THE ERRORS OF J. R. RALLO'S MONETARY THEORY: PART II

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Resumen: En su obra *Una crítica a la teoría monetaria de Mises*, Juan Ramón Rallo (2019) critica la teoría del dinero de Mises tal como se desarrolla en *Teoría del dinero y del crédito* de Mises (1971). En este trabajo muestro que Rallo y su predecesor Antal Fekete no hacen avanzar la teoría monetaria austriaca, sino que defienden una variante idiosincrática de la escuela bancaria. El enfoque de la escuela neo-bancaria adolece de los mismos defectos que la escuela bancaria tradicional, sobre todo de no tener en cuenta la teoría del capital. Para abordar las cuestiones pertinentes, necesitamos volver y desarrollar algunos de los fundamentos esenciales de la teoría económica. Discuto la naturaleza del dinero, el dinero ideal, el ahorro real, la demanda de dinero, la caída de los precios, el significado del tipo de interés y su determinación, etc. Demuestro que la expansión crediticia de un sistema bancario de reserva fraccionaria basado en letras es propenso a desencadenar un ciclo económico austriaco. Además, demuestro que en un mercado libre el descalce de plazos no desencadena un ciclo económico. La Parte I de mi trabajo se publicó en *Procesos de Mercado*, Vol. XX, nº1, Primavera 2023. El presente artículo es la Parte II de mi trabajo y debe leerse como continuación de la Parte I.

Palabras clave: Banca con reserva fraccionaria; teoría de la liquidez; teoría del ciclo; teoría del capital; teoría monetaria; descalce de plazos.

Clasificación JEL: E21; E22; E32; E41; E43.

Abstract: In his work *Una crítica a la teoría monetaria de Mises*, Juan Ramón Rallo (2019) criticizes Mises's theory of money as developed in Mises's (1971) *Theory of Money and Credit*. In this paper, I show that Rallo and his predecessor Antal Fekete do not advance Austrian monetary theory, but rather defend an

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idiosyncratic variant of the banking school. The neo-banking school approach suffers from the same shortcomings as the traditional banking school, most notably its failure to consider capital theory. To address the pertinent issues, we need to return to and develop some of the foundations of economic theory. I will discuss the nature of money, ideal money, real savings, the demand for money, falling prices, the meaning of the interest rate and its determination, etc. I show that the credit expansion of a fractional reserve banking system based on real bills triggers an Austrian business cycle. Moreover, I show that in a free market maturity mismatching does not trigger a business cycle. Part I of my work was published in *Procesos de Mercado*, Vol. XX, nº1, Spring 2023. The present article is Part II of my work and should be read as a continuation of Part I.

Keywords: Fractional reserve banking; liquidity theory; business cycle theory; capital theory; monetary theory; maturity mismatching.

JEL Classification: E21; E22; E32; E41; E43.

1. **Maturity mismatching is not the cause of the cycle but can be sustainable and dynamically efficient**

Rallo (2019, pp. 204-5) argues that maturity mismatching—i.e., borrowing short, lending long—along with the mismatch of risks is the true origin of distortions in the structure of production and the business cycle (and not fractional reserve credit expansion). Yet maturity mismatching in a free market is not a problem, as there is a constant flow of (short-term) savings that can be anticipated correctly (Bagus 2012, Bagus, Howden, and Huerta de Soto Ballester 2018, Huerta de Soto 2014, pp. 231-32). Maturity mismatching in a free market benefits society by increasing living standards. I will analyze these issues in detail in the following.

1.1. *Error and maturity mismatching*

Maturity mismatching can be excessive. As I have written elsewhere (Bagus 2010, p. 2), "A 100 percent reserve system can still bring about artificial booms by maturity mismatching if there is a

central bank or government support or guarantees for the banking system."

In other words, a 100 percent reserve requirement is not sufficient to eliminate business cycles, because other government interventions in the financial system could cause business cycles. For instance, the existence of a lender of last resort, government bailouts, and implicit or explicit guarantees for the banking system can promote excessive maturity mismatching outside the free market. In an intervened economy excessive maturity mismatching may cause boom-and-bust cycles.

Things are different in a free market. As Bagus and Howden (2010, p. 73) argue in making the case for the free market, "A financial intermediary might borrow short and lend long by continually rolling over their borrowings, relying on the correct anticipation of the future availability of savings for success. In a free market there is no general reason why one would systematically under- or overestimate the future availability of savings, and thus, the possibility to roll over loans."

Indeed, if there is no government intervention and moral hazard caused by the state, then there is no reason why entrepreneurs will systematically err and overestimate the future availability of savings. Bagus and Howden conclude:

> "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. Excessive maturity mismatching discoordinates the term structure of savings and the term structure of investments (the time structure of individual savings and investment plans). Three phenomena foster excessive (i.e., nonsustainable) maturity mismatching: credit expansion, the existence of a lender of last resort and government bailout guarantees. Excessive maturity mismatching caused by government interventions leads to an unsustainable misalignment of the term structures of savings and investments. As a result, financial institutions unsustainably borrow short and lend long." (Bagus and Howden 2010, p. 81)

On a free market, maturity mismatching leads to a fall in long-term interest rates that is not artificial but based on the long-term

availability of savings. There is no artificial boom. In contrast, excessive maturity mismatching promoted by government interventionism leads to an Austrian business cycle.

From the perspective of an individual financial institution, maturity mismatching is a risky activity (Bagus and Howden 2009). The intermediary anticipates being able to renew or roll over the short-term debt obligation on agreeable terms. The middleman can make a mistake, though, and find himself unable to obtain funding or another source of money to fulfill his obligations. In this case, there is an individual entrepreneurial error. The error will then reveal an individual malinvestment. An investment project cannot be completed because of an overestimation of the available resources. Future savings—i.e., the willingness to abstain from consumption—were overestimated. Time preference is higher than the entrepreneur had expected.

The overestimation of the future availability of savings is a risk that is not exclusive to maturity mismatching. Even in an economy with perfect maturity matching, an unexpected increase in social time preference will lead to losses and restructuring. When time preference increases, the structure of production becomes shorter. Some investment projects are not profitable anymore because of the increase in time preference.

The availability of future savings may be overestimated or underestimated. In a free market, there is no reason to believe that there will be a systematic error concerning the availability of future savings in one direction. Intermediaries may err individually, but there is no reason why they should err systematically. Individual error will lead to individual losses but not to an artificial boom and widespread malinvestments.

