

# AUSTRIAN BUSINESS CYCLE THEORY: VARIATIONS ON A THEME

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If a bank does not expand circulation credit by issuing additional fiduciary media (either in the form of banknotes or in the form of deposit currency), it cannot generate a boom.

—Ludwig von Mises, *Human Action*<sup>1</sup>

**S**ir John Hicks in 1967, in his critique of Friedrich A. Hayek's trade cycle theory, argued that Hayek's theory was not a theory of the credit cycle. It was instead,

an analysis—a very interesting analysis—of the adjustment of an economy to changes in the rate of genuine saving. In that direction it does make a real contribution. But it is a contribution which, when it was made, was out of due time. It does not belong to the theory of fluctuations, which was the centre of economists' attention in 1930; it is a fore-runner of the growth theory of more recent years. In that application we can still make something of it. (Hicks 1967, pp. 210-11)

A capital-based macroeconomics as developed in Garrison (2001) provides an extended graphical framework of a Hayekian model in a growth context that maintains, clarifies, and expands the cycle aspects of the model. Growth may be sustainable when it is preference-induced growth. Policy-induced growth is unsustainable growth and as such induces cycles into the

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<sup>1</sup>Murray Rothbard provided the citation in personal correspondence to Fred R. Glahe (February 21, 1994) and added, "The basic point is that banks only generate a cycle by expanding (fractional reserve) credit; the key is the act of credit expansion, not whether their interest charge was correct." The quote is from Mises (1966, p. 795, n. 5).

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growth process. While the modern mainstream assessment is that U.S. data support an interpretation that “fluctuations are best analyzed as being about trend rather than being beneath potential” GDP (Delong 2000, p. 92), a capital-based approach implies that cycles include both elements about trend and beneath potential.

A capital-based macroeconomic model helps one understand the myriad number of separate but interrelated decisions that determines a long-run growth trend, changes in the trend, and fluctuations about the trend. While the boom-bust cycle is always generated by circulation credit, there are at least three ways in which circulation credit can enter the system. How and why the created credit enters the system can lead to significant historical variation in the boom-bust pattern of economic activity implicit in Austrian business cycle theory. While this analysis leads one to expect significant variations in the pattern of fluctuations around the trend (cycle phenomena), all variations predict the associated greater variability in investment (including variations in inventories and consumer durable purchases) relative to total output and consumption that is consistently picked up in economic data series.<sup>2</sup>

#### GROWTH AND CYCLES

Garrison (2001, pp. 54-56), in his basic framework for a capital-based macroeconomics, treats secular growth as an almost automatic, self-sustaining process. However, a better starting point for an Austrian interpretation of the growth/cycle interaction is Garrison’s concept of sustainable versus unsustainable growth.<sup>3</sup> In a capital-based macroeconomics, sustainable growth occurs when investment exceeds depreciation and is financed by available saving (Garrison 2001, pp. 63-67). Growth is sustainable because it is consistent with preferences and resource availability. Regardless of its actual rate, such growth should be of no concern to monetary policymakers, particularly those concerned with accelerating inflation. Sustainable growth in a sound money environment or under a policy regime following a productivity norm should be accompanied by declining prices.<sup>4</sup> In broad conceptual terms, sustainable growth may be pictured as a continuous outward shift of

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<sup>2</sup>These are the stylized facts about business-cycle phenomena that the real business cycle literature attempts to explain. The Austrian theory leads one to expect these results *a priori*. These facts are presented in Romer (2001, pp. 168-72).

<sup>3</sup>Salerno (2001) has provided an insightful criticism of the concept of secular growth as presented in Garrison (2001, pp. 54-56). This criticism, however, leaves intact the more important concepts of sustainable and unsustainable growth as developed by Garrison.

