MATURITY MISMATCHING, ETHICS AND ECONOMICS: REJOINDER TO BAGUS, HOWDEN AND HUERTA DE SOTO

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Abstract: Is maturity mismatching, borrowing short and lending long, merely risky, or would it be banned in the free society as a rights violation? The present paper is the latest episode in a debate series on this issue. The present authors take the position it is unethical and should be against the law. Our debating partners subscribe to the opposite point of view.

Keywords: Banking, lending, ethics, law.

JEL Classification: E2, E59, P16.

Resumen: ¿Es el descalce de plazos, es decir, endeudarse a corto y prestar a largo plazo, simplemente arriesgado, o estaría prohibido en una sociedad libre como una violación de derechos? El presente artículo es el último episodio de una serie de debates sobre este tema. Los presentes autores toman la posición de que no es ético y debería estar en contra de la ley. Nuestros compañeros en el debate mantienen el punto de vista contrario.

Palabras clave: Banca, préstamos, ética, Derecho.

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I
INTRODUCTION

The present essay is the seventh[1] in a debate series that has been occurring between Barnett and Block (BB)[2] on the one side and Bagus and Howden (BH) on the other.[3] In BB (2009A, 2009B), the first two in this collation, these authors claimed the maturity

[1] Barnett and Block, 2009A, 2009B; Bagus and Howden, 2009; Barnett and Block, 2011A; Bagus and Howden, 2012; Block and Barnett, 2015; Bagus, Howden and Huerta de Soto Ballester, 2016

[2] We use numerous abbreviations in this paper. They are as follows:
ABC = Austrian business cycle
ABCT = Austrian business cycle theory
BB = Barnett and Block
BH = Bagus and Howden
BHHdS = Bagus, Howden and Huerta de Soto
BLLS = borrow long, lend short
BSLL = borrow short, lend long
FRB = fractional reserve banking
MM = maturity mismatching
SOP = structures of production
The way BSLL has been used in the past, in this series, can be confusing. That is, does BSLL always include FRB? It should be noted, first, that this debate deals only with BSLL. Second, that BSLL includes, but is not limited to, FRB. Third, that all five parties agree that FRB can cause ABC, and that FRB is not a feature of a free market. Thus, when FRB causes the ABC, this does not constitute market failure. Fourth, that this debate solely concerns non-FRB BSLL. Fifth, that BB and BH (and now, presumably, Huerta de Soto joins BH in this) maintain that this form of BSLL may cause ABC. Sixth, that BH (and now, presumably, Huerta de Soto joins BH in this) maintain that this form of BSLL is ethically acceptable since it is a part of the free market, and does not constitute market failure. Seventh, that BB maintain that this form of BSLL is ethically objectionable and not a part of the free market, and ipso facto does not constitute a market failure. Eighth, BB (and now, presumably, Huerta de Soto joins BH in this) maintain that, if however, that form of BSLL is morally legitimate and is part of the free market, then because it can cause ABC, it *is* a form of market failure. That is, if, arguendo, BHHdS accept this type of BSLL as a part of the free market, then it constitutes a market failure as it can cause an ABC. A key insight is to distinguish BSLL with FRB from BSLL without FRB.

[3] In the sixth iteration, the one previous to the present contribution, Jesús Huerta de Soto Ballester has joined Bagus and Howden. We welcome his arrival on the scene, as he is one of the foremost Austrian economists and libertarian theoreticians on the entire planet. We now refer to them as BHHdS, for short. The present authors thank BHHdS for helpful suggestions regarding an earlier draft of the present paper As per usual, all errors and infelicities are the sole responsibility of the present authors, BB.

mismatching (MM) was incompatible with the free market. In BH (2009), the third entry, they defended the view that was MM was risky, but, nevertheless, compatible with the free enterprise system and that borrowing short and lending long (BSLL) creates the Austrian Business Cycle (ABC). BB (2011A), the fourth, was an attempt to defend Barnett and Block (2009) against the very interesting and important, although we believe, erroneous, criticisms on ethical grounds of Bagus and Howden (2009). BH (2012), the fifth, made the point that "… the economic and legal differences between genuine deposit and loan contracts are clear. This implies different legal obligations for these contracts, a necessary step in assessing the ethics of both fractional reserve banking and maturity mismatching. While the former is economically, legally, and perhaps most importantly ethically problematic, there are no such troubles with the latter." The sixth in this series, BB (2015) charged that MM constituted a market failure, something no right-thinking Austrian economist, such as BH, could accept. The present paper is the seventh in this series.

BB (2015) struck a new chord with its charge that BSLL constituted market failure. Market failure is a concept that all four authors, BB as well as BH, reject. The most recent contribution to this debate, Bagus, Howden and Huerta de Soto (BHHdS, 2016, the sixth in this series) took the position (1) that BSLL is legally and morally legitimate, (2) that BSLL does not cause the ABC at least not in the fully free economy, and (3) that their defense of BSLL does not support, is not predicated upon, is not compatible with, the concept of market failure, which concept, again, all four, now five of us, regard as a fallacy. The present article rejects all three assertions of theirs.

Before we begin our substantive critique of BHHdS (2016), we offer a few words about concepts and language. Traditional Austrian Business Cycle Theory (ABCT) sees as the source of the business cycle an artificial lowering of the pattern of interest rates, below the levels that would otherwise have obtained.[4] These, in

[4] This artificial lowering of rates should be understood to refer to risk-adjusted rates; i.e., the real culprit is an artificial increase in credit which sometimes takes the form of a lessening of credit standards.

turn, would have been based on the (risk adjusted) marginal time preferences of all economic actors in society. As a result, unsustainable investments are made in the higher, or earlier (Garrison, 2001) stages of production process[5,6]; this is the boom phase. But these expenditures prove untenable in the long run; this is the economic bust.