1.2. *Maturity mismatching in an unhampered economy*

As stated above and as is essential to capital theory, savings are needed to sustain the owners of the factors of production during the production process. The savings need not be procured already at the beginning of the project but can be secured during the lifespan of the project. Entrepreneurs have to estimate the availability of future

real savings—i.e., present goods available to sustain the factors of production.

More long and ambitious projects can be successfully finished than would be achievable by depending just on the savings available at the beginning of the project if the flow of future savings is correctly predicted. This implies that, if future savings are properly foreseen, maturity mismatching enables the completion of more ambitious projects than would have been achievable by relying solely on matched-maturity finance. As roundabout production is more productive (Mises 1998; Böhm-Bawerk 1891), relying merely on savings available at the beginning of a project reduces the amount of wealth-creating investment projects below the level they otherwise could reach. Maturity mismatching on a free market is dynamically efficient[1].

The following example adapted from Bagus et al. (2018) illustrates the possibility and advantage of maturity mismatching in a Robinsonian economy. On an island there are two individuals, Robinson and Friday[2]. They both can catch 10 fish per day with their bare hands. Each of the two consumes all 10 fish a day. Friday wants to produce a sharpened stick, a capital good, that will help him to increase his productivity in fish catching. Friday believes that the production of the stick will take him 10 days, during which his fish production will fall to 1 fish per day. He also estimates that with the new stick he will be able to double his fish production to 20 fish per day. Robinson has 100 smoked fish saved. Friday has no savings and asks Robinson for a loan. Robinson offers him a loan of 100 fish for five days with an interest payment of 5 fish. While Friday believes that he will not be finished with his project after five days, he accepts the offer because he believes that Robinson will be willing to renew the loan after five days. After the first five days, Friday pays the interest and convinces Robinson to renew the loan. Thus, Friday can complete his project. Without mismatching maturities of the loan and the investment project, Friday could not have undertaken his project, because he did not secure the necessary savings beforehand. However, he expected

[1] On the concept of dynamic efficiency, see Huerta de Soto (2009).

[2] For a similar Robinsonian example, see Bagus and Howden (2010a).

that Robinson's time preference would not change and he could renew the loan. Of course, he could also have looked for another lender if there were any other savers on the island. As a result of maturity mismatching, a new capital good has been constructed, making the island community richer. The fact that there was maturity mismatching is revealed after the project is finished. Beforehand, Friday cannot know for sure how long it will take him to find a suitable stick and produce it. Because of uncertainty, the possibility of maturity mismatching is part and parcel of Friday's investment project and of investment projects in general because their length is uncertain at the start.

Note that the example also holds when we introduce an intermediary, Tom, who interacts between Robinson and Friday, so that the concept of borrowing short and lending long becomes more apparent. Now, Tom borrows short 100 fish from Robinson for 5 days with an interest payment of 3 fish. Tom then lends the 100 fish to Friday for the term of 10 days with an interest payment of 10 fish. Tom expects Robinson to renew the loan for another 5 days, or he knows of other short-term savers on the island that could take Robinson's role. Tom is borrowing short and lending long. He engages in maturity mismatching. His endeavor is risky because Robinson might be unwilling to roll over the loan and no other saver could be found. However, if Tom is right in his anticipation of future savings—i.e., the availability of fish saved that could be lent and transferred to Friday in order to sustain him during the production period—then the project can be completed. There is no business cycle, no liquidation, but a new capital good comes into existence, financed by the ongoing savings of society. Thus, if the social rate of time preference and the ongoing real saving do not change, the maturity matching is successful and achieves a better intertemporal coordination. Maturity mismatching is welfare enhancing.

In a modern monetary economy, things are similar. Imagine that a bank borrows for three months from person A to invest in a project that takes one year to mature. After the first three months, A is paid back his loan and decides to increase his consumption. But must the project now necessarily be abandoned? No, because another person, B, could take on the function of the saver, abstain from consumption, releasing consumer goods for person A and

granting a three-month loan to the bank. After another three-month period, another person, C, may take on the role of the saver and then finally another person, D. Then the bank can successfully complete the financing of the investment project[3]. The social role of maturity mismatching becomes apparent, as the structure of production has become more capital intensive than it would have been without the investment project. During the time of the project, the social time-preference rate has not changed. The real savings available did not change; there was only a change in who took on the role of the saver. First, it was person A, who provided the savings by abstaining from consumption, then it was person B, then C, and finally D.

There are many ways in which the position of a saver can be transferred to someone else. There are many institutions that facilitate this change of savers (Davidson 2014, p. 232). Machlup (1940, p. 21) shows that securities markets facilitate the change of ownership to titles of capital goods. For instance, someone may use his short-term savings and buy a newly issued stock, hold it for a year, and sell it to another person, who takes the role of the first saver. The stock market encourages the investment of short-term savings, as the transfer of ownership is facilitated. Short-term savings thereby become available for the long run (Machlup 1940, pp. 24, 65; Machlup 1932, p. 284)[4].

It is not only the institution of the stock market that facilitates the transfer of the saver function. The same is true when bonds are resold after a short period of time. Bonds can also be reissued, and

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[3] Instead of issuing a loan, the intermediary could issue shares that first are bought by A, who sells the shares to B after three months, who sells to C three months later, and finally to D. Shares can fall in price, of course. So if A is only able to sell the shares at a lower price, he cannot increase his consumption in the amount of his initial sacrifice, and B's sacrifice is accordingly smaller.

[4] As Machlup (1940, p. 33) puts it, "It is the main advantage of the security system of financing real capital that it allows temporary savings put by for future requirements (that is, temporarily postponed consumption) to be used for the formation of fixed capital."

Similarly, Machlup (1932, p. 283) states, "*The short-term saving is liquid in so far as a new saver takes the place of the liquidating one.* The substitution of one saver or investor for another can be expected in normal times. There is a continuous prolongation and turnover of short-term loans and short-term investments. The individual owners, creditors, and debtors change but the volume of capital is not reduced" (emphasis in original).

loans can be rolled over. The change of savers can also be done through investment funds or money market mutual funds. Different savers may buy a title to these funds, selling them later when they want to increase consumption. And other savers who buy the titles take on the role. These investment funds may continually roll over their investments—i.e., buy new bonds—when the old ones are repaid.

