Capital, Monetary Calculation, and the Trade Cycle: The Importance of Sound Money
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Introduction

As pointed out by Professor Kirzner ((2001, 137 and 140), Mises did not start out with the intent to develop a theory of the trade cycle. The trade cycle argument first appeared in the last few pages of *The Theory of Money and Credit* (1912). This early development of Austrian business cycle theory was a direct manifestation of Mises's rejection of the concept of neutral money and "emerged as an almost incidental by-product of his exploration of the theory of banking …" (Kirzner 2001, 140). This development was an incomplete sketch of the theory, particularly for those not well versed in the capital theoretical foundations of the argument. In fact, Hayek's (1999, 105-6 fn.) first exposition of his version of the theory appears in a long footnote in his 1925 paper "Monetary Policy in the United States after the Recovery From the Crisis of 1920." The note was added following a suggestion from Gottfried Haberler. Hayek explained that since "no sufficient exposition of the theory I had used was to be found in Mises's published works and if I was to expect to be understood, I must give a fuller account of the theory underlying my reports of the events described."

The Austrian theory of the business or trade cycle is an intricate blend of monetary theory and capital theory. Mises's (and Hayek's) monetary and capital theory differs in both significant and subtle ways from the mainstream neoclassical approach. Economists working in the Misesean tradition are still plagued by problems of communication with mainstream economists. While the terminology used is similar in

both theories, the definition of keys terms, the understanding of the nature of the economic problem, and the role of prices, especially prices for the means of production, differ considerably.

Hayek did much of the work developing the 'real aspects' of the business cycle theory, but, as has been pointed out by others, Hayek had one foot in the Austrian camp and the other foot in the Walrasian general equilibrium camp.[1] For this reason, Hayek can be an important bridge between mainstream and Austrian economics. Hayek can be read (or perhaps more easily read – reading Hayek is never easy) by a neoclassically trained economist with limited background in Austrian economics. In many cases his insights can be assimilated and at least partially incorporated into neoclassical analysis.

Many of the subtleties within Austrian business cycle theory and calculation arguments depend on Austrian capital theory and the Austrian understanding of the role of time in the economic process . Those relying on Hayek, often interpret Hayekian arguments in terms of neoclassical capital theory and can be misled to believe that Austrian business cycle theory "was by no means so intellectually satisfying as it appeared at first. There were admitted gaps here and there in the first published account which was intended as merely rudimentary, and which when one attempted to fill these gaps they became larger instead of smaller, and new unsuspected gaps appeared …" (Kaldor, [1942] 1980, 148).

[1] See Cochran and Glahe (1999, 88 fn) and Salerno (1999, 45-6). See Salerno (1993) for Weiser's influence on Hayek.

While there is much that is useful in Hayek's numerous attempts to answer his critics, one must go back to his mentor Mises and to what Lewin (1999, 115-133) calls modern Mengerian capital theory to build a more complete and convincing response to Kaldor and similar critics. The response depends on the development of a theory of the market process of a monetary economy. As Lewin (1999, 71) explains, while Neoclassical and Ricardian capital theorist interpret Bohm-Bawerkian within an equilibrium framework and focus on his empirical insights regarding the greater productivity of capital using process, "modern Austrian (market process) theorists, following Mises, Hayek, Lachmann, Kirzner and Rothbard (and also Frank Fetter) focus on some of Bohm-Bawerk's less formal pronouncements and draw some crucial insights from them. In particular these involve the role of time and the nature of profit and interest." This market process theory leads to an understanding that monetary calculation and capital provide the only basis for rational economic planning. Rational economic planning is the foundation for the development and continuation of civilization based on social cooperation and the division of labor.

Cycle Theory and the Development of the Monetary Calculation Argument

Peter Boettke (2001, 44) has argued that, "The centrality of monetary calculation to Mises and Hayek is the *unique* contribution of the Austrian school of economics. Combined with the additional Austrian assumptions and theoretical propositions – irreversibility of time, uncertainty, time structure of production, heterogeneity and multiple specificity of capital goods, non-neutrality of money, and so on – monetary

calculation emerges as not just an aspect of the market process, but the crucial element which allows for the social cooperation under the division of labor" (Boettke, 2001, 44).