In our view, MM = BSLL + BLLS.[7] BHHdS, we think, get it wrong when they say (p. 1) "… maturity mismatching (also known as borrowing short and lending long)." That is, in our view, MM and BSLL are by no means equivalent. There are two, not one, forms of MM: BSLL, yes; but *also* BLLS. Let us now consider some examples of each. Here is BSLL: A deposits $10 in bank B for 1 year. This is a time deposit. B turns around and lends this $10 to C, for a period of 10 years. B borrowed short, but lent long. Here is BLLS: A deposits $10 in bank B for 10 years. This is a time deposit. B turns around and lends this $10 to C, for a period of 1 year. Here, B borrowed long, but lent short. As we see matters, fractional reserve banking (FRB) is merely a special case of BSLL. Here, then, is an example of FRB[8]: A deposits $10 in bank B on demand. This is not a time deposit, but rather a demand deposit. The length of "time" for this demand deposit is 0 years, 0 months, 0 weeks, 0 days, 0 minutes and 0 seconds.[9] B turns around and lends this $10 to C, for a period

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[5] Long term investments such as are made in mining or heavy manufacture, that are far away, in terms of time and production from the ultimate consumer.

[6] The unsustainable investments may also involve production of goods that are used in the later stages of production, say, the retail level, but that are quite durable and are used over a long period; e.g., a shopping mall; a cash register, etc.

[7] Note that the acronyms are always in terms of the perspective of the financial intermediary. If more than one intermediary is involved, then the appropriate terminology in such mediated credit transactions can be very complex, and the simple acronyms BSLL and BLLS may well become confusing.

[8] For a critique of this institution on economic (ABC) and legal (libertarian) grounds, see Bagus, 2003; Bagus, Howden and Block, 2013; Barnett and Block, 2005A 2005B, 2008, 2009; Block, 2008; Block and Caplan, 2008; Block and Garschina, 1996; Block and Humphries, 2008; Block and Posner, 2008; Davidson, 2008; Davidson and Block, 2011; Hoppe, 1994; Hoppe, Hulsmann and Block, 1998; Howden, 2013; Huerta de Soto, 1995, 1998, 2001, 2006, 2010; 2008; Hulsmann, 2008; Murphy, 2010; North, 2009; Rothbard, 1975; 1990, 1991, 1993; Salerno, 2010A, 2010B, 2011.

[9] We abstract from the fact that the bank is only open to disburse funds from Monday to Friday, 9 a.m. to 3 p.m. The emphasis on zero time in the text involves a bit

of 10 years. With this lexicographical underbrush cleared away, we are now ready to launch in to our response to BHHdS (2016.)

We have no doubt that we now speak for all parties to this debate, ourselves, BB as well as our intellectual opponents, BHHdS, when we say the following. This has been a very fertile debate; thanks to it, we have made some not insignificant strides in our understanding of FRB, BSLL, BLLS, MM, ABCT, so called "market failure" and the role and functioning of central banking in our economy. This has also been an ideal debate in terms of mutual support[10] of the contending parties not only for their own positions (which pretty much goes without saying) but also for the views of the other party. That is, we have all strived mightily to interpret the contributions of the other side in the most positive manner possible. Nor has there been even the slightest bit of rancor in this debate from either side. Rather, both contributing parties, in the finest traditions of debate which aims at light, not heat, have attempted to, and succeeded in, focusing on the substance of the issues under dispute, with no ego involved; or, at least, the minimum capable of human beings. Both sides, too, thank the journals which have carried this exchange; it focuses on Austrian economics and libertarianism, not the main focus of any of them. They are thus more deserving of praise than would otherwise be the case.

BSLL (FRB) on the unhampered market is a null-set. It is a veritable logical contradiction. It is analogous to rent control in the free economy, minimum wage in the free enterprise system, protectionist tariffs under laissez faire capitalism. The insistence of BHHdS that they merely claim that BSLL does not create the ABC *in the unhampered market* lacks much of the intellectual power they think is invested in this claim. *Of course* BSLL (or FRB) cannot create the ABC *in the free marketplace*. This is not because of any lack of inefficiency in them. It is because BSLL (and FRB) cannot exist

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of a poetic license. However, routing numbers work 24/7. Even ATMs occasionally run out of funds. And, sometimes computers experience glitches or electrical networks experiences outages. And, then, there are periods of natural or man-made (e.g., bank robberies) disasters.

[10] Block, Westley and Padilla (2008) report on many debates in which the very opposite is the case.

under pure unhampered capitalism as they are incompatible with this system. If BSLL (and FRB) do occur, then to that precise extent, the market is *not* free.

In section II we assess their defense against our claim that they are guilty of subscribing to the noxious and fallacious doctrine of market failure. Section III is given over to other disputes. We conclude in section IV.

II
MARKET FAILURE

In their introduction BHHdS correctly summarize the position of BB (2015, p. 1) in the form of a syllogism:

"1. BH stand in the tradition of the Austrian school of economics and do not subscribe to the neoclassical concept of 'market failure.'

"2. BH maintain also that maturity mismatching is ethical and permissible on a free market.

"3. BH argue that maturity mismatching on a free market leads to a business cycle, i.e., constitutes a market failure.

"Consequently, BH should be troubled as they find a practice ethical that causes market failure or, at least, creates severe distortions in the economy."

In the foregoing MM refers only to BSLL.[11]

However, BHHdS reject this third claim of BB (2015). As against it, they maintain: "that maturity mismatching does not necessarily lead to a business cycle in an unhampered economy." We take this statement as a concession to our position. And in two ways. First, if MM does not *necessarily* lead to the ABC, that means it *sometimes* does, or *sometimes* can. That is entirely sufficient for our viewpoint, since we never maintained that MM *always* does so.[12] Second, we

[11] Although BLLS, a form of market failure, results in misallocations of resources that, as with BSLL, the extent of damage done to peoples' well-being depends upon the magnitude, thereof.