We have a continuous flow of savings (of different maturities from the point of view of the individual saver) that is continuously invested through financial markets. In this way, short-term individual savings become long-term savings for the economic system[5]. So maturity mismatching does not pose any problem, as there is a constant flow of savings whose overall level is determined by the social time-preference rate. Changes in the social time-preference rate must be anticipated, of course.

It is probably the individual bank's perspective that has led proponents of the Real Bills Doctrine to believe that maturity mismatching may pose a problem. And while it is risky from an individual bank's perspective, the assessment changes when the economic system as a whole is considered, where individual savers are replaced by other savers continuously.

As entrepreneurs can estimate correctly the evolution of the available savings, which is determined by the social time-preference rate, they can successfully engage in maturity mismatching by rolling over the short-term loans. As Davidson (2014, p. 77) points out:

> "Consider, next, an economy where only the social time preference is assumed to be constant. The time preferences of individual

[5] As Machlup, (1940, p. 225) puts it:

> "For even though the individual savings are only saved for a temporary period, collectively they may in large part be looked upon as long-term savings of the economic system. In most cases the temporary saver who withdraws his funds in order to make the purchase that he had previously postponed has a successor who is just saving part of his income for later use. The probability that the new savings will be sufficient to cover withdrawals of old savings is what makes it possible to invest these short-term funds in production."

See also Machlup (1940, p. 249).

> actors can change, but gross saving is constant over time, as in the ERE. While the composition of the investment vehicles in which these savings are held need not remain the same, the renewal or replacement of those of finite duration with others of equal value—but not necessarily the same duration—must take place, this being the necessary implication of the quantity of gross saving being maintained. With regard to production, some processes are ongoing, others are newly initiated, and yet others are terminated, but gross saving and investment continue to equal each other in quantity—that is, in money value—as capitalist-entrepreneurs freely compete with one another to supply present money, and original factor owners freely compete to demand it."

Machlup (1940, p. 169) puts it similarly: "The condition for the maintenance of a given level of production, or for the continuance of a production process that have once been started, is merely that there should be a constant absolute volume of current saving."

In sum: Maturity mismatching with a constant social time-preference rate does not lead to an artificial boom-bust cycle (Davidson 2014), because the level of (gross) savings remains constant indefinitely. The fall of the long-term interest rate due to arbitrage reflects the actual social time preference; market interest rates are in line with consumer preference.

1.3. *Maturity mismatching versus unbacked real-bill credit expansion*

After the above argument, one might pose the following question: If maturity mismatching does not systematically cause business cycles in an unhampered economy, why would unbacked real-bills credit expansion cause a business cycle in an unhampered economy? If free market maturity mismatching could be beneficial for society, could not also free market credit expansion limited by the amount of real bills be beneficial for society?

One might believe that unbacked credit expansion only becomes problematic when fostered by central banking and government interventions leading to *excessive* credit expansion in the same way we argued that only *excessive* maturity mismatching leads to intertemporal distortions. Could it be that there exists

unproblematic free market real-bill credit expansion in line with consumer preference and *excessive* real-bill credit expansion under central banking?

These are good and legitimate questions. The most fundamental point behind these questions is the following. What is a free market in banking, really? Is it really an unhampered free market if unbacked real-bills credit expansion is pursued? Or must not the possibility of real-bills fractional reserve banking be considered a privilege granted by the government or a criminal activity that violates general legal principles?

Following Huerta de Soto (2012), I have argued that fractional reserve banking is based on invalid or impossible contracts that would not be defended in an unhampered market[6]. Indeed, depositories of other fungible goods, such as oil mills or grain silos, are not allowed to operate with fractional reserves (Williams 1984). There is an exception—i.e., a privilege—that has been granted to banks (Köhler 2015). So, while maturity mismatching is legally unproblematic, (real bills) credit expansion is legally problematic.

Besides this fundamental legal difference, there exist also economic differences between maturity mismatching and fractional reserve credit expansion. First, with maturity mismatching the money supply in its broader sense does not increase, as no fiduciary media are created. Real-bills credit expansion, however, increases the money supply, as fiduciary media are created.

Second, while credit expansion artificially lowers interest rates by creating new fiduciary media and injecting them into the loan market, the arbitrage of free market maturity mismatching flattens the yield curve, thereby reflecting more accurately the expectations about the availability of future savings (Davidson 2014, p. 86).

Third, as we have seen, financial intermediaries that engage in maturity mismatching will be successful and the structure of

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[6] For an extensive argument, see Huerta de Soto (2012) as well as the following works: Bagus and Howden (2009); Bagus, Howden, and Huerta de Soto Ballester (2018); Bagus and Howden (2013; 2016); Bagus, Howden, and Gabriel (2015; 2017); Bagus, Gabriel, and Howden (2016; 2018); Bagus, Howden, and Block (2013); Bagus and Howden (2022). On the other hand, maturity mismatching is ethically unproblematic because there is no double ownership (Bagus and Howden 2009).

production sustainable if the social time-preference rate does not change. In contrast, fractional reserve credit expansion with constant time preference leads to an intertemporal discoordination because new fiduciary media are created and lent to entrepreneurs without a prior increase in real savings. With (real bill) credit expansion, no one gives up buying power, but the borrower receives new buying power. In contrast, in maturity mismatching, someone abstained from consumption for the short term by giving up buying power. The expectation is that this position will be taken by another saver in the future. And indeed, another saver will take this position if the social time-preference rate remains constant.

The key point is that with real-bills credit expansion, no one abstained from consumption and freed resources for new investment projects, but someone receives new purchasing power in the form of newly created fiduciary media. Interest rates fall below the level they otherwise would reach. More investment projects appear to be profitable than with higher interest rates. While consumers continue to consume in the same rhythm (as the social time-preference rate remains constant), entrepreneurs invest as if real savings had increased. The result is an intertemporal discoordination. An Austrian business cycle is set off. The structure of production becomes too capital intensive and unsustainable because there are no additional savings to maintain the additional investment projects. Only if the social time-preference rate falls and real savings increase will the new structure of production become sustainable a posteriori (Bagus and Howden 2010, p. 67). In other words, if, after a credit expansion, social time preference decreases sufficiently, there may be no bust.

