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**Article**

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# REDISCOVERING MISES-HAYEK MONETARY AND BUSINESS CYCLE THEORY IN LIGHT OF THE CURRENT CRISIS: CREDIT EXPANSION AS A SOURCE OF ECONOMIC BOOM AND BUST

MARCIN MROWIEC\*

**Abstract** The article starts with a brief description of Mises' monetary theory, with emphasis on the Misesian differentiation of two kinds of credit: commodity and circulation credit, and with the description of the impact of circulation credit expansion on the business cycle. Further on it is described how Mises' insights constituted the kernel of Austrian Business Cycle Theory, and how the same observations on the nature of credit constituted the kernel of the Chicago Plan (though Mises' views on the nature of credit led him to different conclusions than it led the authors of the Chicago Plan), and how this plan is being "rediscovered" now. The following sections deal with observations of one of the preeminent current macroeconomic researches, Mr. Claudio Borio, on the elasticity of credit as the source of the current crisis, and on the importance of the financial cycle in analysing the current economic crisis. The author of this text demonstrates that Austrian Business Cycle Theory gave the same answer regarding the sources of economic crises that now modern macroeconomic theory seems to be approaching, and that the postulates for successful financial cycle modeling are already included in the ABCT. Finally, some observations on the current crisis, as well as proposals of avenues of further research are proposed.

**JEL Classification:** E30, E44, E50, G10, G20, G28

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## INTRODUCTION

The recent financial crisis has undermined well-established convictions and paradigms within the "mainstream" macroeconomic profession, triggering an intense search for better "analytics", as the models dominating so far largely turned out insufficient not only in predicting the crisis, but even in explaining it. In searching for new theories attention is sometimes turned to past ideas. One of them are the monetary and business cycle theories of Ludwig von Mises, which were subsequently refined by Friedrich von Hayek and other economists of the Austrian School of Economics (ASE). This big picture overview focuses on explaining the kernel of Austrian Business Cycle Theory (ABCT), which is the distinction between

the two types of credit (commodity credit and circulation credit) and how this distinction applies to two types of banking activity: negotiation of credit and issuance of credit, and how these findings are being "rediscovered" in current monetary theory. Mises (1981) emphasized 101 years ago (in 1912 his "Theory of Money and Credit" was first published) that understanding of this distinction is the key to understanding banking theories (p. 297). This lesson has been forgotten for a long time, but now is being rediscovered. This can be seen in the renewed interest in "the Chicago Plan", where the basic idea is that monetary and credit functions of the banking system should be separated. This can also be seen in calls from renowned BIS economist, Claudio Borio, for better understanding monetary aspects of the economy,

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where he directly points to credit creation as one of the least recognized features of the economy within the body of current mainstream macroeconomic theory, and proposes directions of research that had been long ago recognized within the Austrian School tradition. This paper discusses the above mentioned themes in this order, and finally offers some general remarks on the further directions of research with regard to macroeconomic theory in general, and in the context of the current crisis in particular.

## LUDWIG VON MISES' MONETARY THEORY. EXPANSION OF FIDUCIARY MEDIA AS THE PRINCIPAL ENGINE OF THE BUSINESS CYCLE

Ludwig von Mises built his theory of money and credit on the fundamentals set by Karl Menger. Menger (1976) noted that money arose as an "invention" of the free market: as the number of goods in a developing economic system increases, and as it becomes increasingly difficult to use barter to exchange goods (double coincidence of the demand problem), people realize that some goods are more marketable than others, and start using them as intermediary goods. These goods are used primarily by those who deliver less marketable goods, but finally everyone switches to them for exchange. Demand for these goods increases in a positive feedback loop, and they become the general medium of exchange - they become money. In Mises' theory money is defined as the most marketable commodity, and at the same time being the medium of exchange is the most fundamental and essential function of money. In Mises' approach all other functions (facilitating credit transactions, general medium of payment) are secondary - primary is that of being the medium of exchange:

The simple statement, that money is a commodity whose economic function is to facilitate the interchange of goods and services, does not satisfy those writers who are interested rather in the accumulation of material than in the increase of knowledge. Many investigators imagine that insufficient attention is devoted to the remarkable part played by money in economic life if it is merely credited with the function of being a medium of exchange; they do not think that due regard has been paid to the significance of money until they have enumerated half a dozen further "functions"—as if, in an economic order founded

on the exchange of goods, there could be a more important function than that of the common medium of exchange (Mises, 1981, p. 47).