[12] For example, MM (at least BSLL, if not BLLS) must be of sufficient *quantity* for an ABC to ensue. If all we are talking about is $5 in the economy the size of that in the U.S., there will of course be no ABC as a result of the BSLL.

will show that this is an (unacknowledged) alteration of their initial position, which allowed that it could. It would appear that BHHdS are "growing"[13] if not in office, then in this debate.[14]

We must perforce agree with BHHdS when they "…argued that a 100 percent reserve system can still bring about artificial booms by maturity mismatching if there is a central bank or government support and guarantees for the banking system." However, that could not be a *market* failure, for *government* is involved. It is instead a *government* failure. Similarly, there can be no market failure "…if other government interventions into the financial system remain intact." Again, this would be a *government* not a *market* failure. But what are we to say of this "smoking gun" when BH admit that BSLL, in and of itself, without any government support whatsoever, leads to the ABC?[15] One possible escape for them would be to claim that MM is a *per se* statist institution, since it would be banned under the libertarian legal code (Rothbard, 1998). And, the same applies to FRB something that both sides of this discussion do agree upon. But this will avail them little, at least not in this controversy, for this is precisely *our* position.

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[13] The members of the left-progressive movement are fond of saying of conservative politicians and officials who's stances move in the direction of the former that the latter are "growing" in office.

[14] Perhaps this is due to the insertion of the second H into the lineup of BH?

[15] For example, states Bagus (2010, footnotes omitted): "Economists in the tradition of the Austrian school have shown that one type of maturity mismatching can cause maladjustments and business cycles. When banks expand credit, by granting loans and creating demand deposits, they generate immediately withdrawable liabilities to finance longer-term loans. The newly created demand deposits do not represent a reduction of consumption, i.e., that characterized by real savings. As a consequence, interest rates are artificially reduced under the level they would have been in a free market reflecting real savings and time preference rates [sic]. Thus, entrepreneurs are prone to engage in more and longer projects than could be financed with the available supply of real savings. Before all projects that are financed by the credit expansion are finished, a bust occurs." However, to be fair to them, they do qualify this statement thus: "In this article it is argued that a 100 percent reserve system can still bring about artificial booms by maturity mismatching *if there is a central bank or government support and guarantees for the banking system* (emphasis added by present authors)." But then they undermine this qualification as follows: "*Even if* we accept the case for a 100 percent reserve requirement, we see that the maturity mismatching of liabilities and assets (borrowing short and lending long) is itself perilous—and in the same sense that fractional reserves are perilous."

Let us consider this statement of Bagus (2010):

> "In this article it is argued that a 100 percent reserve system can still bring about artificial booms by maturity mismatching if there is a central bank or government support and guarantees for the banking system. *Even if* we accept the case for a 100 percent reserve requirement, we see that the maturity mismatching of liabilities and assets (borrowing short and lending long) is itself perilous — and in the same sense that fractional reserves are perilous."

There are difficulties here. In a 100% reserve system there is no MM of any type, BSLL or BLLS. In a 100% reserve financial system there is no borrowing of any kind or variety; rather we are in a bailment situation. Consider A, who deposits money in a 100% reserve account at B's bank. B may not do anything but store these funds; he is legally precluded from lending them whether for the short or long run. Therefore, Bagus' statement is an oxymoron in that MM is inconsistent with 100% reserves. With 100% reserves there can be no MM. His sentence beginning "*Even if…*" is illogical because if you except 100% reserves you not only de facto but also de jure prohibit MM.

BH are on record asserting that FRB generates the ABC. But FRB is merely a special case of BSLL, which is itself one type of MM. To say that FRB leads to ABC is a market failure is problematic in that FRB is *incompatible* with free enterprise; therefore, it logically *cannot* be any such thing. FRB would not exist under laissez faire capitalism. But the same applies to BSLL. It, also, would not be legal in the free society; therefore, it cannot be considered as part of a free market. Thus, it also cannot possibly be part and parcel of any market failure.

Let us not conflate matters by bringing in extraneousness issues such as central banking or "government support and guarantees for the banking system," or the Fed. Let us stick to BSLL, which in the view of BHHdS is compatible with the marketplace. Yet, according to them, it, also may (but not necessarily so) bring about the ABC. That is sufficient to prove that these authors are supporting a theory incompatible with the Austrian aversion to the fallacious doctrine of market failure. This would appear to be the "smoking

gun" of the argument; BHHdS themselves admit that their opposition to BSLL involves them in the market failure fallacy. As we have seen, FRB is merely a special case of BSLL. Can there be any FRB in the unhampered market? All of us, on both sides of this debate, would deny this. Therefore, if FRB, a type of BSLL, may not exist in the free market than neither can BSLL exist in the free market either. I'm willing to fight you to the death of this word, "either."

Now let us consider this statement of BHHdS's: "On the free market, there will always be maturity mismatching to some extent as entrepreneurs try to anticipate future savings availability. Arbitrageurs earn a profit by shouldering the risk of mismatching and arbitraging between terms." In a free market, entrepreneurs would not have to anticipate future savings. Rather, they would operate on the basis of present savings. One problem here is the failure to distinguish between real and so-called financial saving. The very act of real saving is an act of real investment, and vice versa — they are two different names for the same action(s). Financial investment is the act of exchanging one capital good, money (including newly created fiat money in the form of banknotes[16] or deposits, for various types of claims; e.g., debts or equities of various types. Financial saving is the act of exchanging[17] money for a financial

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[16] In the U.S. these consist in Federal Reserve Notes.

[17] When "saving and investment" are said to be unequal the referents are so-called financial saving and investment. However, financial saving and investment are in reality neither saving or investment. Money is not a sui generis exchange good in comparison to other goods that are either capital goods are consumers' goods; rather, money is a capital good A typical act of financial saving involves exchanging an extant capital good, money, for a financial asset. Financial assets are liabilities; i.e., promises, or they are equity; i.e., shares of ownership of extant goods. Such exchanges take the form of an exchange of money for a pre-existing promise or share or for newly-created such assets. In no case does it involve saving/ investing; i.e. preparation for future consumption; e.g., by foregoing current consumption of an existing consumers' good in order to have it available for future consumption, or by producing durable consumers' goods or capital goods. Rather, financial saving and investment involves exchanging one asset for another; they do not consist of production for the future.