Take the following example as an illustration. Imagine a fractional reserve bank that creates €1,000 of new fiduciary media and discounts a real bill from an entrepreneur. The entrepreneur's equity that was bound up in financing transportation is released. He invests in a 10-year project (it could be a three-month project; it does not change the principle) and pays his workers at the end of the first month[7]. When the workers spend their money on consumer goods,

[7] Note that this is not maturity mismatching. Equity has an infinite term. To invest equity (which now has been freed up by real-bill money creation) in a 30-year project is, therefore, not to engage in maturity mismatching.

consumer-goods prices rise relative to capital-goods prices. The profitability of shorter-term projects (in the consumer stage and stages next to consumption) rises relative to that of longer-term projects (in stages of production far away from consumption). Consequently, the 10-year project may be abandoned. If this happens systematically in the economy, a recession sets in.

However, as discussed above, there is a chance that the recession does not occur. This is because workers could increase their cash balances and hold onto the newly created fiduciary media without increasing their spending and bidding up consumer-goods prices. Or they could save the money and lend it to the company that pays down the real bill after month 3. Or they could buy the investment project from the entrepreneur. In this case, workers reduce their consumption and save all their additional fiduciary-media income. Then the investment becomes backed by real savings. Yet, if workers spend only a part of the fiduciary media created by the real-bills credit expansion on consumer goods, then consumer-good prices will rise relative to capital-good prices, manifesting itself in intertemporal discoordination.

Hayek (2009, p. 378) remarks on the conditions in which credit expansion does not trigger a business cycle:

> "It would also be necessary [in order to prevent an adjustment of the structure of production—i.e., a recession] that the increase in incomes [due to the increase in credit expansion] which would be caused by this increased spending should not lead to any further increase in the demand for consumers' goods and a further increase of their prices. Otherwise the prices of consumers' goods would always keep a step ahead of the prices of factors. That is, so long as any part of the additional income thus created is spent on consumers' goods (i.e. unless all of it is saved), the prices of consumers' goods must rise permanently in relation to those of the various kinds of input. And this, as will by now be evident, cannot be lastingly without effect on the relative prices of the various kinds of input and on the methods of production that will appear profitable."

Hayek continues (2009, p. 394):

> "All that is required to make our analysis applicable is that, when incomes are increased by investment, the share of the additional income spent on consumers' goods during any period of time should be larger than the proportion by which the new investment adds to the output of consumers' goods during the same period of time. And there is of course no reason to expect that more than a fraction of the new income [created by credit expansion], and certainly not as much as has been newly invested, will be saved, because this would mean that practically all the income earned from the new investment would have to be saved."

In other words, the new investment projects financed by credit expansion are only sustainable if all the newly created €1,000 is saved for the term of the investment project[8]. Then the investments are backed by real savings. If this happens, the proportion spent on capital goods will increase relative to the proportion of income spent on consumer goods. Consumer-good prices will fall relative to capital-goods prices, reflecting the fall in time preference. The interest rate that has been reduced because of credit expansion now has a real reason to fall. As relatively more is spent on capital goods and relatively less is spent on consumer goods, consumer goods are liberated to sustain the investment project. Entrepreneurs have more buying power and can control a larger portion of resources and dedicate them for investment purposes by taking them away from the consumer sector. In short, if workers do not save all additional income (€1,000) and only spend a small portion of it, then consumer-good prices will rise relative to capital-good prices. This relative increase in consumer-good prices is one trigger of the recession in Austrian business cycle theory (Huerta de Soto 2012). Only if all newly created fiduciary media are saved will this equal a fall in time preference and make the new projects viable. Thus, at best, real-bills credit expansion could be an anticipator of a fall in social time preference if workers save all their additional income.

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[8] Machlup (1940, p. 172) came to this conclusion even before Hayek: "In order for the production processes that were started with the aid of bank credit to be continued, it would be necessary for the volume of credit outstanding to remain at the increased level x + n, *and* for the amount of voluntary saving per period to increase by n" (emphasis in the original).

One could think that in maturity mismatching something similar happens. In maturity mismatching, the intermediary anticipates the amount of future savings that will be available, and in real-bills credit expansion the intermediary would do the very same. In the latter case the intermediary speculates on an increase in real savings.

Yet there are important differences. First, there are the legal differences mentioned above. Maturity mismatching is unproblematic from a legal point of view, while fractional reserve credit expansion violates traditional legal principles. Second, the intermediary that engages successfully in maturity mismatching does not have to assume a decrease in social time preference, because with constant time preferences the (gross) amount of available savings remains ceteris paribus the same. However, the fractional reserve bank must assume a sudden fall in time preference at the moment it expands credit. Furthermore, the bank must take into account that other fractional reserve banks might expand credit at the same time, thereby increasing the necessity of a fall in time-preference rates. Howden (2014) argues that there is an important knowledge problem involved because the more distant a bank is from the initial credit expansion, the more difficult it will be to know whether loans are backed by real savings or unbacked credit expansion.

Third, once the three-month loan is repaid in our example, the amount of fiduciary media is reduced. When the bank now expands credit again, all newly created fiduciary media have to be saved again, which implies the need for a continued fall in time preference to make the financed projects sustainable. And there is an incentive to renew the loan as it enlarges profits relative to other banks. Banks that do not renew loans and refrain from credit expansion will sacrifice profits (Huerta de Soto 2012, p. 667; Carilli and Dempster 2001).

Fourth, indeed, fractional reserve banks can increase profits by cooperating and expanding credit in the same rhythm during the boom (Bagus and Howden 2011a). In the case of maturity mismatching, financial intermediaries do not profit from cooperation and excessively mismatching maturities. If there is excessive maturity mismatching and short-term savings are not correctly anticipated, cooperating intermediaries suffer losses.

2. **Some clarifications concerning Mises's monetary theory**

2.1. *An unquestionable canon*

At this point I would like to clarify some issues raised in Rallo's book that concern more specific comments and critiques. Rallo (p. 13) suggests that Mises's (1912) book has become an "(almost) unquestionable canon" of Austrian monetary theory. This formulation seems to suggest that no critical thinking concerning Mises's monetary system is allowed or has been made.

However, Rallo's statement is a misrepresentation. There have been several critiques of Mises's monetary theory from within the Austrian school. For instance, Selgin and White (1996) have argued in the *Quarterly Journal of Austrian Economics* in favor of fractional reserve banking. Barnett and Block (2005) have argued, also erroneously, that money is a production good. I have criticized Mises for his stand on deflation (Bagus 2003) and monetary reform (Bagus 2008a).

