A Brief Note on Bank Circulation Credit and Time Preference

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The Austrian Business Cycle Theory (ABCT) points out the impact of an increase in bank circulation credit (credit that is not backed by real savings) on economic activity; that is, how it affects the intertemporal choices of market agents in terms of parceling out income on consumption, savings, and investment, and what effect it has on prices, production, and employment (Mises, 1998 [1949], pp. 535–583; Hayek, 1933 [1929]; Rothbard, 2006 [1973], pp. 213–240; Garrison, 2001, pp. 57–83; Huerta de Soto, 2006, pp. 347–384). ABCT holds that an increase in bank circulation credit lowers the market-clearing interest rate *below* society's *true* time preference rate. This causes a decline in savings, a rise in consumption and, in addition, encourages new investment. Taken together, this leads to an economic "boom" which, however, must come to an end (turn into "bust").

Important questions in this context are: *How does the injection of additional credit and fiat money, created through bank credit expansion, affect*

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the rate of societal time preference? and *How does the societal time preference rate relate to the market interest rate in the course of a boom-and-bust-cycle?* This article argues that the expansion of bank circulation credit—which is a key feature of a fiat money system—*artificially raises* societal time preference, something that all too often goes by the board or is ignored in illustrations of the ABCT. This detail deserves attention as it helps to understand not only the economic but also the wider social-political consequences of bank circulation credit expansion—namely the distortive "revaluation of all values" it entails and which affect all fields of human action.

Time Preference and the Originary Interest Rate

The irrefutably true proposition that "humans act" means that acting man substitutes a more satisfactory state of affairs by a less satisfactory state of affairs (Mises, 1998 [1949], part One, and pp. 480–487). It implies that human action takes *time* (Rothbard, 2009 [1962], pp. 13–17). Time is a *requisite* for achieving *ends*, and there is no human action possible that wouldn't take time. If and when human action does not require time, an actor's ends would be achieved instantaneously. This, however, would mean that human action is no longer possible—which is, (praxeo-)logically speaking, impossible. As a means, time is *scarce*. This is why man prefers his ends to be achieved in the shortest possible time—which is expressive of the universal fact of *time preference*.[1]

The *originary interest rate* is the manifestation of time preference and as such a category of inherent in any human valuation (Mises, 1998 [1949], p. 523): "Originary interest is the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remoter periods of the future." The originary interest rate (or the pure time preference rate) is the price discount future want satisfactions suffer—from the viewpoint of the individual human actor—vis-à-vis present satisfactions.[2] Time preference and the originary interest rate are always and everywhere positive; one cannot, for (praxeo-)

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[1] The term time preference was introduced by Frank A. Fetter in his 1915 Economic Principles (Fetter, 1915, p. 236). Rothbard (1977, p. 4) credits Fetter to be the first economist to explain the interest rate phenomenon solely by time preference.

[2] For a detailed discussion of the pure time preference theory and its critique, see Herbener (2011).

logical reason, think that the originary interest rate could ever fall to zero, let alone become negative (Mises, 1998, p. 524; Polleit, 2020, p. 167; Polleit, 2015).

This can also be exemplified by taking recourse to the *Modus* (or: *Tollendo*) *Tollens* (Cohen & Nagel, 2002, pp. 101–105): An accepted conditional statement says "if *p* then *q*." If, however, we observe "not-*q*," then we infer the negation of the antecedent, that is "not-*p*." Assume *p* represents the statement "Humans act" and *q* the statement "The originary interest rate is always and everywhere positive." If we say "*non-q*" (meaning "The originary interest rate is *not* positive"), then *non-p* must hold (meaning "Humans cannot act"). This, however, is (praxeo-)logically false.

If people prefer to consume a great deal and save little of their income, their time preference and thus their originary interest rates are *high*; and if they prefer to save a great deal of their income and consume little, their time preference and thus their originary interest rates are *low* (Hoppe, 2006a, pp. 1–3; Rothbard, 2006, pp. 233–235). In other words, a high ratio of consumption to savings (out of income) is expressive of high time preference and a high originary interest rate; and a small ratio of consumption to savings signals a low time preference and thus low originary interest rate. In what follows, the impact of an increase in so-called *bank circulation credit* on the societal time preference rate will be analyzed.