Financial saving and investment may diverge ex ante, but must be equal ex post – and the factors that brings them into equality are the prices, and movements in the prices, of the financial assets. Note that it is prices, not interest rates/yields, that are the relevant ones. Of course, there is a one to one relationship between the price of a specific financial asset and its interest rate, but interest rates are metrics that facilitate the comparison of financial liabilities that have different terms, including maturities,

asset. So, what is the difference between financial saving and financial investment? Objectively, there really is none; however, subjectively there is a difference — it depends on the mentality of the saver or investor; i.e., the individual saver's or investor's understanding of his action, particularly with respect to the riskiness/uncertainty involved. There is no clear dividing line between the two; however, financial investors understand their act to be one of taking on the risk/uncertainty of a loss of wealth in the hope/expectation of achieving a substantial return on their "investment," whereas financial savers understand theirs to be one involving zero or near zero chance of loss in return for relatively low, but safe, return on their "saving."

Let us analyze this viewpoint expressed by BHHdS. "In other words, BH have argued consistently that maturity mismatching may lead to a boom-bust cycle when fostered by government intervention, but will not on a free market." It may be possible that to some extent we are talking past each other. If so, we will be ensnared in a mere verbal dispute, and will not have achieved real substantive disagreement. For it seems possible that the term "MM" is now being used by the two sets of authors in entirely different ways. Unless we all become clear on this, the discussion cannot proceed properly. In our view, MM in all of its manifestations, BSLL including the FRB subset thereof, and BLLS, is a purposeful act that ought to be illegal in the just society. It is akin to fraud or theft or arson. But the way in which

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not prices; and, it is prices that bring about convergence of the supplies and demands for goods.

For Keynes and his followers of all stripes, it is movements in income that bring about the ex post equilibration of saving and investment. For non-Keynesians, in general, it is changes in interest rates. This latter position is often illustrated with a figure depicting the "Market for Loanable Funds." In the figure depicting this non-existent market, the interest rate is measured along the vertical axis and the amounts of funds; (i.e., money) along the horizontal axis. The figure then displays an upward sloping saving curve and a downward sloping investment curve. One problem arises because typically the upward sloping curve represents the supply of loanable funds and the downward sloping curve, the demand for loanable funds. The implication is that the supply of loanable funds and saving are equal, if not identical, and similarly for the demand for loanable funds and investment. And this is not necessarily the case. For more on this, see Barnett and Block (2011B).

BHHdS use this term is to refer to mere entrepreneurial error. This, we certainly agree with them, would be omnipresent in any economy peopled by human beings as we know them. Yes, "arbitrageurs earn a profit" by dealing with the aftermath of error. But they do not at all function in the face of outright fraud. That is the realm not of arbitrageurs, but of policemen and courts.

BHHdS reserve the phrase "excessive mismatching" to refer to "…nonsustainable [sic]) maturity mismatching: credit expansion, the existence of a lender of last resort and government bailout guarantees." These authors summarize as follows: "Thus, BH distinguish between free-market maturity mismatching [a category whose existence we deny] and excessive maturity mismatching fostered by government intervention." Let us be clear. In our view, MM[18] can and does cause ABCs. However, BHHdS have an out. By "excessive MM" we and BHHdS do not mean the same thing at all. Rather, they are referring to "credit expansion, the existence of a lender of last resort and government bailout guarantees." We most certainly are not. For us, MM refers to BSLL, including its FRB subset, and to BLLS. These authors then, are guilty of changing the subject, midstream, so to speak. We were discussing BSLL. We were disagreeing with them about BSLL, and BSLL only. There is not a single iota of difference between the contending parties as to "credit expansion, the existence of a lender of last resort and government bailout guarantees." We are all Austro-libertarians, and hence reject these governmental initiatives on both ethical and economic grounds. We all agree that "credit expansion, the existence of a lender of last resort and government bailout guarantees" do indeed bring about the ABC, and are illicit to boot. Why are we even discussing "credit expansion, the existence of a lender of last resort and government bailout guarantees?" To be perfectly clear, we consider BSLL a form of credit expansion, whether it is of the FRB type or not; to wit: if a financial intermediary borrows money for a period of time, t, and lends it for a period, T, then if $T > t$ we

[18] It must be of sufficient magnitude, however. An MM, whether FRB or BSLL or BLLS, of $5 for the entire U.S. economy will not cause much of anything, certainly not an ABC. See on this fn. 12, supra.

maintain that this constitutes credit expansion no matter the length of t.[19]

Let us discuss now another matter. Their footnote 6 is important enough to quote in full: "Bagus and Howden (2009, p. 399) write: "However, while the practice (BSLL) is not illicit per se, it is greatly assisted and developed through the presence of a fractional-reserve banking system, and can sometimes breed detrimental effects." BB (2015) cite this sentence and comment: "The point is, if BSLL can sometimes breed detrimental effects' [fn omitted] and it should be allowed by law as these authors contend, then it constitutes a market failure, an implication with which, we contend, BH will be, or at least should be, uncomfortable." Actually, BH are not uncomfortable in the least. First, we state clearly and many times that maturity mismatching, i.e., BSLL, is greatly assisted by fractional-reserve banking which we (like BB) do not consider to be a free-market practice. Second, we defend a free market that allows for individual errors which by definition always have detrimental effects, at least for the actor and potentially also for third parties. However, these detrimental effects of individual error do not constitute market failure which is the widespread and correlated nature of individual errors."

Their second point is problematic from the perspective of economics, at least the Austrian variety thereof. They defend a free market that allows for individual errors which by definition always have detrimental effects, at least for the actor, *and potentially for third parties*. However, these detrimental effects of individual error do not constitute market failure which is the widespread and correlated nature of individual errors." This is a most unusual definition of market failure. The mainstream view of market failure is any situation which is not Pareto efficient; i.e., any situation in which a specific action would make one or more individuals better off, without making any individual(s) situation(s) worse.

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[19] Again, we must be cautious here. Just as a credit expansion of $5 for the entire U.S. economy will not cause the business cycle, the same applies to a MM of a relatively short period of time. And, as with the magnitude, neither is an objective fact.

