Marx and the "Minsky moment"
Liquidity crises and reproduction crises in *Das Kapital*[*]

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Abstract

Karl Marx never put a final point to his theory of economic crises, which remained unachieved and torn between profitability crises and realization crises. According to Marx, every crisis goes through what he called a "monetary moment", which is the moment – usually called since 2008 the "Minsky moment" – when credit can no more be substituted to cash payments, because the bank themselves are facing liquidity needs. This paper argues that monetary and financial mechanisms are at the core of Marx' vision of capitalist instability. But two conditions are required for transforming this vision into a consistent theory of crises: a clarification of his theory of monetary interest, and an explanation of the link between financial instability and the reproduction process.

As shown in section 1, the reference to liquidity crisis goes through all his work from the Contribution to the manuscripts of book III of Capital.

Section 2 briefly presents, Marx' financial concepts including fictitious capital, interest-bearing capital or banking capital.

Section 3 is devoted to a discussion of Marx' monetary theory of interest.

Section 4 shows how the mechanisms of financial instability in Marx' writings involve a notion of weakening of the financial structure, which has much in common with Minsky's hypothesis of financial instability.

Section 5 addresses the missing point in Marx' theory, which is the formal link between "real" accumulation of capital and the development of finance. Starting from Hilferding's *Finance Capital*, we suggest that this link might be established in a bi-sectoral model of the economy where bank credit allows the displacement of capital flows which originate during the boom the formation and enlargement of disproportions which will come to an end at the moment when the credit collapses because of the weakening of the financial structure.

Keywords: Liquidity crises, reproduction crises, Marxian theory of crises, financial instability

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[*] Work in progress. Please do not quote without permission.

1 Introduction

Is there anything in Marx's writings which can help the understanding of contemporary financial crises? With very few exceptions – the most prominent one being Rudolf Hilferding - Marxist scholars usually insist on the "real" determinants of capitalist crises, and consider financial factors as mere adjuvants whose limited and secondary role is to exacerbate the contradictions inherent to the production process. Among others, Simon Clarke (1994) gives no place to financial mechanisms in his presentation of alternative Marxian theories of crises (under-consumption, disproportionality and falling-rate-of-profit). Other commentators, while they give credit to Marx for having developed some interesting financial concepts, consider that when it comes to crises, finance as no causal effect. According to Toporowski (2005), marxist economists present an "attenuated" view of finance, and he classifies them among what he calls "reflexive financial theories". He argues that for Marx, financial instability is just a reflect of instability in the real sector. In this interpretation Marx, and more generally marxist economists (with the noticeable exception of Rosa Luxemburg), are unable to propose a critical theory of finance, i.e. a theory of financial instability. In a more recent paper, Toporowski (2018) argues that Marx did not adapt his vision of capitalism to the financial changes in finance occurred in the late 19th century. More specifically, he did not draw all the consequences of his own writings about the credit system on his theory of crises, which according to Toporowski is limited to "classic" capitalism because it assumes that capitalists operate with their own funds. Again, he considers that Marx did not apprehend the possibility for the credit system to destabilize the economy. So according to him, the concepts developed by Marx cannot address the major issues and questions raised by such economic crises as those of 1929 and 2007.

Unlike this interpretation, we consider Marx's writings on money, banks, credit and finance to be of major importance in his theory of crises. From the analysis of the crises of his time, to the most abstract analysis with the formal possibility of crises, credit and finance are always at the core of his considerations. Marx is nonetheless ambiguous about the relationship between financial and real crises. Some authors outline that he raised the possibility of autonomous financial crisis, which will in turn affect the real sphere[1], but they do not deduce any specific theory of financial crises from his writings.

Crotty (1985) stresses that the fact that traditional Marxist literature on accumulation and crisis have nothing to say about financial crises is in contradiction with Marx's

[1] Meacci (1998) or de Brunhoff and Foley (2007).

methodology. He relies upon the formal possibilities of crises described in chapter III of the book I of *Capital* and in chapter 17 of *Theories of Surplus-Values* to claim the centrality of money, credit and finance in Marx's crisis theory. His main argument is that to be fully convincing, Marx's theory of crises must include both the production and the circulation processes. Within this framework, he advocated for a comprehensive theory of crisis which includes both the analysis of the credit system, with the concept of over-sensitiveness to which we will return below, and the law of the falling rate of profit. Regarding Marx's analysis of the credit system, Crotty (1986) outlines some similarities with Minsky treatment of financial instability. Following Crotty, we consider the lack of interest for financial issues to be in contraction with Marx analysis of the crises. Either at the theoretical level or in his day-to-day comments of the crises of his time, Marx always emphasizes the role of credit and financial markets.