<sup>4</sup>See particularly the recent article “Money, Central Banking and Monetary Policy in the Global Financial Arena” by Jerry Jordan (2001), president of the Federal Reserve Bank of Cleveland. George Selgin made a similar argument in 1997.

the Production Possibility Frontier (PPF) and a loanable funds market in equilibrium. The interest rate in the loanable funds market must be consistent with the broader time market represented by the margin between input prices and expected future output prices.<sup>5</sup> Such growth may be sustainable if the dynamics continue to favor investment in excess of depreciation while also being consistent with preferences and resource availability.<sup>6</sup>

Growth becomes unsustainable when it is not consistent with underlying preferences and resource availability. As such, it must be policy-induced, not preference-induced, growth. Garrison (2001, p. 76) illustrates a nonsustainable growth process by modeling the path of an economy responding to a credit expansion initiated by a central bank. The credit expansion is the familiar Mises-Hayek Austrian business cycle theory. If the economy is at full employment when a credit expansion begins, unsustainable growth occurs as the economy begins to produce, temporarily, outside its production possibility frontier (PPF) and the mix of output shifts towards investment without a corresponding change in time preference. The capital-based macro model explains the interactions between money, credit, and investment that set up conditions for unsustainable growth as illustrated by Garrison's (2001, Figure 4.4, p. 69) "dueling production structures." The introduction of the competing production structures, while partially based on the writings of Hayek and Mises, makes explicit the resource misallocation and shortage that makes the crisis inevitable once the process of unsustainable growth has begun. Consumer preferences, augmented by an interest-rate-induced overconsumption, are pulling resources into a shorter structure of production, while the credit expansion is attempting to attract resources to support a longer production structure. The resource base is ultimately not sufficient to allow completion of both structures simultaneously.<sup>7</sup>

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<sup>5</sup>Kirzner, referring to Mises, writes, "He relies on the reader's understanding . . . that the money rate of interest simply corresponds, in a smoothly running economy at a given level of production, to the excess value of consumer goods at a given date, over the value—the spot prices—of the inputs invested at an earlier date in their production" (2001, p. 141).

<sup>6</sup>Sustainable growth does not imply a fixed long-term rate of growth. Following Salerno (2001, p. 60), such growth should not be interpreted as an economy on automatic pilot. The stylized trend is the result of and part of a historical process that results from a "dynamic coordination of entrepreneurial plans with historical development of time preferences, the size and quality of the labor force, natural resource endowments, and technological progress." Note how many choices must be confronted and decisions made over and over again to keep the economy not only growing, but growing at a relatively stable average rate.

<sup>7</sup>This scenario is an updated version of the benchmark case used by Hayek in *Prices and Production* (1967).

## CYCLE PHENOMENA: VARIATIONS ON A THEME

The boom-bust, as presented by Garrison, is the traditional Mises-Hayek business cycle model put in a growth context. A central bank/fractional reserve banking system creates credit. The supply of loanable funds artificially increases and, as in the sustainable savings driven growth process, the funds finance business expansion as investment increases. This policy-induced growth process cannot be sustainable.

But this is not the only way central bank intervention can create a tendency towards unsustainable growth. To illustrate other unsustainable growth paths, one must first develop other sustainable growth processes. Garrison (2001, pp. 57-84) provides a step-by-step graphical presentation illustrating how a different sustainable growth process might originate. A technology shock can increase the demand for loanable funds. Investment increases, as does the natural rate of interest and saving. Growth associated with the new technological possibilities can be consistent with underlying tastes and resource constraints and hence can be sustainable.

Cochran (2001) uses the Garrison framework and insights from Lewin (1999) to critique real business cycle theory.<sup>8</sup> Cycle-like phenomena however, are explained by random productivity shocks that may be positive (growth enhancing) or negative (growth impeding). The fluctuations are actually optimal or equilibrium adjustments to continuous positive and negative shocks to the economy.

An Austrian capital-based macroeconomics provides a better explanation of the fluctuations emphasized in the real business cycle literature. While positive productivity shocks may be interpreted as exogenous, the money and credit expansion that accompanies the economy's response to the shock leads to a mix of economic growth that is partly sustainable—the growth attributable to the productivity shock, and growth that is unsustainable—additional growth in investment and GDP that is attributable solely to the credit expansion.