III
OTHER DISPUTES

The heading on p. 3 states: "Maturity Mismatching Does Not Lead to a Business Cycle in the Unhampered Economy." How are we to take this claim? In one sense, we are tempted to agree with our Austro-libertarian collaborators and say: "Of course not. You are correct. You are totally spot-on. Indeed, you are necessarily exact. For, if there is MM, then, apodictically, the market is *necessarily* hampered. This is due to the fact that MM is incompatible with a truly free market. BHHdS will not be happy with this response. They will want to say, presumably, that MM *is* compatible with the full free enterprise system and will not lead to the ABC as long as the "… three phenomena (that) foster excessive (i.e., nonsustainable [sic]) maturity mismatching: credit expansion, the existence of a lender of last resort and government bailout guarantees" are not in play.[20] Well and good. Here, there is a substantive disagreement between the two sets of authors. But the way they put matters, with their reading of it, is actually circular. They assume to be correct the very issue under debate; namely, the BSLL is indeed a legitimate aspect of the unhampered market.

BHHdS tell an interesting story about Crusoe and Friday. In it, BSLL enables this duo to create more wealth than would otherwise be possible for them. They conclude this anecdote with this comment: "Thanks to maturity mismatching, the correct estimate of future savings coupled with a low future time preference rate (of Robinson) to produce a capital good (the sharpened stick) was built. Society is wealthier thanks to maturity mismatching." Insightful as it is, this scenario is open to a reductio ad absurdum: for the same tale applies to FRB, and BHHdS are on numerous occasions on record as opposing FRB on both economic and ethical grounds. With FRB, A lends $100 to B, the bank. B gives to A a demand deposit for this amount of money.

Whereupon B turns around and lends $90 to C (keeping a reserve of 10% against the demand deposit B has given to A.) As

[20] The present authors have inserted the first parentheses "(that)" into the quote in the text at this point.

part of his transaction with C, B grants him a demand deposit for this latter amount of funds. Now, together, A and C can do what A alone could not accomplish. As BHHdS will not say, but are required by logic to admit: "Society is wealthier thanks to" FRB, also. But here is the rub. In the FRB case, clearly, the money stock has increased. This has dire imprecations for the "wealth of society. That is, it overturns the supposed gain. But the same exact thing can be said for MM, BSLL in this case. Here, A lends B the bank $100 for one year. B grants A a time deposit of that amount of money for that period of time. Whereupon, as before, B turns around and lends that $100 (presently, there is no reserve requirement for non-transactions deposits under Federal Reserve Regulation D) to C for 10 years. It cannot be denied, as in the previous case, there is now more money in circulation than otherwise would have been true. And, the same negative effects, as before, come about with BSLL, as with FRB.

There are problems with BHHdS's fable about Crusoe and Friday, beyond the fish that don't rot, which we accept arguendo. First, Friday would have to estimate that Crusoe would roll the loan over for a period of at least five more days after the first five-day loan period, but would also have to assume that after the second five-day period expired, the loan would be rolled-over yet again, as after ten days, the capital good would be completed, but not yet put to use. That could not be done until the eleventh day. Moreover, Friday might have made entrepreneurial error(s) that would result in consequences quite different from the propitious results posited by BHHdS. First, of course, Crusoe may roll the loan over but not for the period of time necessary to complete the production of the capital good *and* bring it into production for a sufficiently lengthy period of time to enable repayment of the loan. This brings us to another problem. Friday may have overestimated the productivity of the capital good. That alone would increase the period of time for which the loan would have be in existence, regardless of the number of times it had to be renewed. Finally, and most important for this matter, what BHHdS maintain about Crusoe's five-day loan to Friday could have been maintained if the loan had been a demand loan; i.e., if Crusoe loaned his saved fish to Friday with the understanding that Friday had to pay back the loan plus accrued interest

on Crusoe's demand. That is, with their example, BHHdS have made the case that all BSLL, *including FRB*, is compatible with a free market.[21] We note, that without any of the risks of entrepreneurial error affecting anyone apart from the entrepreneur, Friday, the same results posited by BHHdS could have been achieved merely by having Friday reduce his daily production (and consumption — we note he had no savings, and thus, unlike Crusoe, had been consuming his entire production) of 10 fish, by, say, half. This would have freed up time that he could use to produce the sharpened stick. This would have taken a little longer, but so what? The additional time is not important in the big picture, especially when the alternative is the possibility of an ABC, with attendant misallocations of resources and distortions of the structure of production. Friday does not have to estimate/forecast/project *future* saving. All of the necessary savings already exist in the form of the 10 fish Crusoe is willing to lend to him. The very acts of Crusoe in foregoing consumption of the fish he had produced constituted both real saving and real investment in the stock of durable consumers' goods. The question is whether in the process of using the fish to enable production of the spear, Friday's entrepreneurial judgment was correct: that it would free up enough working time to enable the spear to be completed and put to use. A second question arises as to the accuracy of his entrepreneurial judgment regarding the anticipated productivity of the spear. In any case, as noted above, the same results could be achieved by Friday if Crusoe did not exist, or without any interaction with Crusoe; i.e., in the absence of any granting of credit by Crusoe. The only difference would be that the spear would not be completed as early. Note that if Friday undertakes the course of action we posit, there is no chance that there will be any misallocation of resources resulting from attempting to produce a capital good that is not in accord with the relevant time preference; to wit; his own. However, as soon as he borrows short (five days) from Crusoe, and begins the 10-day (minimum)[22] project, the essence of an ABC — a mismatch between production and

[21] This, it need hardly be said, is incompatible with their own position on FRB.

[22] Although the spear is expected to be completed in 10 days, it might not prove productive for a while until Friday has time to learn to use it.

preferred consumption, becomes possible if Crusoe will not roll over the loans as necessary.