Hülsmann (2012b, p. ix), while emphasizing the importance of Mises's work, points to critical engagement with *The Theory of Money and Credit*: "As a consequence, for many years, the *Theorie des Geldes und der Umlaufsmittel* has been read, studied, *criticized*, and developed mainly by Mises's own students. F. A. Hayek and Fritz Machlup in the interwar period, and Hans Sennholz, Murray Rothbard, and George Reisman after WWII were first in line" (emphasis mine).

Beside this criticism, Mises himself changed and adapted his monetary theory in *Human Action* (Mises 1949), a fact that is neglected by Rallo. Rallo (2019, p. 13) focuses on *The Theory of Money and Credit*, as if Mises's monetary thought did not develop later on. This is quite unfortunate. Why would you criticize an outdated version of an author's theory, if a newer, improved, and changed version exists?

Indeed, Mises's monetary thought did not end with *The Theory of Money and Credit*, neither its first nor second edition. Hülsmann (2012a) elaborates on the main differences between the first and the second edition and how Mises changed his mind on several issues. And as Gertchev (2004) indicates, Mises corrected part of

his monetary analysis in *Human Action*, where he effectively integrates value and money theory.

Among the issues on which Mises changed his opinion are the following. In *The Theory of Money and Credit* Mises considers money to not be an independent good but only to have derived utility from the goods it serves to purchase. Later this view is corrected in *Human Action*, where Mises points out that money is valued and appraised on its own merits. Moreover, the regression theorem is better founded in *Human Action*, as the valuation process is future oriented but based on past purchasing power. Thus, Gertchev (2004, p. 69) maintains that Mises develops a coherent subjectivist theory on the value of money only in *Human Action*.

There are other important differences. In *The Theory of Money and Credit* Mises still sees some advantages of fiduciary media. Mises finds the issue of fiduciary media beneficial for capital accumulation and has in general a more positive assessment of fiduciary media in his earlier book (Gertchev 2004, p. 77). In *Human Action* Mises concludes that the issue of fiduciary media has no advantage. Nevertheless, he still does see gold mining as unproductive but still a lesser evil than the issue of fiduciary media (Gertchev 2004)[9].

Furthermore, in *The Theory of Money and Credit*, Mises still has no unequivocal answer on the limitations of the issuance of fiduciary media. In *Human Action*, Mises offers a new analysis of fiduciary media that rests on his study of economic calculation, his theory of interest, and his insight that the market economy rests on the monetary system (Gertchev 2004).

Moreover, in his early work Mises regards falling prices in response to an increase in the demand for money as problematic because of certain frictions. In *Human Action* Mises makes clear that a fall in prices caused by an increase in the demand for money poses no special problem in a market economy. Moreover, the necessity of adjustment cannot be prevented by an increase in the quantity of money[10]. For entrepreneurs, the movement of the gen-

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[9] As should be clear from my above argument, especially in the section on ideal money, I do not agree with Mises on this point.

[10] Mises (1998, p. 428) writes, "But one must not say that a fall in prices caused by an increase in the production of the goods concerned is the proof of some

eral price level is not essential. What is important is the discrepancies between individual prices and costs[11].

Another change in Mises's thought is that in *The Theory of Money and Credit* he argues that there is no limit to credit expansion, while in *Human Action* Mises states that free banking puts limits on credit expansion (Gertchev 2004). Thus, Mises corrects important parts of his analysis in *The Theory of Money and Credit* in his later work, *Human Action*.

While Rallo occasionally cites *Human Action*, his focus and starting point is *The Theory of Money and Credit* as shown in his very first sentence (Rallo, p. 13). However, it is an error to reduce Mises's monetary thought to *The Theory of Money and Credit*; indeed, this early work has problems (Gertchev 2004). Mises's treatment in his magnum opus is in all relevant parts better than in *The Theory of Money and Credit*. So, Rallo's focus on *The Theory of Money and Credit* makes no sense. He should have directed his critique at *Human Action* instead.

2.2. *The definition of credit money*

Rallo's (p. 21) presentation of Mises's definition of credit money appears to be incorrect. Rallo argues that credit money is a right to collect money proper, whose value does not derive from the expectation of this future collection but from its present utility as a means of exchange. He gives the example of a 10-year government bond that is used as a means of exchange independently from the expectation of payment. However, Mises would rather consider an instrument such as a very liquid government bond that is used as a means of payment as a secondary medium of exchange. In fact,

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disequilibrium which cannot be eliminated otherwise than by increasing the quantity of money. … It is possible by means of an increase in the quantity of money to delay or to interrupt this process of adjustment. It is impossible either to make it superfluous or less painful for those concerned."

[11] Mises (1998, p. 466) writes, "[Entrepreneurs] do not heed the general movement of all prices. All that matters for them is the existence of discrepancies between the prices of the complementary factors of production and the anticipated prices of the products."

Mises defines secondary means of exchange as goods of a high marketability such as first-class bonds (1998, p. 459). The difference between money substitutes (such as fiduciary media) and secondary means of exchange is that the latter cannot be redeemed on demand at par[12].

As Howden (2023, p. 166) points out, "The difference between money and other assets is one of kind, and not only of degree. . . . Money is demanded for its uniqueness. Money [as well as perfect monetary substitutes] is the only asset that combines both value attributes —on demand availability at par value— in one package."

For Mises, a credit money is a generally accepted medium of exchange that evolved out of monetary substitutes that gave the right to a daily maturing claim. But then redemption was suspended up to an undetermined future date. Nevertheless, these money substitutes continue to be used as media of exchange (1998, pp. 425-26). There is still hope that in the future redemption will be resumed. If this hope dies, then we have fiat money.

On credit money, Mises writes (1998, p. 426):

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[12] There is an unsurmountable gap between money (money substitutes) and secondary media of exchange.

Therefore, the expression "moneyness" used by Hayek (1999, p. 162) in his *Denationalization of Money* to refer to different degrees of money is one of the most unfortunate neologisms in economics. Hayek refers to Machlup (1970, pp. 220, 225) as the first user of the term "moneyness." However, Hayek and Machlup seem to mean slightly different things. Hayek's expression caused much damage to economic theory, as it is the source of confusion that has led to important theoretical errors. The expression is the source of theoretical misconceptions such as the Feketian Real Bills Doctrine, which holds that all financial assets have a certain moneyness, fiduciary media being one of them. Yet money is not an adjective. If there existed a monetary continuum, the money supply would not be determinable, and money neither scarce nor a good (Hülsmann 1996, p. 152). One should also remember that the condition for "moneyness" is the existence of money. For an excellent critique of the concept of "moneyness," see Mousten Hansen (2021). Similarly, Howden (2023, p. 166) states, "Money is … not just an asset on the liquidity spectrum or value scale. Instead it is an asset with definite qualities that differentiate it categorically from other assets."