In this paper we argue that Marx's writings on money, finance, credit and crises, although they mostly consist in unfinished notes and drafts, contain the lineaments of a coherent theory of financial instability, which can be better understood in the light of Minsky's hypothesis of financial fragility. Accordingly, what is advocated in this paper is that Marx fully recognized the role of finance not only in the outbreak but in the path to the crisis. To do so, we will focus on book III of *Capital*, mainly on the fourth and fifth sections where the concepts of fictitious capital, interest-bearing capital and banking capital are introduced and where the impact of credit on business cycles is addressed. We shall also refer to the *Theories of Surplus-Value*, mainly on chapter 17 on Ricardo's theory of accumulation, and to some passages of book I of *Capital* and of the *Contribution to the Critique of Political Economy* about money and the so-called formal possibility of crisis. The paper is organised as follows:

- section 2 assesses the continuous reference, in Marx's writings, to liquidity crisis, defined as the "monetary moment" which characterized every crisis,.
- In section 3, we summarise briefly the conceptual apparatus developed by Marx about finance and banking
- Section 4 discuss the "double theory" of the rate of interest contained in book III of *Capital*.
- section 5 provides an interpretation of Marx's theory of crisis where financial instability is at the core of the path to the crisis.
- Section 6 tackles with the relation between real and financial crises, which must be thought about from a reproduction perspective.

2. Marx on liquidity crises

As a starting point, we shall understate that the notion of a liquidity crisis - in other words a "Minsky moment[2]" - is clearly at work in Marx's writings, which is not so surprising, given the outstanding importance he concedes to the monetary character of a capitalist economy. At the very beginning of book I of *Capital,* (chapter 3 "on money"), mentions the possibility of a breaking of the continuity of payments:

> "This contradiction (between money as a medium of circulation and money as universal commodity) comes a head in **those phases of industrial and commercial crises which are known as monetary crises.** Such a crisis occurs only where **the ever-lengthening chain of payments, and an artificial system of settling them**, has been fully developed. Whenever there is a general and extensive disturbance of this mechanism, no matter what its cause, money becomes suddenly and immediately transformed, from its merely ideal shape of money of account, into hard cash. Profane commodities can no longer replace it. The use value of commodities becomes valueless, and their value vanishes in the presence of its own independent form. On the eve of the crisis, the bourgeois, with the self-sufficiency that springs from intoxicating prosperity, declares money to be a vain imagination. Commodities alone are money. But now the cry is everywhere: money alone is a commodity! As the hart pants after fresh water, so pants his soul after money, the only wealth. **In a crisis, the antithesis between commodities and their value form, money, becomes heightened into an absolute contradiction**. Hence, in such events, the form under which money appears is of no importance. The money famine continues, whether payments have to be made in gold or in credit money such as banknotes. » (MECW, Vol 35, Marx, 1867, pp. 148-149; underlining is ours).

Every crisis begins with such a "monetary moment", which gives the signal that the circulation of commodities, and thus the reproduction of capital is going to interrupt. Generally, it is the consequence of some "disorder" occurring in the circulation process. In some cases, the "monetary crisis" may arise independently of any trouble in the "real" economy:

> « The monetary crisis referred to in the text, being a phase of every crisis, must be clearly distinguished from that particular form of crisis, which also is called a monetary crisis, but which may be produced by itself as an independent phenomenon in such a way as to react only indirectly on industry and commerce. The pivot of these crises is to be found in moneyed capital, and their sphere of direct action is therefore the sphere of that capital, viz., banking, the stock exchange, and finance. » (MECW, Vol 35, 1867, pp. 148-149, footnote 49)

An example of a "monetary crisis" of this second "type" is given by Engels and Marx in their discussion of the crisis of 1866. On May 17th 1866, a few days after the London crash, Marx wrote to Engels:

> « The present crisis appears to me to be merely a premature, specifically financial crisis. It could only become important if the business in the United States goes rotten, and there would scarcely be time for that now. What effect is it having on you cotton lords? And what effect has the fall in cotton prices had? » MECW, Vol. 42, p. 278).