Having defined money, Mises turns to the definition of credit. In his approach credit is defined as the exchange of present goods for future goods. He defines two - very distinct - kinds of credit: "commodity credit" and "circulation credit". Commodity credit is that kind of credit that

imposes a sacrifice on that party who performs his part of the bargain before the other does—the forgoing of immediate power of disposal over the exchanged good, or, if this version is preferred, the forgoing of power of disposal over the surrendered good until the receipt of that for which it is exchanged. This sacrifice is balanced by a corresponding gain on the part of the other party to the contract—the advantage of obtaining earlier disposal over the good acquired in exchange, or, what is the same thing, of not having to fulfill his part of the bargain immediately. In their respective valuations both parties take account of the advantages and disadvantages that arise from the difference between the times at which they have to fulfill the bargain. The exchange ratio embodied in the contract contains an expression of the value of time in the opinions of the individuals concerned. (Mises, 1981, p. 296).

This type of credit would be used in a barter economy and corresponds with the first kind of bank activity – the negotiation of credit through the loan of borrowed money, with banks earning their profit from the difference between the rates of interest that they pay and that which they receive. This is what is usually associated with banking business by non-specialists. The second type of credit, called "circulation credit", has to do with issuance of fiduciary<sup>1</sup> media in the banking system. This group of credit transactions

is characterized by the fact that in them the gain of the party who receives before he pays is balanced by no sacrifice on the part of the other party. Thus the difference in time between fulfillment and counterfulfillment, which is just as much

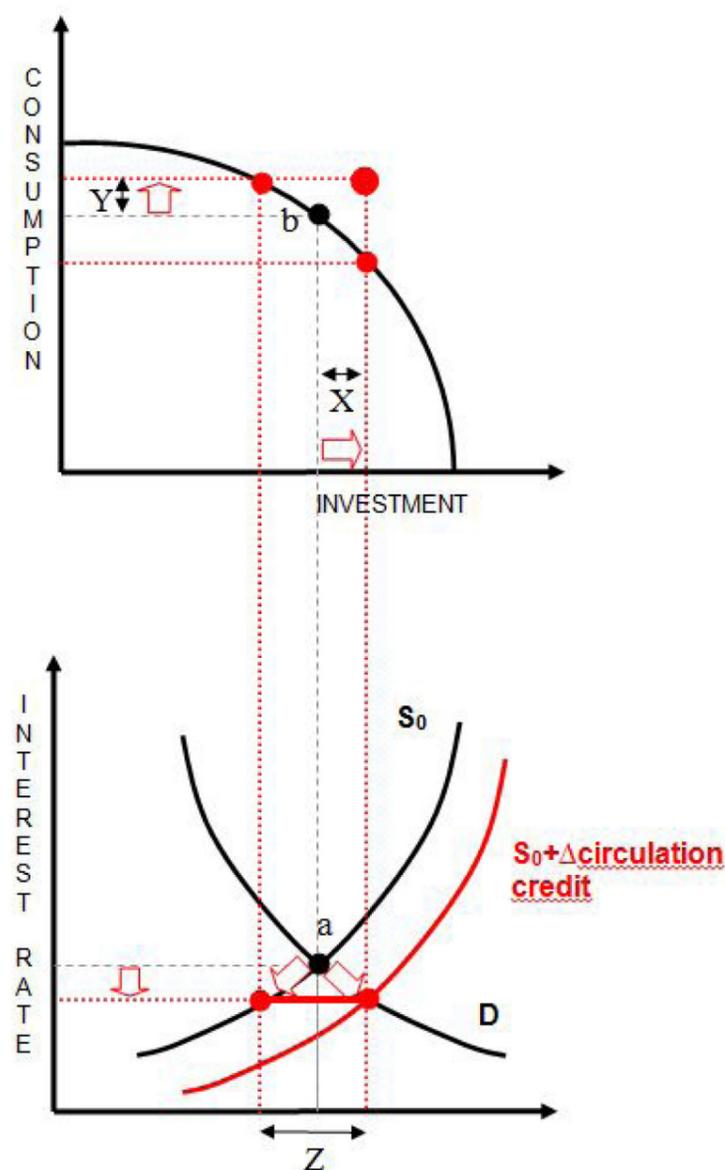
<sup>1</sup> Fiduciary media consist of a proportion of perfect money substitutes which a bank issues but does not fully back by physical monetary units (i.e. gold or paper money) in their vaults (de Soto, 2012, p. 187).

the essence of this kind of transaction as of the other, has an influence merely on the valuations of the one party, while the other is able to treat it as insignificant. (Mises, 1981, p. 297).