Money is not just the most liquid good. The liquidity of all other goods can be inferred by the easiness of converting them into money. The easier it is to convert an asset into money, the more liquid it is. Money is the basis and reference for liquidity. Similarly, money perfectly preserves nominal wealth. The capacity of other assets to nominally maintain wealth is tied to money. Money is the basis and reference.

> "Now, as redemption was suspended, the maturity date postponed to an undetermined day, and consequently doubts about the solvency of the debtor or at least about his willingness to pay emerged, they lost a part of the value previously ascribed to them. They were now merely claims, which did not bear interest, against a questionable debtor and falling due on an undefined day. But as they were used as media of exchange, their exchange value did not drop to the level to which it would have dropped if they were merely claims."

Thus, in contrast to Rallo's presentation, the possibility and expectation of payment in money proper is still essential for credit money. If that possibility ceases, the credit money turns into fiat money.

2.3. *Are monetary substitutes present goods?*

Rallo (p. 26) maintains that Mises contradicts himself in regard to monetary substitutes. Mises (1953, p. 52) first says that monetary substitutes are claims to other goods and not goods themselves, and later Mises (1953, p. 272) writes that bank notes are present goods[13]. As bank notes are monetary substitutes, it is a contradiction to say that they are not goods (but claims) and present goods at the same time.

Mises would have been more consistent, indeed, if he had stated that fiduciary media are regarded by their users as perfect substitutes for present goods (even though they are not the goods themselves but just a claim to them). Thus, money substitutes act as if they are present goods (and are claims to present goods).

As discussed above, financial assets imply an exchange of present goods for future goods. In contrast, money is a present good

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[13] I point again to a crucial statement from Mises (1953, p. 272): "A person who accepts and holds notes, grants no credit; he exchanges no present good for a future good. The immediately-convertible note of a solvent bank is employable everywhere as a fiduciary medium instead of money in commercial transactions, and nobody draws a distinction between the money and the notes which he holds as cash. The note is a present good just as much as the money."

(Huerta de Soto 2012, p. 696, fn. 141). It satisfies human desires in the present. Fiduciary media are considered perfect monetary substitutes. Not for nothing M1 today includes both physical currency and demand deposits.

Financial assets imply that someone has given up present goods (money) and has received in return the promise of future goods. A bond, for instance, is a financial asset representing an exchange of present goods for future goods. When money is transferred to the issuer of the bond, the issuer receives money and purchasing power while the purchaser gives it up. If the bond were also considered money and a present good by its bearer, then we would have an inflationary duplication of money in circulation (Huerta de Soto 2012, p. 696, fn. 140). This is exactly what happens with fractional reserve banking when fiduciary media are considered perfect monetary substitutes.

2.4. *Was Mises a supporter of Friedman's quantity theory?*

Rallo (pp. 45-46) makes the argument that Mises reached the same conclusions as Milton Friedman in his Q*uantity Theory of Money—a Restatement* (Friedman 1956). It is strange to put Mises close to Milton Friedman in monetary matters since Mises (1998, p. 402) was one of the most vocal critics of the mechanistic quantity theory of money, which Mises criticized for its holistic approach and the proportionality between changes in the money supply and changes in prices.

Rallo argues that Mises, like Friedman, assumed the stability of the demand for money, the independence of the supply of and demand for money, the determination of interest rates by nonmonetary factors, and a negligible influence of interest rates on the demand for money. It is true that Mises analyzed the effects of changes in the demand of and supply for money in ceteris paribus terms. But his ceteris paribus analysis does not imply that he thought that the demand for money must always be stable, as Rallo seems to suggest.

It is ironic that Rallo criticizes Mises for supposedly assuming independence between the supply of and demand for money when

Rallo's own argument implies that the demand for fiduciary media is independent of the supply of money. The Real Bills Doctrine maintains that real-bill discounting is determined by real causes. However, as mentioned above, by increasing the supply of loans and reducing the interest rate, fractional reserve banking can increase the demand for loans. That is, the demand for loans is not independent of the supply of fiduciary media and the interest rate.

It is also true that while Mises mentions that holding money has costs in the form of forgone interest (1998, p. 460), he does not analyze the consequences in detail.

It is not true, however, that Mises does not consider monetary factors as determinants of the interest rate[14]. He states that the gross market rate of interest has several components: originary interest, determined by the social time-preference rate; an entrepreneurial component; a risk premium; and a price premium (1998, pp. 535-42). And the price premium is, of course, influenced by monetary factors. Mises explicitly analyzes the "effects of changes in the money relation upon originary interest." It is one of Mises's main points that monetary inflation affects the gross market rate of interest, leading to the Austrian business cycle (1998, pp. 547-62). Therefore, it is not true that Mises concludes that interest rates are determined by nonmonetary factors (only). Moreover, Mises was a fierce critic of the equation of exchange (1998, p. 410; 1953, pp. 143-45), which Friedman defended.

2.5. *Money: capital good or medium of exchange?*

Mises (1953, pp. 83-84) argues that money is not a capital good. It is neither a consumer good nor a producer good. It facilitates exchange. Rallo argues contra Mises that money is a capital good. This ties into his argument that fiduciary media are financial

[14] Murphy (2021, p. 108) states that Mises changes his definition of the natural rate of interest. While in *The Theory of Money and Credit* the natural rate of interest is determined by the supply of and demand for real capital without the mediation of money (pp. 306-7), in *Human Action* the originary rate of interest stems from the difference between the valuations of present and future goods.

assets that help to produce goods, like other capital goods. Rallo thereby follows a line of argument defended also by Walter Block and Bill Barnett (Barnett and Block 2005), who argued before him that money is a capital good.

There are important differences between capital goods and money. An increase in well-employed capital goods increases overall production of goods and services. In contrast, the functions of money qua money are to facilitate exchanges and reduce uncertainty. These are money's services. The existence of more money does not mean that exchanges are facilitated more efficiently or that uncertainty is decreased and real production soars. When the money supply increases, prices will tend to increase. If a zero is added to all monetary units, then the money supply increases tenfold. However, exchanges do not become easier. Prices just rise. And real cash balances do not increase either. Therefore, there is no reduction of uncertainty[15].