The arguments concerning the importance of monetary calculation for rational economic planning came to the forefront during the socialist calculation debate. The rational economic calculation argument was an extension of Mises's earlier work in monetary theory and its extension to the trade cycle. For Mises and Hayek, the trade cycle theory was an attempt to integrate an understanding of a complex capital structure into a monetary exchange economy (Boettke 2001, 34). Austrian business cycle theory is based on intertemporal misallocation of resources. The real intertemporal pricing problem is the relationship between the prices of inputs applied at an earlier date to the prices of outputs available at a later date – the natural rate of interest in an Austrian model – and the market rate of interest in the loan market as influenced by credit creation. Kirzner (2001, 141) highlights this point as a key element in Mises's theory. Mises "relies on the reader's understanding the Böhm-Bawerkian insight 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."

It is in the development of the trade cycle theory that Mises, and later, Hayek recognize that rational economic planning involves not only monetary calculation? "in the absence of money, there are no economic quantities and no economic calculation" (Salerno, 1998 [2002], 2)? but more importantly the appraisal of the value of resources available in earlier periods relative to the expected prices of the relevant output available

at later dates. This is the entrepreneurial function and it cannot be duplicated in the absence of a market process where prices reflect the preferences and judgments of valuing, acting individuals. As pointed out by Salerno (1993, 123), "The real market process is driven by an identifiable, though ever changing, class of individuals whose productive activities are guided by monetary calculation based upon perpetual forecasting of an uncertain and changing future."

The market environment necessary to allow this entrepreneurial planning process to function most efficiently is the connection between the monetary, capital, and interest rate theory that is the foundation of the Austrian business cycle theory and the development and refinement of the arguments advanced by Mises and Hayek in the socialist calculation debate. The key elements in this enabling environment are private ownership of the means of production, monetary calculation, capital, and sound money.

Monetary Calculation, Capital, and Sound Money

Recognizing the role and importance of monetary calculation requires a proper understanding of the economic problem, which is "to employ the available means in such a way that no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed— wasted— for the attainment of a want less urgently felt" (Mises 1998, 208). The very nature of this economic problem is misstated in standard textbook presentations. The problem is not the allocation of *known* scarce resources to satisfy *known* wants of *known* consumers based on a *known* lowest cost method of production for each *known* good and/or service. These '*knowns*' are not given, but are the elements that must and can only be discovered through a market process.

The task taken on by the entrepreneur is to make profits (and avoid losses) by attempting to meet the anticipated future wants of consumers in the most efficient way possible. This task is by its very nature speculative. But once one recognizes "the facts that life is not rigid, that all things are perpetually fluctuating, and that men have no certain knowledge of the future", then it becomes clear that "calculation is as efficient as it can be. No reform could add to its efficiency." The entrepreneur makes use of the mental tool of economic calculation to "adjust his actions as well as possible to his present opinion concerning want-satisfaction in the future. For this purpose acting man needs a method of computation, and computation requires a common denominator to which all items entered are to be referable. The common denominator is money" (All quotes from Mises 1998, 215).

Mises (1998, 230-1) summarizes monetary calculation as a "method of thinking" that: a. is the "guiding star of action under the social system of division of labor" where the entrepreneur "calculates to distinguish remunerative lines of production from the unprofitable," b. is "commercial precalculation of expected costs and expected proceeds" and the ex-post evaluation of past action as reflected in accounting profits and losses, c. can operate only in an institutional setting "with the division of labor and private ownership of the means of production in which goods and services of all orders are bought and sold against a generally used medium of exchange, i.e., money," and d. "reaches its full perfection in capital accounting."