Perhaps this is the place to note that Nobel Laureate Friedman,[23] as Keynes (1936), (who, had he lived another 14 years, would undoubtedly won the very first Nobel Prize in economics) does not use a bright dividing line separating FRB and other debts. Keynes (1936, 167, n. 1) states:

> "Without disturbance to this definition, we can draw the line between 'money' and 'debts' at whatever point is most convenient for handling a particular problem. For example, we can treat as *money* any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as *debt* what cannot be recovered for a longer period than this; or we can substitute for 'three months' one month or three days or three hours or any other period; or we can exclude from *money* whatever is not legal tender on the spot. It is often convenient in practice to include in *money* time-deposits with banks and, occasionally, even such instruments as (e. g.) treasury bills."

And, Friedman's preferred measure of money is M2, which includes, inter alia, savings deposits, small (less than $100,000) time deposits, and a few other types of liabilities of depository and other financial institutions' liabilities that are overwhelmingly used to fund purchases of financial assets with longer terms to maturity than those of the liabilities; i.e., that is, they are part of BSLL operations.

Next BHHdS launch into an example in which "The structure of production has become more capital intensive: … A bank borrows for 1 year from A to invest in a project that takes 2 years to mature. After the first year, A is paid back his loan and increases consumption. Now, person B takes on the role of the saver, abstains from consumption, and gives a 1-year loan to the bank. The bank can now successfully complete the financing of the project."

Here are several comments about this scenario. First, this can be done, too, under FRB, something rejected by these authors, and,

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[23] http://www.nber.org/chapters/c5279.pdf

indeed, all parties to this dispute. Second, it is not necessarily the case that greater capital intensity is better, more wealth producing, than lesser capital intensity. There can be too much of a good thing. There are alternative costs to everything. Greater capital intensity translates into less of something else. We want to optimize capital intensity, not maximize it in which case we would all die of starvation.

BHHdS offer the following for our consideration: "During production time, there has been no change in social time preference rates." But this is problematic. For what determines the optimal structures of production? The SoP are determined by the decisions of entrepreneurs of all types: capitalists, individuals as owners of their labor, and owners of natural resources. For the SoP to be optimal, they must coincide with the current preferences of individuals both in their roles as consumers and as suppliers of resources *and* with what will prove to be their future such preferences.

What are the difficulties here? First, there are no such things as preference rates or rates of preference — A is either preferred as is manifested in the act of doing A, or it is not. In fact, all we can say regarding any action that manifests a preference for A is that A is preferred and everything else is not. Second, only individuals have preferences, time or otherwise; there is no such thing as a "social" preference, the determination of which would necessarily involve interpersonal utility comparisons.

We again part company from our learned colleagues when they write "It is possible to imagine an (albeit unlikely) scenario where credit expansion does not distort the structure of production. This is the case if, after a credit expansion, social time preference changes favorably to such an extent that the structure of production is sustainable and there is no a bust."

Perhaps the problem here is use of the terms "social time preference" and "the structure of production." As discussed above, there is no "social time preference." Moreover, although it may have some pedagogical use, the term "the structure of production" is fatally flawed when used for analytical purposes. There is no *the* structure of production; rather there are many production processes, each with its own structure. Of course, many of these processes are interrelated, but not such that they collectively constitute

a structure of production; i.e., a unified structure of production. This is the type of aggregation for which non-Austrians are famous, and which is in large part responsible for so much error in economic thinking.[24]

Here is yet another issue on which we disagree. They opine "Relax the key assumption in our example and consider what happens if the workers do not save all of their additional income of $1000 dollars at the end of year one. If they spend even a small portion of their new income, consumer goods' prices will rise relative to capital goods' prices, the exact occurrence that instigates the Austrian business cycle."[25]

But surely the *source* of the relative price rise of consumers' relative to capital goods is all important. Whether the ABC is instigated or not depends, crucially, on *why* these relative prices have changed. If this is due to "credit expansion, the existence of a lender of last resort and government bailout guarantees" then of course the ABC will be generated. On the other hand, if this is the result of an exogenous alteration in time preferences, then this will be an essential part of the market process, and no ABC will ensue. Then, there is the not so minor issue of scale. If, for example, the "small portion" of the $1000 is only a thin dime, there will be no ABC fostered. Magnitudes are very important in reality.[26]

Not only are the source of the changes in relative prices and the relevant magnitudes important, but it is not, as they assert, that the ABC is instigated by a rise in consumer goods' prices relative to capital goods' prices. Rather, the ABC is engendered by an unwarranted expansion of credit that that is used to increase demands for credit-sensitive goods, with consequent effects in terms of prices of goods and resources and reallocations of resources that prove to be misallocations; i.e., that distort the SoP.[27] Although

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[24] We are reminded of Salerno's (2010C) characterization of Mengerian; i.e., of Austrian, economics as causal-realist. Such aggregative concepts as a SoP are far from realistic and can play no useful role in the cause and effect analysis required by economics and supplied consistently only by Austrian economics.

[25] Footnote omitted.

[26] See on this Barnett and. 2005-2006.

[27] We have said, above, that there is no such thing as *the* SoP. Throughout, SoP should be read in the plural; i.e., structures, not structure.

some types of consumers' goods, usually durable consumers' goods, tend to be credit sensitive; e.g., houses, automobiles, SUVs, boats, furniture, etc., other major categories; e.g., food, energy, clothing, entertainment, etc., tend not to be. The same is true for capital goods and, importantly, human capital; durable capital goods and those that are very expensive tend to be credit sensitive, whereas others tend not to be. To know what happens to the structure of relative prices insofar as the categories "consumers' goods" and "capital goods" are concerned, we would need data that is very accurate and complete. Moreover, as individuals' behaviors change over time, it is not clear at all when the prices of consumers' goods would rise relative to those of capital goods. It all depends upon the actions of individuals in their various roles in the economy. It is not, then, correct to say that a rise in the prices of consumers' goods relative to those of capital goods is what instigates the ABC.

BHHdS state: "If they spend even a small portion of their new income, consumer goods' prices will rise relative to capital goods' prices, the exact occurrence that instigates the Austrian business cycle."