Bank Circulation Credit Expansion and Time Preference

Bank *circulation credit* denotes bank credit that is not backed by real savings (Mises, 1998 [1949], p. 430; 1953, pp. 268–69 and pp. 271–72). If and when bank circulation credit is expanded, the outstanding quantity of money (*fiduciary media*) is increased. Bank *commodity credit*, in contrast, denotes a form of credit that is 100 percent backed by real savings (money proper); its expansion doesn't increase the outstanding quantity of money in the economy but merely changes its composition.

The societal time preference and—as its manifestation—the societal originary interest rate are the results of the aggregation of all individual supply schedules for savings and all individual demand schedules for investment, respectively, in the *time market*, where present goods are exchanged against future goods (Rothbard, 2009 [1962], pp. 375–389).

To illustrate this, let us assume that people have a *given income.* They can use their income for consumption *C* and/or savings *S*, and savings will be used for investment *I.* *S* is positively and *I* negatively related to the interest rate *i* in Fig. 1.

The market-clearing interest rate $i*$ is determined by the interplay of *S* and *I*. In equilibrium, savings amount to $S*$ and investment to $I*$ (right-hand side of the graph), while the corresponding level of consumption is $C*$ (with the axis in the left-hand side of the graph running from right to left). The market-clearing interest rate $i*$ is expressive of the societal time preference rate. It ensures that there are sufficient savings available to realize investments. In other words: $i*$ puts the economy firmly on the road toward higher material prosperity.

As a first step, let us now assume a *decline* in peoples' time preference (people become less present-oriented and more future-oriented). In Fig. 1, *S* moves to the right, to *S'*: For any given level of the interest rate, savings are now higher, so that savings and investment increase to S_1 and I_1, respectively, while the consumption schedule *C* moves to the right, to *C'*; the amount of consumption declines to C_1. The new market-clearing interest rate—which is in line with the *true* societal time preference rate—is i_1.

As a second step we assume that there is an increase in bank circulation credit, as illustrated in Fig. 2. The increase in bank credit moves *S* to the right, to *S'* (which is $S+\Delta M$). As *I* is unchanged, the market-clearing
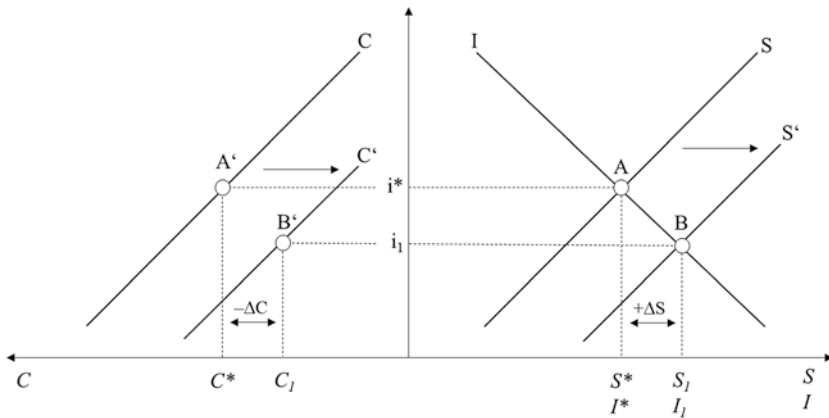

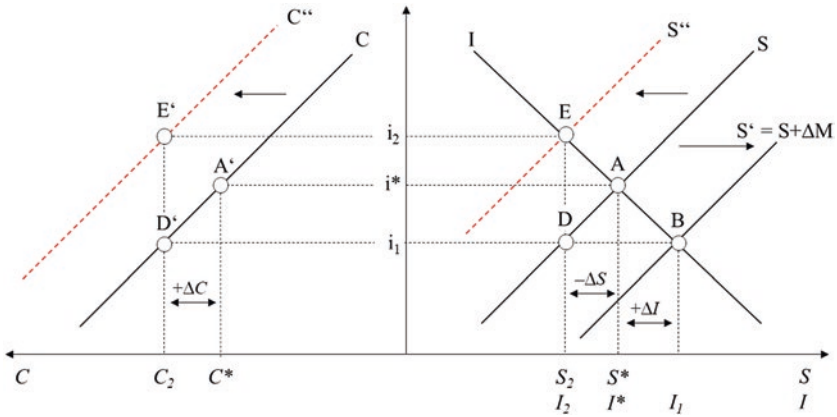**Fig. 1** Decline in time preference

Fig. 2 Increase in bank circulation credit and the societal time preference rate

interest rate falls to i_1. Accordingly, savings decline from S^* to S_2, while consumption rises from C^* to C_2. In addition, investment increases from I^* to I_1. This sets into motion the notorious boom-and-bust-cycle. *What has happened to peoples' time preference rate?* The answer is: *It has effectively gone up* (Rothbard, 2006 [1973], pp. 233–234).