The concept of capital is not a category of all acting, but only a category of acting in a market economy. Capital is an essential element in entrepreneurial planning. It is an

estimate of the market value at a definite date of a particular business plan. As such, it "cannot be separated from the context of monetary calculation" (Mises 1998, 262). A given business or entrepreneurial plan implies a time structure of production for the individual enterprise—a pattern of inputs (capital goods, labor and natural resources or land) applied at earlier dates followed by a pattern of outputs sold at later dates. Groupings of entrepreneurial plans imply a time structure of production for the economy as a whole made up of interconnected/complementary plans and competitive plans. Monetary calculation (forward looking capital valuation) and the continuous feedback from profits and losses prod entrepreneurs to continuously adjust plans toward the provision of goods and services most valued by consumers—toward solving the basic economic problem. Without market (money) prices, and especially market prices for the means of production, there can be no monetary calculation. Without private ownership of the means of production, there can be no markets for resources, no money prices for resources, and thus no monetary calculation and no capital. Without capital the economic problem is neither calculable nor solvable.

The fall of the former socialist countries has alerted most economists to the importance of markets and private property for long-term economic prosperity. There is, however, an additional important element that is critical if monetary calculation is to operate in a way most consistent with consumer sovereignty. That element is sound money. As expressed by Salerno (1998 [2002], 1), "while there is now a basic recognition by economists that rational allocation of resources necessitates institutional reforms that return resources to private hands and restore genuine markets for productive

inputs, there is no such comprehension of the importance of sound money to the processes of economic calculation …"

What is sound money? According to Salerno (1998 [2002], 4) "Sound money, then is simply one which does not lead to systematic falsification of or nullification of economic calculation." Economic calculation requires money prices, but for calculation to most adequately achieve the goal of solving the economic problem the money prices used for calculation must reflect the valuations of producers/consumers that are based on their individually unique preferences, knowledge, and resources. With sound money, money prices reflect valuation and action.

The following types of changes in the purchasing power of money are consistent with sound money: fluctuations in the purchasing power of money caused from the money side that reflect individual preferences regarding the holding of cash balances, valuations that induce individuals to engage in the discovery of and production of the market chosen money commodity, and changes in the purchasing power of money from the goods side. Such changes are part and parcel of the continuing market adjustments to an uncertain future.

For any given market, prices fail to reflect individual valuations whenever there is a government intervention in the market. Entrepreneurs can still make plans based on controlled prices and, given the imposed constraints on behavior, such plans may be profitable and thus appear temporarily successful. But such plans are not consistent with the above goal of solving the economic problem. While not systematic (yet), economic calculation has been falsified. Extension of the price controls to most or all markets, as in

the post "war communism" socialist economies, leads to explicit "systematic falsification" and/or nullification of economic calculation.[2] This is the type of calculation problem that eventually led to the decline and fall of the former Soviet bloc economies.

Sound money is then a money whose purchasing power and quantity is determined by consumers'/producers' valuations as determined by their preferences, knowledge, and resources. A market-determined commodity money absent government intervention. As expressed by Mises (1998, 225), "Economic calculation does not require monetary stability in the sense in which that term is used by champions of the stabilization movement. The fact that rigidity in the monetary unit's purchasing power is unthinkable and unrealizable does not impair the methods of economic calculation. What economic calculation requires is a monetary system whose functioning is not sabotaged by government interference. The endeavors to expand the quantity of money in circulation in order to increase the government's capacity to spend or in order to bring about a temporary lowering of the rate of interest disintegrate all currency matters and derange economic calculation" Because money has no market of its own, money interventions permeate all markets. Monetary interventions and universal price controls create falsification problems that are immediately systematic, but the effects of monetary interventions are much more subtle.