Mises summarizes the difference between the two kinds of credit in the following way:

In the first kind of credit transactions, what is surrendered consists of money or goods, disposal over which is a source of satisfaction and renunciation of which a source of dissatisfaction.

Chart 1. Monetary expansion and its impact on interest rate, saving, investments and total output



Source: Garrison (2001), Garrison (2006, p 45)

In the credit transactions of the second group, the granter of the credit renounces for the time being the ownership of a sum of money, but this renunciation (...) results for him in no reduction of satisfaction. If a creditor is able to confer a loan by issuing claims which are payable on demand, then the granting of the credit is bound up with no economic sacrifice for him. He could confer credit in this form free of charge, if we disregard the technical costs that may be involved in the issue of notes and the like. (Mises, 1981, p. 297)

In essence, then, Mises is describing the difference between savings as they would take place in a barter economy (commodity credit) and (one of the ways of) financing, as it takes place in the money economy, where “circulation credit” can be extended at no cost and can finance investment in a way not related to real savings. In Mises’ theory, as well as later on in the ASE tradition, this ability of the banking system to create credit “free of charge” was considered the principal source of business cycles<sup>2</sup>. Mises (2007, p. 369) notes that commodity credit cannot be increased at will, and the only mechanism of credit expansion is the expansion of fiduciary media. The basic mechanism of propagation of the business cycle, according to Mises, works through credit expansion, which artificially lowers interest rates, which in turn sends conflicting signals to consumers and to entrepreneurs. Graphical representation of this mechanism is shown on Chart 1. The analysis starts with the loanable funds market (lower pane), where the interaction of time preferences of the members of a given society sets the (pure, natural) interest rate<sup>3</sup>. Mises emphasized that the natural interest rate is set exclusively by time preferences of members of a given society, and solely by this factor (Mises, 2007, p. 477). He used one of the definitions of Wicksell, that the

natural interest rate “is the same interest rate that would be set by demand and supply in a situation of absence of money, when all loans would have the form of real capital goods”. (Wicksell, 1898, p. 102). By definition, such a natural rate, set by the interactions of demand and supply for loanable funds (point ‘a’ on the lower pane in Chart 1), mirrors the balancing point between propensity to consume and propensity to invest, and keeps investments and consumption in balance (point ‘b’ on the upper pane of exhibit 1). Point ‘b’ finds itself on the production possibilities frontier (PPF), i.e. it represents a sustainable combination of consumption vs. investment, regulated by the natural interest rate, i.e. by the time preference of the society. When fiduciary media are issued<sup>4</sup>, the lowered interest rate shifts the funds’ supply curve ( $S_0$ ) down ( $S_0 + \Delta$  circulation credit), and starts sending conflicting signals: entrepreneurs, seeing the lower interest rate, are induced to think that consumers have refrained from consumption (in order to be able to consume more in the future) and that there are resources to be invested. This “additional” investment, induced by issuance of fiduciary media, is shown as section ‘X’ on the upper pane. At the same time, consumers see that the interest rate has fallen, and they interpret it as lowered demand for loanable funds, and hence decide to spend more than they would have spent otherwise (section ‘Y’ in the upper pane). Therefore, with the interest rate lowered with fiduciary media issuance (credit expansion), a boom starts both in the consumer-related sectors of the economy (higher demand, higher production, higher demand for labor) as well as in the investment-related sectors of the economy<sup>5</sup> (higher investments thanks to a lower interest rate, and hence projects that would not be profitable if

<sup>2</sup> Kirzner notes that Mises did not intend to create a business cycle theory – the discussion of the business cycle first appeared at the final pages of *Theory of Money and Credit* (1981[1912]), and it was a direct consequence of rejection of the concept of neutral money, and appeared “almost as an accidental byproduct” of his research on banking (Kirzner, 2001, p. 140). Mises developed this idea in “Monetary Stabilization and Cyclical Policy” (Mises, 1928) and in “Human Action” (Mises, 1949). The theory was further developed by Friedrich von Hayek in “Prices and Production” (1931), “Monetary Theory and the Trade Cycle” (1933) and in “Pure Theory of Capital” (1941).