And Engels added in his answer:

> « The panic has, at all events, come much too soon and may possibly spoil a good solid crisis for us which would otherwise have occurred in 1867 or 1868. If we had not simultaneously chanced to have the big fall in cotton, we would barely have been affected by it here. The collapse of the limited

[2] This expression comes from a paper by Justin Lahart in *The Wall Street Journal* where he wrote on August 18th 2007 "Mr. Minsky long argued markets were crisis prone; his 'moment' has arrived".

liability and financing swindles had after all been long foreseen and hardly affected our trade at all. » MECW, Vol. 42, p. 279.

The existence of credit and consequently of a complex network of reciprocal commitments involving the whole capitalist class and thus the productive system offers the real possibility of crisis. In the absence of credit, the formal possibility of crisis, associated with the monetary character of circulation, would remain an abstraction.

> « The general, abstract possibility of crisis denotes no more than the *most abstract form* of crisis, without content, without a compelling motivating factor. Sale and purchase may fall apart. They thus represent potential *crisis* and their coincidence always remains a critical factor for the commodity. (…) The factors which turn this possibility of crisis into (an actual) crisis are not contained in this form itself; it only implies that *the framework* for a crisis exists. » Marx, TSV, t.2, p. 509

Once money capital and banks are introduced, the formal possibility of crisis becomes a "real" possibility:

> « But as the same sum of money acts for a whole series of reciprocal transactions and obligations here, *inability to pay* occurs not only at one, but at many points, hence a *crisis* arises.
> These are the *formal possibilities of crisis.* The form mentioned first is possible without the latter-that is to say, crises are possible without credit, without money functioning as a means of payment. But the second form is not possible *without the first*-that is to say, without the separation between purchase and sale. But in the latter case, the crisis occurs not only because the commodity is unsaleable, but because it is not saleable within a *particular period of time*, and the crisis arises and derives its character not only from the *unsaleability* of the commodity, but from the *non-fulfillment of a whole series of payments* which depend on the sale of this particular commodity within this particular period of time. This is the *characteristic form of money crises.* » Marx, TSV, t.2, p. 514
> For example, the weaver must pay for the whole of the constant capital whose elements have been produced by the spinner, the flax-grower, the machine-builder, the iron and timber manufacturer, the producer of coal etc. In so far as these latter produce constant capital that only enters into the production of constant capital, without entering into the cloth, the final commodity, they replace each other's means of production through the exchange of capital. Supposing the weaver now sells the cloth for £1,000 to the *merchant* but in return for a bill of exchange so that money figures as *means of payment*. The weaver for his part hands over the bill of exchange to the *banker,* to whom he may thus be repaying a debt or, on the other hand, the banker may negotiate the bill for him. The flax-grower has sold to the spinner in return for a bill of exchange, the spinner to the weaver, ditto the machine manufacturer to the weaver, ditto the iron and timber manufacturer to the machine manufacturer, ditto the coal producer to the spinner, weaver, machine manufacturer, iron and timber supplier. Besides, the iron, coal, timber, and flax producers have paid one another with bills of exchange. Now if the merchant does not pay, then the weaver cannot pay his bill of exchange to the banker. The flax-grower has drawn on the spinner, the machine manufacturer on the weaver and the spinner. The spinner cannot pay because the weaver cannot pay, neither of them pay the machine manufacturer, and the latter does not pay the iron, timber or coal supplier. And all of these in turn, as they cannot realize the value of their commodities, cannot replace that portion of value which is to replace their constant capital. Thus the general crisis comes into being. This is nothing other than the *possibility of crisis* described when dealing with money as a means of payment; but here-in capitalist production-we can already see the connection between mutual claims and obligations, the sales and purchases, through which the possibility can develop into actuality. » Marx, TSV, t.2, pp. 511-512

Maybe more surprisingly, in the section of book III devoted to the "falling rate of profit" law, Marx gives the following description of the chain of events leading to the "disruption of the process of reproduction":

