theory based on three Kitchins per Juglar and six Juglars per Kondratieff wave.

Burns and Mitchell discuss the idea that "business cycles are "minor subdivisions of 'major' or 'long' cycles or waves" in this passage (382):

"Several investigators have found long cycles by analyzing statistical records. Thus Kondratieff finds 'long waves' lasting about 50 to 60 years; Kuznets finds 'secondary secular movements' averaging 22 years in production and 23 years in price series; Burns finds 'trend cycles' of about 15 to 20 years in production and other business activities; Wardwell finds 'major cycles' that average about 15 years in the United States and 9.5 in Germany; Kitchin finds 'major cycles' lasting usually about 7 years, sometimes 10 years. If business cycles really succeed one another in cyclical fashion, then the position that an individual business cycle occupies in a 'long cycle' determines whether it is a mild movement of slight consequence or a convulsive fluctuation, whether the revival with which it begins is vigorous or mild, whether its expansion develops into a 'boom;' whether its recession becomes a 'crisis,' and whether its contraction turns into a drastic 'depression.'

[6] Burns' papers at the Dwight D Eisenhower Presidential Library in Abilene, Kansas also include two articles by neo-Austrian Benjamin M. Anderson, Jr., published in 1929 and 1931 (Box 198).

Schumpeter, they write, "claims that "industrial history" establishes Kondratieff long waves, that each Kondratieff cycle contains six 'Juglar' cycles "of from nine to ten years' duration" and that "every Juglar so far observed…is readily…divisible into three cycles of a period of roughly forty months." (441-48) [7]

Burns and Mitchell agree the 40-month cycle is more clearly marked in the U.S. than elsewhere. But even in the U.S., they add, "only about 28 percent of our measures of business cycles since 1854 fall between 37 and 43 months." They reject Schumpeter's "chronological scheme" but term it "a valuable suggestion for future research." Fels (1951, 400) says Burns and Mitchell did not test such hypotheses as the existence of a Kondratieff cycle or of Schumpeter's combination of Kitchin, Juglar and Kondratieffs. Rather, they tested the limited question of whether such long cycles are so clearly evident as to impair the usefulness of the NBER's technique for analyzing statistical time series. NBER researchers cited Schumpeter in studies published in each subsequent decade.[8] Schumpeter's argument for three 40-month Juglar cycles was also examined. [9]

[7] Schumpeter (1939, Vol. I, 161-74) warns "there is no rational justification…for assuming that the integral number of Kitchins in a Juglar or of Juglars in a Kondratieff should always be the same." He states "it is possible to count off, historically as well as statistically, six Juglars to a Kondratieff and three Kitchins to a Juglar—not as an average but in every individual case;" but qualifies this claim with the proviso "barring very few cases in which difficulties arise." The Kitchin cycles, Schumpeter writes, are mostly "somewhat less than 40 months:" they are "fluctuations shorter than those of the Juglar group, but which we nevertheless believe to be of similar nature and which we think to be tolerably represented by a typical duration somewhat exceeding three years." Moore and Zarnowitz in Gordon (1986 NBER, 522) include a review of "cycles of cycles."

[8] Burns (1969 NBER, 12) lists Schumpeter among the "small number of economists" that made "truly outstanding contributions to knowledge of business cycles:" Abramovitz (1950 NBER, 23, 494), Friedman and Schwartz (1970 NBER, 95n), Gordon (1986, 1), and Zarnowitz (1992 NBER, xvi, 9, 31, 239) also cite Schumpeter.

[9] Moore and Zarnowitz in Gordon (1986, 738) write, "Schumpeter's 1935 hypothesis…has also failed to be validated." Zarnowitz (1992 NBER, 240) notes Burns and Mitchell (1946 NBER) was "a tentative judgment conditioned by the deficient, available data, not a decisive rejection of all notions of periodicity. But whatever configurations of minor and major cycles may have prevailed in the half century here considered, they did not continue in the following era. The short but severe slump of 1937-38 occurred only 5 years after the end of the Great Contraction of 1929-

The 1950s

The NBER's inductive-measurement approach was under attack from econometric critics as the 1950s began. Gordon (1986 NBER, 27) notes the main methodological tension was "between the econometric method," and the "historical" or "historical-quantitative" method, represented both by the NBER and by "the descriptive historical method" as practiced and defended by R.A. Gordon and Schumpeter. Gordon observes that Schumpeter was more charitable to the econometric method than econometricians were to the historical approach:

> Schumpeter thought the historical method most suitable for studying impulses and the econometric method for studying propagation mechanisms: "historical analysis gives information as regards impulses and dynamic models as regards the mechanisms by which these impulses are propagated through the system or, to put it differently, as regards the manner in which the economic resonator reacts when 'irritated' by the impulses."