<sup>3</sup> The reasoning presented here relies on Garrison (2001), which is a recommended reading on the modern exposition of ABCT.

<sup>4</sup> Garrison notes that the various tools used by central banks (regulation of the reserve ratio level, setting the level of the discount rate, open market operations) have one key characteristic: they are “alternative ways of lending money into existence” (Garrison, 2001, p. 67).

<sup>5</sup> This article focuses on the mechanism of fiduciary media creation and its impact on monetary dynamics, as well as parallels between Mises’ theory and later theoretical works in the realm of monetary theory. However, the Austrian Business Cycle Theory (ABCT) offers many more insights into consequences of money expansion. One of them is the impact on the structure of productive capital in the economy – see e.g. Skousen (1990), and Garrison (2001) for general reasoning and Robbins (1934) and Rothbard (2000) for detailed analysis of the US Great Depression using the paradigm of the ABCT.

interest rates stood at natural level, are profitable when interest rates are lowered). The scale of the additional demand created by the issuance of fiduciary media can be represented as the sum of sections 'X' and 'Y' (upper pane), which in the lower pane is represented by section 'Z', and represents the scale of credit expansion over a situation with lack of this expansion<sup>6</sup>. However, this process is at odds with the unchanged time preference, and ultimately doomed to stop, as entrepreneurs encounter scarcity of real and human capital that is more constraining than implied by the patterns of wages, interest rates and prices that prevailed in early phases of the boom. Production falls to lower levels than the production possibilities frontier would suggest, a recession starts. Finally, investments have to be financed with savings, but part of them will be "forced savings", e.g. through dilution of the purchasing power of money via inflation<sup>7</sup>.

### CREDIT EXPANSION AS SOURCE OF MACROECONOMIC RISKS – RE-DISCOVERY OF MISESIAN INSIGHTS

#### HENRY SIMONS AND "THE CHICAGO PLAN REVISITED"

Some of the key findings of Mises' monetary theory are being rediscovered now, in the aftermath of the crisis. "The Chicago Plan" is a very interesting concept in this respect. Originally it was formulated, discussed and widely supported amid US economists in the 1930s. What is interesting is that this idea has been re-discovered very recently (August 2012), as the IMF published a comprehensive working paper by Benes and Kumhof (2012): "Chicago Plan Revisited". The authors thoroughly examined the ideas from the thirties, and verified them econometrically with the aid of "a state of the art monetary DSGE model of the US economy". They found strong numerical support

<sup>6</sup> Hayek stated that "If it is admitted that, in the absence of money, interest would effectively prevent any excessive extension of the production of goods, by keeping it within the limits of the available supply of savings, and that an extension of the stock of capital goods which is based on a voluntary postponement of consumers' demand into the future can never lead to disproportionate extensions, then it must also necessarily be admitted that disproportionate developments in the production of capital goods can arise only through the independence of the supply of free money capital from the accumulation of savings; which in turn arises from the elasticity of the volume of money" (Hayek, 1966, p. 92).

<sup>7</sup> An interesting discussion of these aspects can be found in Garrison (2004).

for the key claims<sup>8</sup> proposed by the original Chicago Plan. The key assumption of this plan was separation of the monetary and credit functions of the banking system, first by requiring 100% backing of deposits by government-issued money, and second by ensuring that the financing of new bank credit can only take place through earnings that have been retained in the form of government-issued money, or through the borrowing of existing government-issued money from non-banks, but not through the creation of new deposits, ex nihilo, by banks (Benes & Kumhof, 2012, p. 4).