This, unfortunately, is very Keynesian. Keynesians assume, implicitly, that any financial saving detracts from spending on currently produced goods; i.e., aggregate demand, and is therefore detrimental to the economy.[28] They do not seem to understand that financial saving is the purchase of financial assets and real saving is real investment; i.e., that to refrain from spending on consumers' goods does not mean that one does not spend — it merely means that one spends on something other than consumers' goods.[29]

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[28] Keynes himself certainly looked on saving as creating problems, and his modern followers are doing everything in their power to bring about his desired result of the "euthanasia of the rentier." Note that to them perhaps the most important cause of our current "troubles" is the alleged glut of saving. Read any of the relevant *New York Times* columns of Krugman on this matter. For intensive rebuttals, see Woods and Murphy (2016)

[29] Hoarding, takes the form of lengthening the period of time between the acquisition of an asset and its use, including use in exchange. In the case that is relevant here, hoarding of money is merely an increase in the period of time between which the money was acquired and when it is spent.

When BHHdS assert that if individuals "spend even a small portion of their new income" it will cause prices of consumers' goods to rise relative to those of capital goods, that is to endorse the Keynesian assumption. We must always ask, on what did they spend the rest of their new income?

They then "Relax the key assumption in their example…" But that example has not one but several interrelated assumptions that render the example problematical. One but needs to consider the relevant balance sheets; i.e., those of the bank, the entrepreneur and the workers, collectively, at the beginning and end of each year. If we consider only changes from their positions at the beginning of the example, and only the changes that result from the example, the following results are observed.

First, the bank's balance sheet doesn't change except *during* each year. Any change during the year is reversed by an offsetting change later in the year. At the end of 10 years it looks the same as it did at the beginning.

The entrepreneur's balance sheet shows assets of one investment project (at cost: $10,000) and liabilities of ten $1,000 notes with zero term-to-maturity; i.e., due NOW, payable to the workers.

The worker's balance sheet shows assets of ten $1,000 notes with zero term-to-maturity; i.e., due NOW, payable by the entrepreneur, and a net worth of $10,000 (one might reasonably refer to this as sweat equity ☺). It is obvious that this example bears little relationship to reality, and thus there is not much to be learned from it.

Our authors assert: "It is hard to understand why B has the right to burn the $100, but not the right to lend it for 2 years. The obligation in his contract with A is to return any $100 after 1 year. The fulfillment of this obligation is compatible with burning the specific $100 bill — as BB acknowledge — as well as lending the specific $100 bill for 2 years to C."

There are several reasons why this is alright. One, in the case of "Burn, baby, burn" there is no conflict in titles, no legal incompatibility between two different contracts. In BSLL there most certainly is, just that. B's contract with A is incompatible with B's contract with C. B is granting to C, 10-years-worth of money, when B has from A only the right to money for a single year. Two, BSLL creates additional money compared to the burning scenario. Three,

B may burn the $100 for the same reason he can spend it; he has the right to dispose of it, but only in ways that do not create conflicts of rights. If he spends the $100 dollars he no longer has any rights to it, but he still must repay $110 to A in one year. If he burns the $100 beyond salvage, it no longer exists, therefore he no longer has a right to it.

We next turn to the issue of fungibility. BHHdS agree with us that BSLL only works for fungible assets, such as money, or homogenous ones such as gold bars, corn, wheat, oil, coal, etc. Here is their take on this matter:

> "Bagus and Howden (2012b) argued that while maturity mismatching would be a legitimate practice for fungible goods, it is illegitimate for specific goods. If B borrows $100 for 1 year from A, he may lend $100 to C for 10 years. It is a risky, but not fraudulent practice. In contrast, if B borrows a specific good such as a Picasso painting for 1 year from A, he is not allowed to lend it for 10 years to C. From this distinction, BB (2015) attempt an interesting reductio ad absurdum by stating:
>
> '[I]f B lends out A's Picasso to C for 10 years, having the rights to it for only one year, it is still possible for B to come out of this morass alright. B can go to C at the end of the year and ask C for the picture back even though the latter has the rights to it for nine more years.'
>
> Therefore, BB believe that BH should also maintain that maturity mismatching in the case of the Picasso painting would be just risky but not fraudulent. BB are certainly correct that B could deliver the painting back if he could convince C to return it earlier. The decisive difference between this case of maturity mismatching with that of fungible goods is that the latter has no conflict at the moment when B lends to C. When B borrows money short from A to lend money long to C, these two contracts are compatible and can be fulfilled ab initio. In contrast, when B borrows the Picasso painting for a short term from A to lend long term to C, these two loan contracts are not compatible at that moment. They cannot be fulfilled at the same time."

In our view, fungibility is far too weak a reed upon which to base BHHdS's entire argument. Upon further reflection, we realize that with respect to one aspect of BHHdS (2016) we fell into an

academic trap, one particularly troubling for Austrian economists, to wit: ignoring reality. Where we discussed the issue of BSLL in the context of what B might do with that, X, which he borrowed from A, we maintained that he could not lend to X to C for a longer period than that for which he had borrowed X from A. We still adhere to this position. However, when the issue of burning X arose, we maintained that B could burn X if he so chose because unlike lending X for a longer period of time that he had rights to X, a case that creates incompatible contracts, burning X does not create such contracts. And, this is the case whether X is $100 or a Picasso. Of course, what we failed to take into account in our analysis was the totality of loan contracts in the normal course of events. That is, the terms and conditions of loans usually are not restricted to that which is lent, X, (usually an amount of money), what is to be returned to the lender (usually the principal and interest), and the date(s) on which such repayments are to be made. In fact, they include collateral and the maintenance thereof, and what may be done with X. For example, one may not go to a financial intermediary and borrow money for the purpose of buying an automobile and use the funds to buy a motorcycle or take a vacation. Similarly, one may not burn a Picasso one has borrowed because, even if there is no explicit provision in the loan contract prohibiting such an act, there is most definitely an implicit such condition. Thus, the reason one may not burn a borrowed Picasso is not because it is unique and therefore not a fungible good, rather it is because such an act would be prohibited by the loan contract. Moreover, if the loan contract explicitly allowed the borrower to burn it (a most unlikely event), the borrower could do so.