The graphical explanation is as follows (Garrison, 2001, pp. 67–69): The drop in the market-clearing interest rate from i^* to i_1 lowers savings from S^* to S_2. For a given level of income, this implies a rise in consumption, which increases from C^* to C_2. However, C_2/S_2 implies a higher societal time preference and originary interest rate than C^*/S^*, for C_2/S_2 > C^*/S^*. Yet, C_2/S_2 is accompanied by i_1, which is lower than i^* at C^*/S^*. How can that be? To provide an intelligible answer to this question, an additional analytical step is required.

The decline in savings from S^* to S_2, caused by an increase in bank circulation credit, implies that the savings schedule S moves to the left, to $S"$, and this is accompanied by the consumption schedule C shifting to the left, to $C"$. The resulting (artificially increased) societal time preference rate is therefore i_2 ($>i^*$ >i_1). In other words, the issuance of circulation credit makes people behave *as if* their time preference has actually increased (raising consumption and lowering savings), but in truth it has not!

In most illustrations of the ABCT it is shown that under bank circulation credit expansion, the market interest rate falls below the original

societal time preference rate, namely to i_1 from i^*. However, this does not give the full picture. It overlooks that the issuance of bank circulation credit *artificially raises* the societal time preference rate to i_2. Bank circulation credit expansion does not only drive a wedge between the *given* societal time preference rate and the market interest rate, it actually also pushes up peoples' societal time preference rate.

Market agents' dispositions of parceling out their income in terms of savings, consumption, and investment correspond to the market-clearing interest rate, that is i_1 in Fig. 2. i_2 can be interpreted as the *acted-upon* social time preference rate: It is the *unobservable* social time preference rate that corresponds to the increase in *actual* consumption that comes at the expense of *actual* savings. It stands for the time preference rate that *actually* governs peoples' actions if and when the market interest rate has been artificially lowered as a result of the issuance of fiat money.

As a final note, the exposition above can actually reconcile the ABCT as interpreted by Ludwig von Mises and Friedrich August Hayek (Garrison, 2004). In his interpretation of the ABCT, Mises stressed "overconsumption and malinvestment" as a result of the artificial lowering of the interest rate (Mises, 1998 [1949], p. 560, 562). The term "forced savings," as used widely by Hayek in this context, can simply be understood as *investment in excess of savings* (Hayek, 1975 [1939], p. 197). From this point of view, "overconsumption and forced saving´ are cognates," as Garrison (2004) rightly points out.

Revaluation of All Values

The issuance of bank circulation credit leads to a far-reaching "revaluation of all values," to borrow a term from the German philosopher Friedrich W. Nietzsche (1844–1900).[3] It makes people value want satisfaction in the present even more highly than want satisfaction in the future. Such an *artificial* increase in societal time preference does not only affect the economic and financial sphere (as shown earlier) but all forms of human action.

Human action is inextricably linked to the phenomenon of time preference and its manifestation, the originary interest rate. It should be noted here that time preference and the originary interest rate are not confined to a monetary economy. They also exist in a non-monetary, or barter

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[3] "Revalution of all values" (in German: "Umwertung aller Werte") is a catch-phrase and a central term in Nietzsche's philosophy and moral critique.

economy; and they determine the valuation of monetary as well as non-monetary goods (or want satisfactions, for that matter). That said, the truth is that changes in time preference do affect peoples' valuation of all walks of life (Howden & Kampe, 2016).[4]

As was shown earlier, an artificial lowering of the market interest rates—brought about through circulation credit expansion—translates into an increase in peoples' time preference, manifested as a rise of their originary interest rates. This, in turn, pushes further up the (subjective) value individual actors ascribe to present monetary and non-monetary goods relative to future monetary and non-monetary goods. From this we can deduce a number of general conclusions regarding how fiat money affects the value people see in various modes of action.

For instance, in a fiat money regime it will be less attractive for the individual to spend hours learning (compared with the situation in a commodity money system), as it means reducing present consumption at the expense of future consumption. As a result, the quality of general education can be expected to decline. Also, starting a family becomes more self-sacrificing and burdensome—as parents must forego highly valued present want satisfaction, and so the family as an institution is weakened in society.