One of the key aims of the proposed changes was that banks would become what many erroneously believe them to be today, pure intermediaries that depend on obtaining outside funding before being able to lend. Having to obtain outside funding rather than being able to create it themselves would much reduce the ability of banks to cause business cycles due to potentially capricious changes in their attitude towards credit risk (Benes & Kumhof, 2012, p. 5)

These are exactly the observations made by Mises exactly 100 years earlier, now being rediscovered – with the fundamental difference being that the Chicago Plan postulates state control of money, whereas Mises postulated return to the gold standard, emphasizing that the main thing is that the government should no longer be in a position to increase the quantity of money in circulation and the amount of checkbook money not fully – that is, 100-percent – covered by deposits paid in by the public. No backdoor must be left open where inflation can slip in. No emergency can justify a return to inflation. (Mises, 1981, p. 481) Benes and Kumhof (2012) also touch upon a very interesting topic on the lack of equality between the notions of "bank deposits" and "savings". This is an issue that stems directly from the Misesian analysis described before. If banks can grant (circulation) credit "with no economic sacrifice" (i.e. without savings that would have to be made in a non-monetary economy), then this type of deposit cannot be considered "savings" in the proper macroeconomic

<sup>8</sup> Fisher (1936) saw four key advantages of the plan: (1) much better control of credit cycles, as banks would be prevented from credit creation during booms, and credit destruction during contractions, (2) elimination of bank runs in a system of 100% reserve backing, (3) reduction of interest rate burden on government finances and reduction of government debt – government would issue money directly, at zero cost, (4) reduction of private debts, as money creation would no longer require debt creation.

sense of this notion. Benes and Kumhof note that bank liabilities are not macroeconomic savings, even though at the microeconomic level they can appear as such. Savings are a state variable, so that by relying entirely on intermediating slow-moving savings, banks would be unable to engineer the rapid lending booms and busts that are frequently observed in practice. Rather, bank liabilities are money that can be created and destroyed at a moment's notice. The critical importance of this fact appears to have been lost in much of the modern macroeconomics literature on banking, with the exception of Werner (2005) and the partial exception of Christiano, et al (2010). (Benes & Kumhof, 2012, p. 8-9).

This is an important observation that is also raised by Borio, and is discussed below, in relation to the theory of ASE.

### REAL VS MONETARY REPRESENTATIONS OF THE ECONOMY, THE ROLE OF ELASTIC SUPPLY OF CREDIT IN THE CURRENT CRISIS

Borio emphasizes the critical importance of properly understanding the difference between the notion of 'saving' vs. the notion of 'financing', and argues that this is a critical distinction to understand that one of the principal sources of the current crisis is the 'excess elasticity' of credit creation. This resonates very well with key observations of the Austrian Business Cycle Theory (ABCT), though ABCT goes further, and seems to address the issues that Borio considers points to implement into mainstream macroeconomic theory.

Borio first notes that

*current macroeconomic models are "real" models, disguised as "monetary" ones: (a) financial contracts are set in real, not nominal terms, (b) when models incorporate money, they treat it as a friction, not as the necessary ingredient that improves over barter. (c) above all, the banking system simply transfers real resources from one sector to another; it never generates (nominal) purchasing power" (Borio, 2011, p. 23).*

Borio explains that there are two conceptual paradigms of economic analysis: real and monetary analysis. The real analysis "postulates that functioning of the economy can be sufficiently well understood in terms of real factors; money is simply a veil, economic processes are analysed

as if they took place in a virtual barter economy", whereas "monetary analysis focuses instead on the money flows that are the counterpart of all exchanges" (Borio & Disyatat, 2011, p. 29) "Money prices, money incomes, and saving and investment decisions bearing upon these money incomes (...) acquire a life and importance of their own, and it has to be recognized that essential features of the capitalistic process may depend upon the 'veil' and that the 'face' behind it is incomplete without it" (Schumpeter, 1954, p. 278). In the 'real' analysis, current macroeconomic paradigms rely on the assumption dating back to Metzler (1960) that real (world) interest rate equates the (global) supply of saving and the (global) demand for investment. The consequence of such an assumption is that "by construction, in such models, there's no difference between "saving" and "financing", which are two distinct notions in a monetary economy, in which credit creation plays a fundamental role" (Borio, Disyatat, 2011, p. 27-28). Elaborating on saving, Borio notes that it is defined as 'income not consumed' and "is a national accounts construct that traces the use of real production. It does not represent the availability of financing to fund expenditures". In turn, financing is a "cash-flow concept, is access to purchasing power in the form of accepted settlement medium (money), including through borrowing. (Borio & Disyatat, 2011, p. 7). Borio concludes that:

in ex-post terms, being simply the outcome of various forms of expenditure, saving does not represent the constraint on how much agents are able to spend ex ante. The true constraint on expenditure is not saving, but financing. In a monetary economy all the financing takes the form of the exchange of goods and services for money (settlement medium) or credit (IOUs) (Borio & Disyatat, 2011, p. 1, p. 7).