What are we to make of this statement by BHHdS: "BB (2015) maintain the (sic) BH claim that maturity mismatching will cause a business cycle. BB do not clarify whether they mean that maturity mismatching necessarily or only possibly causes a business cycle."

In our view, it matters not which is the case; either one or the other, and, certainly, both, undermine their position. Let us consider them one at a time. Suppose, first, that MM "only possibly causes a business cycle." That is, sometimes it does, and upon other occasions it does not. As we specifically stated, supra: "Magnitudes are very important in reality."

IV
CONCLUSION

We heartily agree with BHHdS that entrepreneurial error does not constitute market failure. We are no longer in the Garden of Eden; we are all nowadays necessarily imperfect. Causing an ABC, however, is a horse of an entirely different color. In the words of one of our intellectual opponents on this matter (Bagus 2010, pp. 15-16), he admits that BSLL can lead to such an eventuality and is thus condemned by his own words:

> "Maybe the most important conclusion of our analysis is that not only fractional reserve banking can lead to an Austrian business cycle. Even with 100 percent reserve requirements for demand deposits and a constant money supply, excessive maturity mismatching … can lead to unsustainable booms."

Nor can we see our way clear to agreeing with them that "The nub and kernel of economic growth theory is that longer-dated investments are more productive than shorter-dated ones." Of course, the meanings of the phrases "longer-dated investments" and "shorter-dated investments" are critical.

First, if we mean by those terms the period of time involved in the investment process; i.e., in making the capital goods, there is no reason to think that the longer it takes to produce a specific capital good, the more productive is that good. Second, if we are referring to the length of time that elapses from the use of a specific capital good until the specific consumers' good to whose production it contributed is sold to a consumer, then, again, there is no reason to think that "a longer-dated" such investment is necessarily more productive; rather, the exact opposite would be the case. Third, if by longer- and shorter-dated investments we are referring to the durability of the capital goods created in the investment process, then, yet again, there is no reason to think that a "longer-dated;" i.e., more durable capital good necessarily is more productive than a less durable one. Finally, if by "longer-dated" investment one means the length of time for which funds have been borrowed to finance an investment, then obviously merely

because one finances an investment for a lengthier period does not make that investment more productive.

In sum, because of the complexity of production processes and structures of production, we do not think such a blanket statement is true.[30]

Our Austro libertarian debating partners aver "Maturity transformation is an economic action that allows longer-dated investments to be undertaken today and fully funded only later by new savings." Depending on the meaning of "longer-dated investments" this may be true. Then again, it may not, if for no other reason than that the "new saving" expected (hoped?) to be available might not materialize, or if it does arise in the future, at that point in time they may have a superior alternative use. In any case, we do not want to maximize the period of production; if we did, we would never benefit from our savings. Rather we desire *optimal* duration,[31] something quite different.

Last but perhaps not least, there is one point that BB (2015) made against BH (2012) which BHHdS overlook. It is our hope that if they choose to reply to this present essay of ours in future, they will respond to this when they do.

Included in this regard is the following quote mentioned above (from Bagus, 2010, pp. 15-16); only this time, we will fill in, and, italicize, the material replaced by the ellipses:

> "Maybe the most important conclusion of our analysis is that not only fractional reserve banking can lead to an Austrian business cycle. Even with 100 percent reserve requirements for demand deposits and a constant money supply, excessive maturity mismatching *induced by government guarantees and central bank lending of last resort* can lead to unsustainable booms."

Our question to them is this. Suppose, arguendo, that there were no "government guarantees and central bank lending of last resort." That is, if there was a totally free market, of the sort even

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[30] For more on this, see Barnett and Block (2006, Appendix 1, esp. Table 1.)

[31] We refer here to the duration of the SoP, rather than the "financial duration."

Rothbard himself would endorse,[32] *then* would a BSLL of sufficient magnitude and duration still lead to "unsustainable booms?" If they answer "Yes," we maintain that they are implicitly agreeing with us that such would constitute a case of market failure. If they answer "no," then we have a fundamental disagreement with them. That is, they would then be maintaining that BSLL of sufficient magnitude and duration to cause an "unsustainable boom" *cannot* arise in an otherwise free market economy absent governmental intervention in the form of government guarantees and central bank lending of last resort, or some other relevant type of intervention. If that is their position, then we are back to our fundamental disagreement with them about economic theory. That is, we assert first, on ethical grounds that BSLL is inconsistent with a free market; and, second, on the basis of economic analysis, that BSLL, of sufficient magnitude and duration, and absent any relevant government intervention, save for legal approbation of BSLL, will cause an "unsustainable boom."

In fact, Mises himself came close to considering this question and taking our side of this debate as early as 1912. As Mises (1953, 263, citing Knies (1876, 242)) states about maturity mismatching in general:

> "For the activity of the banks as negotiators of credit the golden rule holds, that an organic connection must be created between the credit transactions and the debit transactions. The credit that the bank grants must correspond quantitatively and qualitatively to the credit that it takes up. More exactly expressed, 'The date on which the bank's obligations fall due must not precede the date on which its corresponding claims can be realized.' Only thus can the danger of insolvency be avoided."

In a similar way, Murray N. Rothbard comes close to our analysis of maturity mismatching (1983, p. 99):

> "Another way of looking at the essential and inherent unsoundness of fractional reserve banking is to note a crucial rule of sound

[32] Except for the fact that there would of course be BSSL, which we will not argue about at this point.

> financial management — one that is observed everywhere except in the banking business. Namely, *that the time structure of the firm's assets should be no longer than the time structure of its liabilities*." (Italics in the original)

In citing these two economists, we are not guilty of an argumentum ad verecundiam. Yes, of course, Mises and Rothbard are authorities for all Austrian economists and libertarian theorists.[33] But we do not argue that we are correct because they incline in our direction. Hopefully, we have by now given sufficient reasons in justification of our position.

We cannot resist ending on this note: "He who sells what isn't his'n, must buy it back or go to prison."

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[33] They should be for all scholars, and they are not, but that is a different matter

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