What is more, for people whose time preference has increased divorce increasingly seems to be an appealing way out of current relationship problems—which otherwise could only be solved by time-consuming efforts. Furthermore, having good manners—saying good morning, helping a stranger across the street, getting out of somebody's way, and so on—is considered less rewarding in a "high time preference society," as it means restricting present want satisfaction with any potential rewards occurring at a future point in time (and is therefore less valued).

The artificially lowering of the market interest rate in a fiat money system has also a bearing on how people economize scarce natural resources. It does not only cause a boom which drives up the demand for scare natural resources, it also leads to wasteful usage of them—for the boom leads to malinvestment. In addition, the owners of scarce non-permanent resources (say, gravel pits or oil fields) wish to maximize the capital value of their property (Rothbard, 2009 [1962], pp. 488). A rise in property

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[4] The authors provide, inter alia, an in-depth discussion of the factors affecting time preference (i.e., personal factors, biological factors, environmental (or external) factors, institutional factors, economic institutions, juridical institutions, and moral institutions (pp. 386–391)); they also discuss the effects of changes in time preference (pp. 391–393).

owners' time preference therefore means that they will increasingly exploit their resources in the present at the expense of resources available in the future. To put it differently: The artificial increase in peoples' time preference (as a direct result of the fiat money system) speeds up the depletion of scarce resources, posing an additional burden for the environment.

Finally, let us have a brief thought about *aggression* and *war*. Any state seeks to increase its power, to expand its territory—by military means or, as a common effort pursed by the states themselves, by reducing the number of states (Hoppe, 2006b, p. 107). Having the option to create new money through bank circulation credit expansion, it becomes relatively appealing for the state to become aggressive and go to war (Mises, 1919, esp. pp. 123–134).

This becomes obvious if one compares the economic consequences of credit financing in a bank circulation credit regime and a commodity credit regime. In a commodity credit regime, the state's demand for loans would (other things being equal) drive up the market interest rate. This, in turn, does not only increase the state's costs of borrowing, but it also hurts private investment and employment and lowers income. Consumers and producers do not enjoy this much!

Things are different in a bank circulation credit regime. As the state's demand for credit goes up, so does the supply of credit—and the market interest rate remains unchanged.[5] The additional demand from the state, accompanied by an increase in the quantity of money and an unchanged market interest rate, sets into motion a *boom*. Consumers as well as entrepreneurs enjoy this, and their opposition to making war will be greatly reduced!

A Case Against Fiat Money

The purpose of revisiting ABCT was to make explicit that bank credit expansion—which is at the heart of today's fiat money regime—directly affects the societal time preference rate. Bank circulation credit expansion not only lowers the market interest rate vis-à-vis peoples' original time preference rate, setting into motion a boom must end in a bust, but it also raises peoples' time preference.

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[5] This, of course, assumes that neither inflation nor risk premia, which are typically components of the market interest rate, go up. In any case, in a fiat money system the central bank can, if deemed necessary, fix the market interest rate at a politically desired level.

In other words, if and when manipulating the market interest rate, central banks arrogate to themselves the power to influence peoples' valuations of present good versus future goods. It is in that sense that central banks' interest rate policies amount to basically a "revaluation of all values": Through bank credit expansion people are made to be more present-oriented and less future-oriented.

A fiat money induced boom leads to impoverishment in the sense that output does no longer correspond to satisfying consumer demand in the best possible way or that it causes a waste of scarce resources—compared with a state of affairs in which bank circulation credit expansion had not taken place (Mises, 1998 [1949], p. 562). Both outcomes are the inexorable result of an artificially increased societal time preference caused by monetary policy.

A (praxeo-)logical analysis thus reveals that a fiat money regime hampers rather than advances economic (and cultural) progress: For it lowers peoples' savings to the benefit of higher consumption, thereby hampering capital accumulation, productivity gains and higher real incomes in the future: The economy is actually prevented from living up to its full potential; people would be better off without bank circulation credit expansion.

As the analysis in this article has pointed out the problem is not just an artificially lowered market interest rate as a result of bank circulation credit expansion. The actual problem is that bank circulation credit expansion raises peoples' time preference and, at the same time, lowers market interest rates. What happens is trouble—and this insight can be interpreted as yet another argument, a case against fiat money.

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