When discussing the mechanism that allows emergence of a difference between saving and financing, Borio refers to the framework of loanable funds described earlier here in the version of Mises<sup>9</sup>. Borio reaches the same conclusions as Mises with regard to the impact of bank credit:

Through the creation of deposits associated with credit expansion, banks can grant nominal purchasing power without reducing it for other

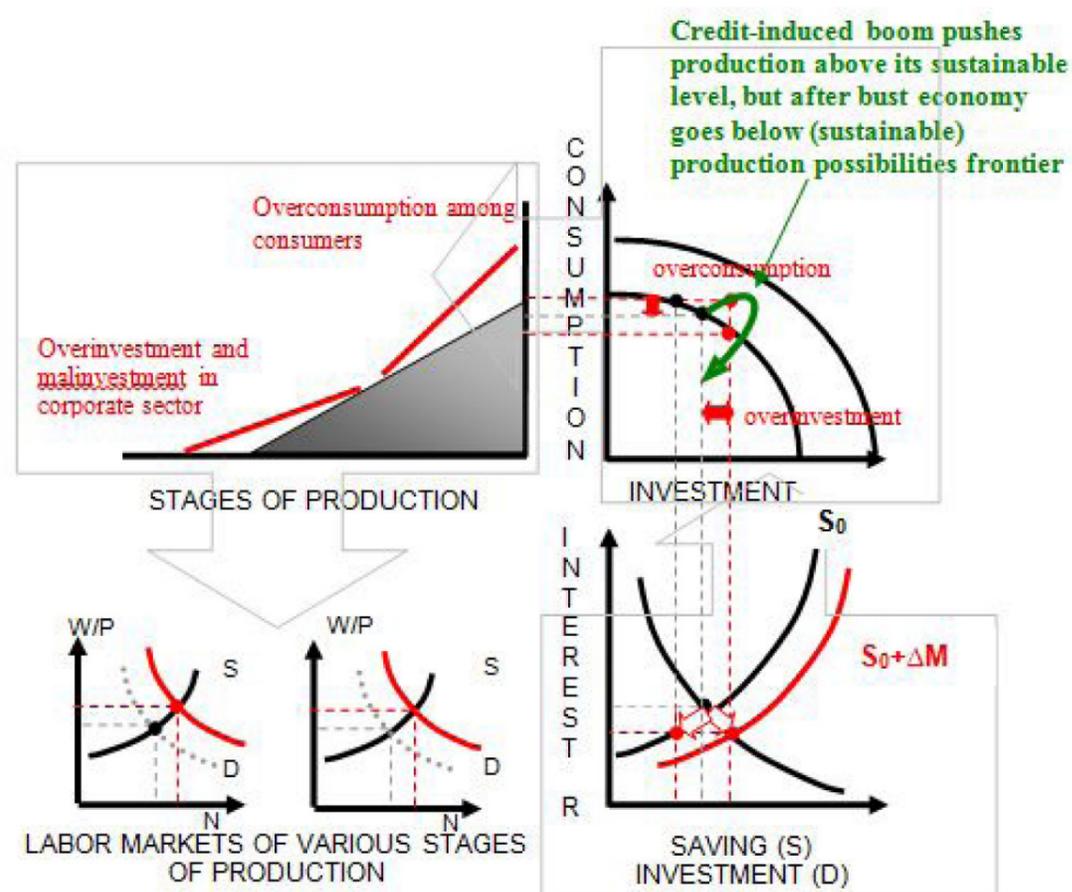
<sup>9</sup> Both Mises and Borio draw from Wicksell (1898).

agents in the economy. The banking system can both expand total nominal purchasing power and allocate it at terms different from those associated with full-employment saving-investment equilibrium. In the process, the system is able to stabilize interest rates at an arbitrary level. The quantity of credit adjusts to accommodate the demand at the prevailing interest rate (Borio & Disyatat, 2011, p. 30).