> « The main damage, and that of the most acute nature, would occur in respect to capital, and in so far as the latter possesses the characteristics of value it would occur in respect to the *values* of capitals. That portion of the value of a capital which exists only in the form of claims on prospective shares of surplus value, i.e., profit, in fact in the form of promissory notes on production in various forms, is immediately depreciated by the reduction of the receipts on which it is calculated. A part of the gold and silver lies unused, i.e., does not function as capital. Part of the commodities on the market can complete their process of circulation and reproduction only through an immense contraction of their prices, hence through a depreciation of the capital which they represent. The elements of fixed capital are depreciated to a greater or lesser degree in just the same way. It must be added that definite, presupposed, price relations govern the process of reproduction, so that the latter is halted and thrown into confusion by a general drop in prices. This confusion and stagnation paralyses the function of money as a medium of payment, whose development is geared to the development of capital and is based on those presupposed price relations. The chain of payment obligations due at specific dates is broken in a hundred places. The confusion is augmented by the attendant collapse of the credit system, which develops simultaneously with capital, and leads to violent and acute crises, to sudden and forcible depreciations, to the actual stagnation and disruption of the process of reproduction, and thus to a real falling off in reproduction. » (MECW, Vol 37, 1894, p.253)

What is interesting in this extract in the idea that the depreciation of capital begins with the drop of stock markets values, i.e. this portion of "capital which exists only in the form of claims on prospective shares of surplus value, i.e., profit, in fact in the form of promissory notes on production in various forms" And the cause for the depreciation of this "finance capital" is an initial drop in prices, coming from some kind of disequilibrium in the markets for goods (capital goods or consumption goods). According to their credit policy, the banks can either be buffers or enhancers of the panic.

Again in book III, when he discusses the relationship between 'real' accumulation and 'financial' accumulation', Marx refers to "money crises" and the role of banks in the stabilization or intensification of the economic situation:

> « As long as the *social* character of labour appears as the *money existence* of commodities, and thus as a *thing* external to actual production, money crises - independent of or as an intensification of actual crises - are inevitable. On the other hand, it is clear that as long as the credit of a bank is not shaken, it will alleviate the panic in such cases by increasing credit money and intensify it by contracting the latter. » (MECW, Vol 37, p. 514)

This bulk of quotations, out of a variety of texts, offers sufficient proofs that Marx far from ignoring money, banks and finance when addressing economic crises, identify with his notion of "money crisis" something which looks very much like a liquidity crisis, or a "Minsky moment". Thus, it is not surprising that Marx developed in book III of *Capital,* a complex apparatus of notions designed for addressing the monetary and financial dimensions of crises.

3 – Money, banking and finance: Marx's financial concepts

3-1 From moneyed capital to finance capital

Far from ignoring finance, Marx develops a whole set of concepts dealing with banking, credit and financial markets. As Mendez (2012) outlined, the expression "finance capital" never appears in his writings[3], and he does not propose a concept representing finance capital in general. This concept is introduced by Hilferding (1910) and taken up by Lenin (1917) and a number of contemporary scholars[4]. According to Hilferding, finance capital consists in the unification of industrial capital and banking capital under the domination of the latter[5]. Harvey (1982) characterizes this definition as 'power-bloc view' to which he opposes a 'process view' of finance capital, but without providing any definition of this concept[6]. Hilferding's definition - the only precise one - is interesting for discussing power relations between financial capitalists and active capitalists, but was not as such mobilized by him in his theory of crises (see section 6 below). In our further developments we shall use 'finance capital' in a different understanding, as corresponding to whole money capital operating in financial markets[7], either coming from banks, other financial (non monetary) institutions or individuals.

In Marx's writings the best proxy for 'finance capital' (or 'financial capital') as it is nowadays commonly understood, is the expression "moneyed capital" or "monied capital" which runs through his preparatory work, from the *Contribution* to the various manuscripts of *Capital*. The possessors of this "moneyed capital" are identified as a particular class of capitalist (the financial capitalists) in opposition to the industrial capitalists and the landlords by the expression "moneyed" or "monied" capitalists[8]. These expressions, taken from pre-classical English political economy (Locke, Petty, etc) appear many times in Marx's preparatory manuscripts[9]. But "moneyed capital" is used by Marx only once in Book I, never in Book II and three times in Book III. In Book I, this "moneyed capital", whose "sphere of action is (…) the sphere of that capital, viz., banking, the stock exchange and finance" is considered as "the pivot of these (monetary) crises" (MECW, Vol 35, pp. 148-149, footnote 49, see above a more