Econometricians were not as willing to accept a role for the historical method. Gordon quotes one critic, "Facts, especially statistical facts, do not by themselves prove a relationship between cause and effect." Another critic, econometrician Jan Tinbergen at a 1951 NBER Business Cycle Conference, stressed the importance of developing refutable hypotheses."

Austrians reject the use of laboratory experiments to investigate hypotheses in economics. Von Mises (1949, 31) writes, "No laboratory experiments can be

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33." After World War II, U.S. expansions grew longer in comparison with pre-1945 and especially pre-1919 cycles. If major cycles were to be defined as involving deep depressions, he writes, "they could not be found at all in the economic history of the United States after the 1930s."

performed with regard to human action. We are never in a position to observe the change in one element only, all other conditions of the event remaining unchanged. Historical experience as an experience of complex phenomena does not provide us with facts in the sense in which the natural sciences employ this term to signify isolated events tested in experiments." A reference to Misesian cyclical theory, which is *deductive*, did not appear in an NBER study until 1992.

The econometric critique proved influential whether one terms the NBER's methodology "inductive-measurement" or "historical-quantitative." Haberler (1937) is a review by a neo-Austrian.[10] Mitchell (1951 NBER, 4-5) calls it "an excellent beginning," adding the caveat: "the next stage in this investigation—the application, as far as possible, of quantitative tests to the various causal hypotheses" was a much more formidable undertaking." Mitchell says Tinbergen (1939) undertook this step, applying "multiple correlation analysis to test several hypotheses concerning the interrelations among cyclical fluctuations in different activities." Mitchell terms his work, "notable for its blend of statistical skill with theoretical finesse, and the cautiously stated conclusions are highly suggestive."

[10] Other references to Haberler are by Hultgren (1948 NBER, 73) and Zarnowitz (1992 NBER, 16), who cites Haberler (1937, 1964) on the under-consumption theory, termed "a theory of the crisis and depression rather than a theory of the cycle." Zarnowitz also cites Haberler on (113) "the contemporaneous evolution of "classical" economists' views on unemployment and policies;" on (155) the link between "the stickiness of wages" and "the stagflation of the 1970s;" and on (169) endogenous business cycle theories."

The 1960s

Nine NBER business cycle studies were published in the 1960s. Friedman and Schwartz (1963 NBER, 81n) and Burns (1969, 12) briefly mentioned Schumpeter. Overall, most, like Cagan (1965 NBER), ignored the Austrians.[11]

Another neo-Austrian, Morgenstern[12] (1963), issued a cautionary note on the use of data in measurement. His warning on the limitations of revised data was cited by Cole (1969 NBER, 4):

"No one, of course, in reviewing the record of revisions supposes that they measure the total error in the initial estimates. Instead, they are generally thought to provide an indication of the uncertainty attached to the initial estimates, as well as a rough index of the reliability of the component estimates."

Cole continues:

""On the other hand, the fact that a component is revised is no guarantee that it is more accurate. Indeed, one of the questions not explicitly considered in the earlier studies is whether or not the revisions actually improve the accuracy of the estimates. Though unlikely, it is nevertheless possible, as Morgenstern has emphasized, for the revisions to be perverse and augment measurement error."

[11] The study by the neo-Austrian Mintz (1967 NBER) was an exception. " Mintz found the volume, prices and value of U.S. exports show fluctuations that correspond well to cycles in the dollar value of imports by the outside world. Zarnowitz (1992 NBER, 28).