Borio and Disyatat (2011) see this mechanism as the key one that led to the financial crisis:

We conjecture that the main contributing factor to the financial crisis was not “excess saving”, but the “excess elasticity” of the international monetary and financial system: the monetary and financial regimes in place

Chart 2. Credit induced boom and its impact on interest rates, investments, consumption and dislocations in the labor markets



Source: Garrison (2001), Garrison (2006, p 48)

failed to restrain the build-up of unsustainable credit and asset price booms (“financial imbalances”). Credit creation, a defining feature of a monetary economy, plays a key role in this story (Borio & Disyatat, 2011).

These observations seem a bit of a re-discovery of part of the theory of ASE, though at the same time they remain within the framework set earlier by Wicksell. What’s interesting is that the postulates of Borio with regard to proper modeling of the financial cycle resonate very strongly with observations of the Austrian Business Cycle Theory; another ‘old concept’ that may prove a good answer to the current challenges.

### FINANCIAL CYCLE MODELING – PROPOSALS OF THE AUSTRIAN BUSINESS CYCLE THEORY

Borio (2012, p. 8-11) calls for re-discovery of the financial cycle as an indispensable element to understand business fluctuations and their policy challenges. He notes that there’s no consensus definition of the term ‘financial cycle’, but he uses it defined as “self-reinforcing interactions between perceptions of value and risk, attitudes towards risk and financing constraints, which translate into booms followed by busts” (Borio, 2012, p. 2). Borio points to three basic features that satisfactory models of financial cycle should have:

- 1) The booms should not just precede but cause the busts. (...) The boom sows the seeds of subsequent bust, as a result of the vulnerabilities that build up during this phase.
- 2) Presence of debt and capital stock overhangs. (...) During the financial boom, credit plays a facilitating role, as the weakening of financing constraints allows expenditures to take place and assets to be purchased. This in turn leads to misallocation of resources, notably capital but also labour, typically masked by the veneer of a seemingly robust economy.
- 3) Distinction between potential output as non-inflationary output and as sustainable output. (...) it is quite possible for inflation to remain stable while output is on an unsustainable path, owing to the build-up of financial imbalances and the distortions they mask in the real economy. (Borio, 2012, p. 8-9)

The Austrian Business Cycle Theory proposes interesting answers to all these postulates, and at the same time is based on the Wicksellian recognition of the impact of divergence of the market interest rate from the natural market rate, and at the same

time sees credit expansion as the principal engine of business and financial cycles, a feature Borio considers important as well, as described above. In order to understand the key points of the ABCT concept, we need to extend the framework presented on Chart 1 (where impact of credit expansion on consumption and investments is described, and which is now the right-hand-side part of Chart 2) with the structure of production (upper left-hand-side panel of Chart 2) and the labor markets of various stages of production<sup>10</sup> (lower left-hand-side panel)

The process set by credit creation lowers the interest rate (lower right-hand-side pane), which boosts both consumption and investment at the same time, pushes production above the production possibilities frontier (which mirrors sustainable production, i.e. such a combination of savings and investment that is consistent with the natural interest rate). Growth above PPF is unsustainable and has to end with a bust. Unsustainability of this growth stems from the fact that at the same time all branches of the economy (“stada of production” in ASE parlance) are competing for finite resources (of commodities, labor, productive assets). The pure market mechanism (without credit creation) would signal entrepreneurs that they can use only that much of the resources that are not demanded by consumers. As credit expansion “sends false signals” of availability of resources, it leads to “overconsumption” in the household sector (which, due to the artificially lowered interest rate save less than they would save otherwise) as well as overinvestment and malinvestment<sup>11</sup> in the corporate sector, which is the consequence of lowered interest rates sending them a signal of availability

<sup>10</sup> The theoretic framework of mainstream macroeconomic theory takes into account “one labor market”, i.e. it basically does not differentiate between what happens in different sections of the labor market. Contrary to this, one of the defining features of the ABCT is looking at capital and labor as structure, and not aggregate. ABCT emphasizes that the labor market of those stages of production associated with consumer goods behaves differently than the labor markets of those stages of production associated with investment goods. This is why there are two graphs representing labor markets of two (most distant) stages of production. Labor markets are described in terms of real wage rate (W/P) and level of employment (in terms of worker-hours, N). More granular analysis would have to incorporate more stages of production and more corresponding labor markets. For detailed analysis of this aspect of ABCT see Garrison (2001) p. 125-144.