A capital good is an intermediate stage in the production process that is necessary to attain the final end. Money is not necessary to attain the final end in the sense that without money, the final end could not be reached. Indeed, roundabout production is also possible in a barter economy. The introduction of money merely facilitates exchanges and facilitates a more complex structure of production.

Moreover, capital goods are consumed during the production process. They are transformed into consumer goods. However, money, while facilitating the coordination of production, does not disappear. It is not transformed into a consumer good.

In addition, Salerno (2020) reminds us that the market prices of capital goods tend toward the sum of the discounted income flow they produce. For its participation in the production process, each capital good is paid its discounted marginal value product (DMVP). What about money? Is it not paid its DMVP? Indeed, money is not paid at all. In fact, when all capital goods and factors of production are paid, what is left over is profit.

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[15] Of course, the money-stuff may be a capital good. For instance, gold may be used in production. Then, the money-stuff is a capital good. But money qua money is a medium of exchange and its increases do not increase production.

Lachmann (1978, pp. 87-88) supports Mises in this matter:

> "Money is an asset, but it is not a capital good like other elements of a production plan. That it is not, becomes clear as soon as we ask ourselves why and when it is required for carrying out a production project. A cash balance is necessary to buy labour, and current services of capital goods not physically controlled by the planner (water, electric power) during the plan period. But if, as we have to, we regard these services themselves as 'factor services', i.e. elements of the plan, we cannot at the same time treat the money that pays for them as a capital good: we should be guilty of double counting."

Money is the general medium of exchange that facilitates production, but it is not a capital good.

2.6. *The regression theorem*

Rallo criticizes Mises for his regression theorem. Mises argues that a commodity, before it starts to have monetary demand, must have a price in the barter economy; i.e., it must have a nonmonetary demand. Furthermore, Mises claims that the demand for money today is based upon yesterday's purchasing power of money. Rallo criticizes these two main points.

First, Rallo asserts (p. 138) that the utility of money consists in its liquidity and that a good could be demanded as money even if it has no past purchasing power. According to Rallo what really matters is the expected stability of the value of the future money (p. 108) and not its past price.

Second, Rallo adds that the demand for money today does not necessarily depend on its past purchasing power, as the regression theorem states, but rather on the expected stability of the value of money (liquidity). Rallo even states that gold could have become money even if it had had no nonmonetary use value—i.e., if gold had not been a commodity with a nonmonetary demand.

Serrano (2022) dedicates an entire article to addressing Rallo's arguments against the regression theorem, showing in detail Rallo's errors.

Serrano raises the reasonable question of how it can be that a good not having purchasing power could have stable value. How can one detect whether a good has stable value (high liquidity) if the good has no price? It is easy to see that such an endeavor is impossible. A good must have purchasing power before value stability can be established. Without knowing a good's (past) price one cannot establish that its value has been stable. Thus, the demand for money is based on its past purchasing power. Money's past purchasing power is the starting point for the expectation of money's future purchasing power. Without such a starting point, the expectation of money's price would be free floating.

Serrano also addresses the argument that gold could have become money without a nonmonetary use value. He points out that without nonmonetary use value, gold would not have been a good but just a thing. The qualities of gold, such as scarcity, transportability, and production cost, would have been unknown. Gold had to be a commodity with known properties before it could have monetary demand. A good must have nonmonetary value to become money.

Last, it must be clarified that Mises's regression theorem is not about historical necessity or determinism. It merely states that the demand for a good as a medium of exchange must be based on a certain nonmonetary utility. And the demand for money is based on experience with the past value of money.

Conclusion

Although he himself is a supporter of the dead horse of fractional reserve banking, George Selgin in 1989 made the following forward-looking statement concerning the Real Bills Doctrine: "It would be a mistake to think of the real-bills doctrine as a 'dead horse.' The dead horses of economic theory have a habit of suddenly springing back to life again, which is why it is necessary to beat them even when they appear lifeless" (Selgin 1989, p. 489).

Rallo's *Una crítica a la teoría monetaria de Mises* is one such sudden revival of the real-bill dead horse. In his idiosyncratic version of the banking school and with references to Antal Fekete, Rallo

combines the "needs of trade," the "law of reflux," and the Real Bills Doctrine to attack the currency-school approach of Ludwig von Mises.

The flaws and misconceptions of Rallo are numerous and related to the fundamentals of economic science. Like Keynes, from the equality of assets and liabilities on the balance sheets of banks Rallo deduces that fractional reserve banks are engaged in genuine credit intermediation. He confuses the holding of fiduciary media with the granting of credit and genuine savings.

Rallo brings forward three neoclassical arguments in favor of a real-bills fractional reserve banking system. First, such a system would prevent a cash-building deflation. Price deflation would bring coordination problems because of price rigidities. Second, it would achieve price stability, which would be advantageous because it would make entrepreneurial forecasting easier. Third, it would reduce the unnecessary resource costs of a pure metallic standard.

All three arguments fail. (1) It is not only that cash-building deflation has an important social function that is disturbed by the production of fiduciary media. It is also unnecessary to fight cash-building deflation with increases in fiduciary media because prices can and do adjust in accordance with the needs and preferences of market participants. Ignoring price adjustments and focusing on quantity adjustments is typical of Keynesian thinking. A mechanistic view of the pricing process induces Rallo to believe that price rigidities cause problems, even though prices are dynamically predicted, renegotiated, and adjusted all the time. The changes in relative prices in a time of cash-building deflation deliver important price information. Stabilization through injections of additional money distorts that information.

(2) A price-stabilization policy in response to an increase in the demand for money is destabilizing because it lowers interest rates artificially and leads to an unsustainable boom. Moreover, the origin and evolution of money do not come with price stability but usually with strong increases in the purchasing power of the good that evolves into money.

(3) Any monetary standard comes with subjective costs of maintenance. Market participants must decide whether they are willing

to bear these costs. A commodity standard chosen by freely interacting individuals in a free market cannot be said to have too high resource costs from a scientific point of view.

Rallo believes that the supply of money must be regulated in such a way that the supply of money follows the demand for money. Arguing in the aggregate terms of the monetary-equilibrium approach, he cannot appreciate the microeconomic adjustment processes that come along with individual changes in the demand for money.