[12] Ekelund (1997) identifies Morgenstern with the Austrian School: "Oskar Morgenstern considered himself, first, last, and always, a direct descendant of and a worker in the Austrian tradition. In 1969, when he visited Texas A&M for several long stints, Morgenstern lectured to my "thought" classes on Austrian economics and its development in America." Morgenstern (1959 NBER) examined how business cycles spread from country to country, concentrating in financial markets in major industrialized nations (U.S., Great Britain, Germany and France) in the gold standard era (1870-1949) and interwar period (1925-38). Klein and Moore (1985 NBER, 285). See Zarnowitz (NBER 1992, 108) and Stock and Watson (NBER 1993, 280).

The 1970s

Friedman and Schwartz (1970 NBER, 95n) cite Schumpeter (1954, 288) on definitions of money, and his suggestion John Law must be classed as a 'theoretical metalist' (1954, 321-22).

The 1980s

Schumpeter was cited in all three NBER studies published in the 1980s: Moore (1983 NBER, 262-63), Klein and Moore (1985 NBER, 6), and Gordon (1986 NBER), which reported on the proceedings of the second major Bureau conference devoted to business cycles.[13] Lovell (1986, 105-110), in his comment on Eckstein and Sinai (1986, 39-105), mentions Schumpeter:

"(T)he business cycle mechanism described is not that different from the one discussed by Joseph Schumpeter … and much that is in the paper would offer no surprise to readers of Burns and Mitchell. In particular, Eckstein and Sinai follow Burns and Mitchell in stressing the sheer complexity and irregularities of business cycle phenomena."

Moore and Zarnowitz (735-779) argue Schumpeter's cyclical theory is unproven:

"(T)he range of admissable fluctuations is wide, accomodating short and long, weak and strong cycles...Burns and Mitchell (1946) found no cogent reasons to differentiate a priori between "minor" and "major" or between "Kitchin" and "Juglar" cycles. However, this is a case of suspended judgment, not a definitive conclusion…Schumpeter's 1935 hypothesis that each such long wave contains six Juglar cycles of from nine to ten years' duration,

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[13] Proceedings of the first NBER business cycle conference (1949) were published in 1951. Mitchell agreed to discuss his forthcoming book (1951), but died before the event began. Schumpeter presented a defense of the historical approach to the analysis of business cycles but died before he could revise his paper for the conference volume." Gordon (1986 NBER, 26)

while every Juglar is divided into three Kitchin cycles of roughly forty months each, has also failed to be validated."

The paper features the first reference to Hayek in an NBER business cycle study since Mitchell (1927):

"(I)t is generally correct to see the early theories of business cycles as mainly endogenous, that is, concentrating on the internal relations of the economic system rather than on the effects of external shocks; as multicausal, that is, concerned with interactions of the real, monetary, and expectational factors; and as dynamic, that is, incorporating elements of long-term growth into the analysis of short-term instability." (Footnote: "The characterizations above apply broadly to most of the principal contributions to the literature on business cycles in the period between the 1890s and the 1930s: Tugan-Baranovskii, Bouniatian, Aftalion, Pigou, Hawtrey, Robertson, Mitchell, Spiethoff, Schumpeter, and *Hayek* (emphasis added)."

The 1990s

Zarnowitz (1992 NBER) is the most comprehensive examination of Austrian and neo-Austrian views in an NBER business cycle study. Schumpeter and Haberler are termed "pioneers in the field (preface, xvi)," von Mises reappears for the first time since Thorp (1926), and Hayek, Morgenstern and Mintz are also referenced.

Austrian theory is introduced (p. 31) in a section that reviews "Disparities and Common Elements in Some Early Theories" of self-sustaining cycles:

"The classics of business cycle literature made lasting contributions to the description and analysis of the motion of industrialized market economies. They addressed the cumulative processes of inflationary expansions and deflationary contractions induced by bank credit fluctuations constrained by the availability of reserves under the gold standard (Hawtrey 1913). The role of discrepancies between the market and the "natural" interest rates in this process was much explored following Knut Wicksell ([1896] 1936). At below-equilibrium market rates, excessive bank credit creation produces overinvestment in capital-goods industries and imposes "forced saving" on those whose incomes lag behind inflation (Hayek 1933)."