Often overlooked in Austrian analysis is the transition of the economy from a higher to a lower growth path (or even a movement to a negative growth path) caused by an increase in consumption due to an increasing time preference. Assuming a smooth transition, this preference-induced change reduces the supply of loanable funds and increases the natural rate of interest. Initially, consumption increases relative to investment, and investment falls relative to GDP. If the new lower level of investment exceeds depreciation, growth may still be sustainable, but at a lower rate. The long term will see lower GDP when compared to the previous path.<sup>9</sup> No growth will occur if

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<sup>8</sup>The analysis draws heavily on Cochran and Glahe (1999, pp. 95-101). See particularly Figures 1-4.

<sup>9</sup>Such a transition may in fact not be smooth. This top-down change requires the abandonment of some currently existing longer processes and a shift of resources to

the new lower level of investment equals depreciation. With consumption of capital, the frontier shifts inward and the economy will experience preference-induced negative growth.

An increase in consumption (decrease in saving) may, however, be accompanied by a credit expansion that keeps the market interest rate equal to the old natural rate. While the credit may be initially given to consumers to finance greater consumption, the important consideration is not who actually gets the injection, but who are the marginal borrowers—that is, who would have been without credit if the market had moved directly to the new natural rate (Machlup 1940). Compared to the old position, the economy bubbles above the frontier with an increase in consumer spending relative to investment spending. But compared to the new equilibrium, the pattern is similar to the credit expansion case—there is likely to be both over-consumption and over-investment. The credit expansion allows a greater source of funds for business investment. Instead of starting a new longer production structure, the funding, in this case, allows business to continue to follow an already completed production structure.

#### IMPLICATIONS FOR THE BUST

In the first two credit expansion cases, a clear crisis develops in the middle of the dueling production structures. Those attempting to lengthen the structure find that demand may not materialize in the necessary later stages as those attempting to shorten the structure (those responding to rising consumer demand) demand a different capital/resource mix from the mix being provided by the developing longer structure. In addition to a slack demand, input prices are likely to increase due to the increased competition from early stages. Malinvestment becomes apparent as some businesses are caught in this squeeze—slack demand for output and higher input prices. Plans cannot be completed as anticipated. Production may be cut back or discontinued altogether. Resources are released for other potential uses. However, those businesses attempting to respond directly to higher consumer demand may find their plans thwarted by a lack of needed complementary resources. Labor released from the declining early stages may not be easily absorbed into the expanding later stages of production, as the necessary complementary capital goods may not be readily available, if, as is likely, some of the capital goods created during the boom are not immediately useful in the expanding industries.

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shorter, less durable, less productive processes. Many of the features of a production structure—capital specificity and resource complementarity—may make it difficult for an economy to make this transition to a lower growth path smoothly.

Because the third credit expansion case involves funding an already completed production structure, the process may continue without a significant crisis for some time. While businesses responding to the increased consumer demands may have a more difficult time getting the right resources to easily provide more consumer goods sooner, those involved in the existing earlier stages will face a more slowly declining demand rather than a failure for expected demand to materialize as occurs in the credit expansion case.

#### CONCLUSION

In a recent study, Keeler (2001) attempts to provide historical/empirical evidence for the Austrian business cycle theory by examining the effect of interest-rate changes on various components of investment spending (classified arbitrarily as early- or late-stage investment) and consumer spending. Our analysis implies that such research is likely to be misleading. The important causal feature is not the change in observed interest rates, or even changes in interest rates relative to the natural rate, but the amount of circulation credit and whether the credit issued is initiatory, as in the benchmark case, or reactive, as in the productivity shock case and the saving decline case.<sup>10</sup>

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<sup>10</sup>We owe a thank you to an anonymous referee for suggesting the initiatory/reactive terminology as an appropriate way to describe the central bank's activity in the three cases.

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