

Macroeconomics Reconsidered

by Kyle S. Swan

Mark Skousen's reconstruction in *The Freeman* of the debate between the Austrian and Monetarist schools on the trade cycle challenges the economics profession. In recent "Economics on Trial" columns, Skousen hands down the verdict to modern economics: *put capital back into your macroeconomics*. John Maynard Keynes, of course, took capital out of macroeconomics, masking with crude aggregates the micro foundation of the productive process. However, in the Austrian school, capital never left. Austrians consistently recognize the necessity of capital theory, especially one emphasizing the role of time. And capital and time are central to a proper understanding of the trade cycle.

The standard story of capital theory begins by defining capital as the total stock of productive wealth (identified in mainstream models as k and reckoned as a monetary value). Capital is increased by saving, and the greater is the stock of capital, the greater is output. An economy's rate of economic growth depends upon k . The marginal productivity of capital is reflected in the interest rate; capital generates interest. In this mechanical system where k is (assumed to be) automatically productive, saving necessarily generates growth. Consequently, planning for the future occurs only when individuals make conscious decisions to save.

In his debate with the American economist John Bates Clark, the Austrian Eugen

von Böhm-Bawerk countered these mechanical theories by emphasizing the importance of time. Capital is the form multi-period plans take as these plans materialize. Essentially the same debate was repeated years later between Frank Knight of the Chicago school and F.A. Hayek.

Knight, who taught Milton Friedman, described capital as a self-perpetuating fund—as a stock generating a continual flow of output in perpetuity. Like the Energizer bunny, it keeps going and going and going. . . . Ownership of capital assures a steady income. This interest income can be saved in order that a capital good may be replaced when its durability wanes. In this sense, capital reproduces itself and provides for its own maintenance.

Austrians have a very different view of production. For Austrians, production using capital is a process of converting higher-order goods (e.g., wheat) into lower-order goods (e.g., bread) to satisfy consumer demands. In the broadest sense, the economic process refines and utilizes nature's resources for the fulfillment of individual goals. Something is important and attains goods-character only if it is perceived to contribute to the satisfaction of consumer demands. The production process, therefore, depends on the purposeful decision-making and planning of entrepreneurs and investors seeking profits by using resources and other inputs to better satisfy consumer wants. Knight's vision of automatic capital maintenance ignores the very *raison d'être* of production: individual planning and de-

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cision-making to satisfy consumer demands. Also, Knight ignores the central question of economics in his capital theory: how does complex plan coordination take place, especially through time?

Knight saw no analytic advantage in emphasizing time or multi-period planning. If you have the shirt on your back, seven shirts at the laundry, and seven at home, it takes no time at all to get clean shirts. You go to the laundry with seven dirty shirts, hand them over, and immediately get seven clean shirts. If you have the productive stock (15 shirts), there is no need to plan and time is irrelevant. If the average period of production is calculated, the economic process is synchronized. There is simultaneous production and consumption. In forestry, loggers synchronize cutting and planting. Real time is zero. The forest is a permanent source of wood.

The Importance of Time

Austrians resist this notion of capital as an aggregate stock of productive wealth, always emphasizing the importance of time. Something is not capital in virtue of its physical characteristics, but because of its economic functions; i.e., the degree to which people perceive their dependence on command of it for the satisfaction of their goals. It isn't the case that a person expects seven clean shirts at the laundry merely because he brings in seven dirty shirts. Rather, a person takes seven dirty shirts to the laundry in order that he may get them back clean in a week's time. Logging companies plant trees expecting that they will grow and be cut down many years later. Here, capital retains its subjective character. Rather than a stock of things, capital is a manifestation of human production plans. Output does not flow automatically as in Knight's example of fruit from trees. Individuals' plans initiate and drive a process taking place in real time and subject not only to imperfect foresight, but to human error as well.

Furthermore, the conception of an aggregate stock of k ignores the process by which

value is imputed at different stages of completion. Hidden in these aggregates are the purposes and plans of millions of people. An aggregate of purposes and plans makes no sense.

But the claims of the standard neoclassical approach must be addressed at even a deeper level. Austrians who simply mock and dismiss mainstream capital theory as "breakfast-cereal theories of capital" (*Special K*) miss an important point. Mainstream economists are not naive. They recognize that it takes a week for shirts to be cleaned. Mainstream economists are not mystics who believe that capital is a magical substance that *just is* productive. Rather, they maintain that there is no *analytic* advantage in emphasizing multi-period planning; that it is unnecessary to focus on this aspect. Time, in this view, is analytically unimportant. Why insist on emphasizing multi-period planning if doing so further complicates or even invalidates neoclassical modeling and adds nothing to the analysis?

Thus, to effectively respond, Austrians must expose the costs of ignoring time and individual plans and preferences. They must show that the mainstream practice generates error or oversight, while the Austrian "lens" brings relevant features of economic reality into fuller or sharper focus.

Consider the Austrian trade-cycle theory. The capital combination at any time reflects the plans and preferences of individuals. Given current prices, expectations of future prices, and the interest rate, businesses arrange their capital resources in ways that hopefully will meet with the most favorable response from consumers. However, if the central bank lowers the interest rate below the natural rate by increasing the money supply or lowering the discount rate, this move sets in motion a self-reversing process where the boom turns into the inevitable bust.