He also invokes unrealistic neoclassical instruments and concepts such as the elasticity and inelasticity of demand and supply curves and the constant marginal utility of money. He contends that the flexible money supply of a real-bill fractional reserve banking system allows the money supply to adjust to the aggregate demand for money and to stabilize the general price level. Yet, when the demand for money increases, the intensity of the increase may vary among individuals. Individuals will use subjective strategies to attain higher cash balances by abstaining from buying specific goods and services or by increasing their sales of specific goods and services. This implies changes in relative prices and price adjustments throughout the entire structure of production. The demand for money never rises in the same proportion for all individuals.

The change in the demand for money may also come along with a change in the social rate of time preference. All these relative price changes and adjustments remain unseen and hidden when looking at the aggregate supply of and demand for money. Besides, increases in the money supply through the production of fiduciary media do not reach those individuals who demand a higher cash balance directly.

The use of orthodox neoclassical instruments explains why Rallo employs well-known arguments that have been employed to justify the intervention of the government in monetary affairs. The neoclassical critics of Austrian monetary-reform proposals claim that cash-building deflation would cause problems because of price rigidities and that, therefore, the central bank must ensure that the money supply increases. Critics also argue that there is a lack of stability in market processes and that the government is

needed to stabilize the market system. Moreover, critics claim that a free market money entails too high resource costs. While Rallo does invoke all three arguments, he does not present the government as the solution. Rather he sees the solution in a banking system that discounts real bills (and operates with the government privilege of holding fractional reserves).

The Real Bills Doctrine is a quite old dead horse. The idea of connecting the money supply to real output can be traced back to John Law and Adam Smith. The anti-bullionists developed the Real Bills Doctrine further and were subjected to demolishing critiques. The most important one points out that the Real Bills Doctrine links the money supply to a nominal variable—namely, the market value of consumer goods, which is itself not independent from the money supply. When the Real Bills Doctrine was common banking practice, numerous banking crises occurred. The Real Bills Doctrine also involves an objective turn away from subjective-value economics. It distinguishes between productive credit expansion (based on real bills) and unproductive or speculative credit expansion (based on securities).

Analyzing Rallo's own version of the banking theory as presented in his critique of Mises, I found that he fails to distinguish between titles to present goods and titles to future goods. Both are financial assets for him. His dichotomy of real assets and financial assets does not permit him to see the problems inherent in fractional reserve banking. He declares fiduciary media to be financial assets. Yet fiduciary media are titles to money. And titles to present goods may have the same function as present goods themselves, as is the case for fiduciary media, which function as perfect substitutes for money proper.

The issue of fiduciary media gives rise to a double availability and intertemporal price distortions when the fiduciary media are injected into credit markets first. Rallo's classification, however, makes him believe that holding financial assets is a form of saving. And as he regards fiduciary media as financial assets, he arrives at the conclusion that an increase in fiduciary media entails an increase in savings. Yet money is not a financial asset. And as fiduciary media are perfect money substitutes, fiduciary media are not financial assets either. While buying financial assets such as stocks

and bonds entails giving up purchasing power (and the exchange of present goods for future goods), holding fiduciary media does not involve giving up purchasing power.

Holding cash is not saving even though economists such as John Maynard Keynes, George Selgin, and Juan Ramón Rallo fall for this error. Saving is the reduction of consumption spending and manifests itself in consumer goods that can be used to sustain the owners of the factors of production involved in the production of capital goods. Savings must be available until the very end of the production process and not only to the very end minus 30 days (which is a term of real bills).

The main insight of capital theory is that production takes time. The owners of the factors of production must be sustained during the whole production process. This insight is one of the main differences between the Austrian school and macroeconomic schools such as the Keynesians, the monetarists, and the defenders of the Real Bills Doctrine.

Holding fiduciary media does not create more consumer goods. The demand for cash holdings (demand for money) may increase and real savings fall. In other words, an increase in the demand for money is compatible with an increase in time preference, while the defenders of the Real Bills Doctrine interpret it as an increase in savings.

Also telling in the neo-banking school's analysis is the artificial distinction between the discount rate and the interest rate. This allows the neo-banking school to argue that real-bill credit expansion only lowers the discount rate or short-term interest rates and not long-term interest rates, giving support to the claim that with only the right kind of credit expansion there would be no distortions in the structure of production. However, credit markets are interconnected and the injection of fiduciary media into credit markets affects the whole yield curve, also lowering long-term rates. It is not the quality or type of loan that is created by credit expansion that is essential, but the quantity of credit created. Credit always finds its way to investment projects that are seen as the most profitable.

As another problem, the neo-banking school and Rallo subscribe to the error of the "needs of trade" argument. Yet the banking

system is not just passively responding to increases in the production of real goods but may endogenously affect the demand for loans by lowering interest rates or weakening credit criteria. The demand for loans is not independent of the interest rate.

Rallo does not only fail to see the problems of real-bill fractional reserve banking. He also erroneously believes that maturity mismatching is a problem in a free market. Yet the maturity of savings is not essential, as there can always be short-term savers replacing each other. What is essential to sustain production is the quantity of gross savings. Maturity mismatching can support a sustainable structure of production and be dynamically efficient. To estimate the future availability of savings is indeed an important entrepreneurial activity. In the practice of maturity mismatching, someone is saving and giving up purchasing power for the short run, while with real-bill credit expansion no one is giving up purchasing power and the money supply increases.

To end on a positive note: Rallo's work portrays well the differences between Austrian monetary theory as developed by Mises and the banking-school theory as developed by Fekete and Rallo himself. It has the merit of providing a well-written summary of Mises's *Theory of Money and Credit*, with some misrepresentations as we have discussed. The book nudges the reader to scrutinize his arguments. It has the virtue of obliging the critical reader to go deeper and reexamine some basic concepts, such as the nature of money, the demand for money, interest rates, price deflation, real savings, and capital theory. Unfortunately, the book is wrong about each and every one of these basic concepts.

Rallo's theory suffers from important flaws and shortcomings regarding these concepts. Most importantly there is a misunderstanding or neglect of capital theory. There is no need for a flexible money supply. Indeed, a flexible money supply in the sense of the Real Bills Doctrine inevitably brings forward forces that cause a business cycle. The crucial point is that real-bill credit expansion creates purchasing power without the renunciation of purchasing power by someone else. Without prior savings the investments that follow this newly created purchasing power are destabilizing.

Thus, Rallo's theory is erroneous, and Mises's and the Austrians' money, banking, and capital theories stand firm. It is the

revival of the real-bill dead horse that obliged us to reexamine, clarify, and elaborate some of the theory's basic elements.

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The author declares that it has no conflict of interests.

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