<sup>11</sup> An interesting analysis of overconsumption, forced saving and malinvestment from the point of view of ABCT can be found in Garrison (2004).

of investable resources. Overconsumption and overinvestment are presented on the upper left-hand-side pane of chart 2. In the ABCT framework these occurrences are impacting the “stages of production”, creating an unsustainable structure both in the branches of industry producing consumer goods, as well as in investment goods sectors. Apart from the unsustainable structure of production, credit expansion also creates an unsustainable level (and structure) of employment, which is mirrored in the lower left-hand-side pane of chart 2 (labor markets of the corresponding stages of production). The ABCT “focuses on artificial booms and on the market process that brings them to an end”(Garrison, 1993, p. 102-117). When the process of credit expansion comes to an end, there’s an overhang of debt, misallocated investments and overconsumption on the side of consumers.

The mechanism highlighted above proposes answers to the postulates set by Borio as essential features of successful models of the financial cycle. Firstly, boom indeed sows the seeds of subsequent bust, and the vulnerabilities are built as consequences of credit expansion, which impacts not only the level of debt, but also causes overconsumption, overinvestment and malinvestment, which will have to be corrected during recession. Also the labor markets are impacted, creating a structure of employment inconsistent with time preference of the society. Secondly, indeed “credit plays a facilitating role” in building “debt and stock overhangs”, and indeed there’s misallocation of capital and labor. Thirdly, the ASE approach shares the view of Borio, that there’s a distinction between non-inflationary and sustainable output. Already Hayek (1966, p. 103-109) criticized a focus on changes of the general level of prices, and pointed out that changes of relative prices are much more important, as they govern allocation of resources over time. The fact that credit expansion does not have to drive consumer prices up has been noted also by Rothbard (2000) in his analysis of the processes leading to “America’s Great Depression”. Rothbard summarized that:

Federal Reserve credit expansion, then, whether so intended or not, managed to keep the price level stable in the face of an increased productivity that would, in a free and unhampered market, have led to falling prices and a spread of increased living standards to everyone in the population. The inflation distorted the production structure and led to the ensuing depression–adjustment period. It also prevented the

whole populace from enjoying the fruits of progress in lower prices and insured that only those enjoying higher monetary wages and incomes could benefit from the increased productivity (Rothbard, 2000, p. 171)”.

Therefore, also the third postulate of Borio finds an answer in the Austrian Business Cycle Theory. It is not the inflation rate that should be expected to give warning signs, as growth of price levels might be offset with growing productivity, but credit expansion per se distorts the production structure, and ends with a bust.

## CONCLUSIONS

The crisis brought re-discovery of some ‘old ideas’ in macroeconomics. This paper shows how the key ideas of the Chicago Plan are based on the same observations of the nature of credit as the observations of Ludwig von Mises a few decades earlier, although there are fundamental differences in recipes drawn from the same observations. What is interesting is that the Austrian Business Cycle Theory, which was built on the foundation of Mises’ “Theory of Money and Credit”, has some convincing answers to many of the postulates set by Borio with regard to the modern financial cycle modeling (booms not just precede, but cause busts, credit plays a facilitating role in misallocation of resources during the boom, inflation may remain stable while output is on an unsustainable path) as well as with regard to proper modeling of “monetary economies”. The framework set by ABCT seems well suited to analysis of the processes that led to the current crisis. One of them is the significant acceleration of money and debt creation after the US “closed the gold window” in 1971, and its consequences – first positive (as credit creation facilitated economic growth, lowered unemployment rates and boosted government budget revenue), and negative ones after credit saturation reached such high levels that de-leveraging was a necessity, and that in turn triggers other negative consequences for growth, state of public debt, etc. Another interesting avenue for research based on Mises’ distinction between ‘commodity credit’ and ‘circulation credit’ would be current “quantitative easing” programs of central banks around the globe. If, within the boundaries of conventional central bank policy, its various tools (setting the reserve ratio level, setting the discount rate, open market operations) can be seen as levers of

indirect impact on the pace of money creation within the financial system, then “quantitative easing” is a way of directly “forcing money into existence”, when other channels become dysfunctional. Within the Austrian framework, that would mean even stronger intervention into the workings of the free market – with potentially even more negative consequences<sup>12</sup>.

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<sup>12</sup> Mises was adamant about the consequences of a boom created with credit creation “There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.” (Mises, 1996 [1949], p. 572). In this light, the QE programs would represent “further advancement” of ways to expand credit.

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