Here's how. At first, production schedules are guided toward longer-term projects in response to the false price signals created by central-bank money creation. (Lower market interest rates falsely promise a more generous supply of funds for capital invest-

ment in the future.) Projects are undertaken today with the expectation that complementary capital goods will be available when needed tomorrow. However, these longer-term projects do not reflect the true preferences of consumers who, it turns out, don't save as much of their incomes as would be necessary to keep the interest rate as low as it was driven by the central bank. The entire structure of production is distorted as central bank policy directs resources away from projects consumers find more valuable toward projects of less value. The complementary goods of longer-term projects that businesses have undertaken will be unavailable. Therefore, not all of these projects will be completed. Businesses, finally seeing the handwriting on the wall, must halt, regroup, recoup, and liquidate as the correction phase begins.

This explanation of the trade cycle hinges on several key factors tied intimately to capital theory. First, production takes time. In non-instantaneous production, error is costly. The longer the malinvestment, the greater the necessary correction. Second, capital goods are heterogeneous and are often appropriate for only a small range of uses. If a business overinvests or malinvests in one period, it cannot easily divest or change production or investment projects in the next. Third, capital goods have a limited range of competing uses, and production plans often necessitate complementary goods for their fulfillment. Because resources are scarce, many projects must fail

when false signals draw complementary goods away.

A theory of capital that ignores time and hides the relevant information in crude homogeneous aggregates can't very well explain the trade cycle. The Austrian emphasis on the time structure of production based on individual purposes and plans enriches the story of boom-bust cycles. It should be no surprise that Milton Friedman does not see any significant correlation between an inflation and a recession. His capital theory does not allow him to see the process at the micro level that makes the link.

However, work towards this kind of recognition has only barely begun as evidenced by many of the experts quoted by Dr. Skousen. Moreover, Skousen's charge to rethink capital theory is a big challenge. Capital theory within the Austrian paradigm is probably the least developed area. Hayek's *Pure Theory of Capital* (1941) and Ludwig Lachmann's *Capital and Its Structure* (1956) are the only modern comprehensive studies of the subject.¹ If we agree that capital is key to understanding phenomena such as the trade cycle, we must devote more effort towards formulating a defensible capital theory. □

1. A few excellent article-length treatments of Austrian capital theory exist. See Roger W. Garrison, "Time and Money: The Universals of Macroeconomic Theorizing," *Journal of Macroeconomics*, Vol. 6 (Spring 1984), pp. 197-213, and Garrison, "A Subjectivist Theory of a Capital-using Economy," in Gerald P. O'Driscoll, Jr., and Mario J. Rizzo, *The Economics of Time and Ignorance* (New York: Basil Blackwell, 1985), pp. 160-187.

Op-Ed Watch

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Cholecystectomy, How Is It Made?

by Leonard A. Metildi

In the spirit of Leonard Read's essay on the pencil—how no one knows how pencils are made—it is interesting to investigate a surgical operation (a cholecystectomy—removal of the gall bladder) to show that no one knows how *it* is made. As the pencil is a relatively simple item, yet its manufacture and distribution are so hopelessly complex that a centralized economy could not begin to duplicate the market's efficient performance of these functions, medical surgery is likewise so complex that no central-planning authority could ever ensure that it is readily available at reasonable prices.

A few simplifying assumptions are useful:

1. The clinical case is straightforward and simple—the patient is otherwise healthy with single organ system involvement.
2. The diagnostic workup is done efficiently.
3. The operation and the post-operative course are uneventful.
4. The standard surgical instruments (forceps, scissors, knife handles, needle holders, etc.) are made by the same manufacturer.

A 50-year-old male with symptoms of gallbladder disease is the patient. His medical history is fine and he is on no medications. To confirm the diagnosis, the surgeon obtains an ultrasound of the gallbladder (done on a Accuson 128 with a Matrix video

imager using conduction medium by Parker). Surgery is scheduled. For the pre-operative laboratory work, the patient has an EKG (Hewlett-Packard), chest x-ray (GE and Kodak), complete blood count (Coulter T890), chemistry profile 18 (Kodak Ektachem), and a urine analysis (Ames Multistix).

The patient is admitted to the hospital on the morning of surgery. An Imed pump is used to start an intravenous of Ringer's lactate (solution, polyvinyl bag, and tubing from Abbott, catheter from B-D Corporation, alcohol pads from Kendall). The patient is given a shot of subcutaneous heparin from Elkins-Sinn, a dose of Kefzol from E. I. Lilly, syringe and needle from B-D, and anti-embolic stockings from Kendall are put on. In the operating room, the patient is placed on a Skytron Elite 6001 table and given several medicines (sodium pentothal-Abbott, fentanyl-Janssen, succinyl choline-Abbott, pavulon-Gensia) as well as oxygen by mask from a Narkomed 2 anesthesia machine manufactured by North American Drager. (The mask is from Bay State Anesthesia.) He is then endotracheally intubated using a Welch Allyn laryngoscope, a Mallenckrodt Critical Care endotracheal tube, a tongue blade from General Medical Corporation, and an oral airway from Sun Medical Inc. The patient is then given oxygen and nitrous oxide from MG Industries, and isoflurane from Anaquest.

An open cholecystectomy with an intra-

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