Austrian economists are united on the goals of sound money? avoiding "calculational chaos"[3] and providing an "instrument for the protection of civil liberties

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[2] See Boettke (2001) Chapters 6 and 7 and Osterfeld (1992, 6-9).

against despotic inroads on the part of governments" (Mises 1971, 414). There is also general agreement that a return to sound money "involves abolishing central banking and paper fiat money and restoring a commodity money chosen by and totally subject to the market" (Salerno 1998 [2002], 4). There is, however, controversy over the means. Does sound money require 100% reserve banking or does it allow banking freedom?[4] Does one follow Mises (1998, 440):

> Free banking is the only method for the prevention of the dangers inherent in credit expansion. It would, it is true, not hinder a slow credit expansion, kept within very narrow limits, on the part of cautious banks which provide the public with all the information required about their financial status. But under free banking it would have been impossible for credit expansion with all its inevitable consequences to have developed into a regular—one is tempted to say normal—feature of the economic system. Only free banking would have rendered the market economy secure against crises and depression.

and

> ..... There is no reason whatever to abandon the principle of free enterprise in the field of banking.

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[3] See Salerno (1998 [2002], p.1) and Rothbard (1970, 825-26).

[4] I deliberately use banking freedom here rather than the more familiar free banking to differentiate those who see banking freedom as consistent with sound money from those who advocate free banking as a means to offset the influence of changes in the demand for money on monetary equilibrium and the purchasing power of money. Banking freedom implies banks operate in an environment where the banks are subject to the general rules of commercial and civil law and are not the recipients of special privileges and protections granted by the state. As expressed by Mises (1998 440), "What is needed to prevent any further credit expansion is to place the banking business under the general rules of commercial and civil laws compelling every individual and firm to fulfill all obligations in full compliance with the terms of the contract." I owe this insight, the distinction of the agreement on ends and not means, and the inclusion of this discussion in the paper to some very helpful comments and suggestion made by Larry Sechrest.

Or does one follow Salerno (1998 [2002]), Herbener (2002), and Reisman, (2000) who argue for 100% reserves on the basis of reform proposals made by Mises (1971, 448-457, and 1978, 17-21 and 44-47)[5] that argued for 100% backing of any newly issued notes or checkable deposits. For reform of a monetary system on the verge of collapse or as a proposal for how we move from our current system toward a sound money system such a step may be essential. After reform though, it is also essential that "the question of banking freedom must then be discussed again and again, on basic principles" (Mises 1978, 45).

Conclusions

Government control/intervention into the money system creates distortions in the money pricing system. These interventions lead to money prices that are not based on individual valuations and knowledge. Calculation errors will be in excess of entrepreneurial errors that are normal when planning for future provision of consumer wants in the face of unavoidable uncertainty. Planning to meet consumers' most urgent demands is hindered, and in the case of a crack up boom where no substitute money is readily available, so shortened in time horizon as to be effectively eliminated.

The arguments supporting a sound money policy were originally extensions of the Austrian business cycle theory. Credit creation systematically undermines capital-based entrepreneurial plans by increasing the difficulty associated "with the relationships between resources at one point of time and outputs of subsequent points of time" (Kirzner 1996, 43). The crisis or bust following a boom is just a calculation meltdown cut short.

[5] See Ebeling ed. (2002) for other similar proposals by Mises.

The intervention is stopped or slowed and the falsified calculations are revealed. The corrective action of profit/loss feedback begins again to assert itself. Economic activity 'recovers', as the market again begins a process to align business plans with consumers/producers valuations and available resources. If the intervention is not slowed or stopped, the inflation continues until a crack up boom sets in with the associated complete calculation breakdown.

Sound money provides a financial environment where economic crisis associated with mis-directions of resources and malinvestments can be avoided and where monetary calculation can be as efficient as possible. Economists who accept the Austrian argument on the impossibility of rational economic calculation in a socialist economy and recognize the calculation problems inherent in highly interventionist economies, but reject Austrian business cycle theory, should re-examine their position. The key elements for understanding the market process based on entrepreneurial planning, monetary calculation, and capital are the key elements underlying both the calculation argument and Austrian business cycle theory. Without sound money, calculation is less efficient and the economy will be prone to business cycles. With sound money policy, no boom-bust cycle will emerge and monetary calculation and planning will be as efficient as possible in an uncertain world.

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