Zarnowitz cites Haberler (1937, 1964, 10)[14] on the importance of "the *interaction* of changes in money and credit with changes in economic activity" in Austrian and other theories:

"It is clear that there are important disagreements among their theories, particularly with respect to the relative importance of monetary and real factors, long a major point of contention. But the dominant tone is one of awareness that what matters most is the *interaction* of changes in money and credit with changes in economic activity, particularly those connected with business investment. Most of the writers considered business cycles to be caused and conditioned by a number of factors and circumstances, and so their theories typically overlap and vary mainly in the emphasis accorded the different elements."

Zarnowitz notes these theories are largely *endogenous*:

"The first aspect of essential agreement is that the theories are mainly endogenous…(The authors) believed that "the cyclical movement has a strong tendency

[14] Zarnowitz notes this characterization is strongly confirmed by "numerous passages" in works by Robertson (1915), Mitchell (1927); Hayek (1933), and Pigou (1927). "For Schumpeter," he writes, "the basic mechanism of credit-financed innovations is of much greater intrinsic interest than the multitude of diverse "external factors," no matter how important the latter may be on any particular occasion."

to persist, even when there are no outstanding extraneous influences at work which can plausibly be held responsible." Hence they viewed the role of the exogenous forces as secondary, even though acknowledging that the latter continually act "as the originators or disturbers of endogenous processes, with power to accelerate, retard, interrupt, or reverse the endogenous movement of the economic system."

The central bank's role is not examined, but the Austrian emphasis on interest rates as a source of cyclical fluctuations is explained in this passage (68):

"These received much attention in the literature from Wicksell and the Austrians to Keynes. Monetary intervention or excesses of credit creation were seen as causing interest rates to deviate from their equilibrium levels so that they fail to coordinate saving and investment decisions. Inconsistencies arise in the aggregate between the expectations of those who make these decisions and the expectations of the financial intermediaries. Monetarists opposed these ideas on the ground that investment and savings depend on the *real* interest rates, which cannot be affected by the banking system, except transitorily."

Zarnowitz presents Austrian ideas without accepting or rejecting them. His work features subtleties about Austrian cyclical views that underscore the scholarship of this NBER study.[15] These include his observation (15) Mitchell and Hayek had a "different outlook and procedure" regarding business cycles, but shared similar views on the role of the price-cost movement; and a reference (68) to "the real part of the theories of Hayek and Mises." Zarnowitz (53) notes Lucas (1977, 7) cited Hayek (1933) as an "intellectual ancestor" who posed the problem of explaining the business cycle as part, not a contradiction, of the equilibrium theory. "This was indeed Hayek's intent," Zarnowitz observes, "but it is also

correct to characterize his solution as a theory of monetary disequilibrium and an unstable cumulative process, with excessive credit creation causing distortions of relative prices and the structure of production (as Hayek 1933 and 1939 are commonly interpreted)."

Conclusion

Non-credible business cycle theories, like the "sunspot theory of the business cycle," disappear from the literature. References to Austrian cyclical theories in NBER studies over a multi-decade in the 20th Century underscore their credibility.

The institutional economics of Mitchell and Burns are a factor explaining references to Schumpeter in NBER studies. The essence of institutional economics applied to cyclical research is the inductive approach, i.e., a reasoning process of generalizing from assembled economic data. Mitchell and Burns (1946, 8-10) argue, "(A)n investigator who seeks earnestly to discover the cause or causes of business cycles should not restrict himself to testing any single hypothesis." And, "The theorist often stops before his work is finished, leaving 'inductive verification' to others who may or may not take on the job." Austrians, by contrast, use a deductive approach characterized by a process of logical reasoning from stated propositions.

Critics of the NBER's business cycle research include a Federal Reserve economist (Cloos, 1963) and econometricians. Unless these critics are prepared to present a more compelling alternative the NBER will continue as the economic

[15] Zarnowitz is a member of the NBER's Business Cycle Dating Committee,

profession's business cycle umpire. In a free society, individuals with mutual common interests are free to associate, on a voluntary basis, to explore ideas and publish studies. The nonprofit NBER is an example of this process at work.

There are potential research topics acceptable to both non-econometric methods identified by Gordon (1986 NBER). Three, in particular, stand out: the creation of annals (Thorp 1926 NBER), termed "historical accounts" by von Mises; the cyclical relationship of producer and consumer goods industries (Hayek (1933), von Mises (1949, 93-4)); and the theory that evidence of economic contractions first appear in "heavy industries" (von Mises (1949, 560)).

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