[3] However, some commentators (de Brunhoff (1967), Harvey (1982) or Itoh and Lapavitsas (1999)) equate "finance capital" with money-dealing capital or interest-bearing capital, disregarding the difference between these concepts. For a presentation of these confusions see Mendez (2012, pp. 38-40)
[4] See Chesnais (2016)
[5] A notion inspired by the German reality of the so-called "bank-industry" prevailing at the beginning of 20[th] century.
[6] Carcanholo and Nakatani (2000) point out that although this concept is sometimes presented as a Marxist concept, its use is problematic due to the lack of a precise definition.
[7] This definition is similar to J.B. Bellamy Foster (2006)
[8] "Interest-bearing capital is personified in the MONEYED CAPITALIST, industrial capital in the INDUSTRIAL CAPITALIST, ret-bearing capital in the LANDLORD (…)". (MECW, Vo. 32: A Contribution to the Critique of Political Economy, p. 514)
[9] « As Wilhelm Thucydides could have gathered from John Stuart Mill (Essays on Some Unsettled Questions of Political Economy, London, 1844, pp. 109-110), by "MONIED CLASS" the Englishman understands 1) the money-lenders; and 2) these money-lenders are people who either live altogether on interest or are money-lenders by profession, such as bankers, bill-brockers, etc." MECW, Vol. 31, 1989, pp. 352-352. He refers here to Mill, but throughout the *Grundrisse, The Outlines of the Critique of Political Economy,* the manuscript of *A Contribution to the Citique of Political Economy* and of the book I of *Capital* (contained in volumes 28 to 34 of MECW) he also takes up this expression from Smith, Ricardo or Hume.

complete quotation). Recent research conducted as part of the publication of Marx's complete works in MEGA has shown that this absence in further volumes of *Capital* is due to Engels' intervention during the preparation of Book III publication. Thus, he replaced this expression by 'money capital' or 'loan capital' (Miyata; 2015-16). In chapters 30 to 33 of the fifth section of Book III in particular, the analysis of the relationship between the accumulation of 'moneyed capital' and real capital is transformed into a relationship between 'money capital' and real capital. By replacing 'money capital' by 'moneyed capital', we have for example:

> "In order to quickly settle this question, let us point out that one could also mean by the accumulation of money**(ed)** capital the accumulation of wealth in the hands of bankers (money lenders by profession), acting as middlemen between private money capitalists on the one hand, and the state, communities, and reproducing borrowers on the other. For the entire vast extension of the credit system, and all credit in general, is exploited by them as their private capital. These fellows always possess capital and incomes in money form or in direct claims on money. The accumulation of the wealth of this class may take place completely differently than actual accumulation, but it proves at any rate that this class pockets a good deal of the real accumulation." MECW, Vol. 37, 1894, p. 477

As shown by the quotation of book I above, Marx notion of moneyed capital, including banking capital, is larger than "finance capital" as defined above. It includes loanable moneyed capital and fictitious capital, which then encompasses all financial securities and the money used in credit, banking and financial markets. And it is *de facto* (if we accept Miyata's proposal) the notion used by Marx when he examines in section V of Book III (chapters 30 to 33) the relationship between "real" accumulation and "financial" accumulation.

We shall now briefly examine the other concepts used by Marx to address financial mechanisms: money-dealing capital, interest-bearing capital, banking capital and fictitious capital, each one of them focusing on particular issues[10].

3.2 From money-dealing to debt-dealing: banking capital and interest-bearing capital

Marx introduced the concept of interest-bearing capital in the fifth section of book III, which he defines as the capital commodified "as capital":

> Money - here taken as the independent expression of a certain amount of value existing either actually as money or as commodities - may be converted into capital on the basis of capitalist production, and may thereby be transformed from a given value to a self-expanding, or increasing, value. It produces profit, i.e., it enables the capitalist to extract a certain quantity of unpaid labour, surplus product and surplus value, from the labourers, and to appropriate it. In this way, aside from its use value as money, it acquires an additional use value, namely that of serving as capital. Its use value then consists precisely in the profit it produces when converted into capital. In this capacity of potential capital, of a means of producing profit, it becomes a commodity, but a commodity *sui generis*. Or, what amounts to the same, capital as capital becomes a commodity.
> (MECW, Vol 37, 1894, pp. 336-337)

[10] For a more exhaustive presentation of these concepts see De Grandi (2018) or Mendez (2012)

The origin of interest-bearing capital is to be found in the specific use value of money in capitalist production, i.e. its capacity to preserve its value and to produce the average rate of profit by exploiting the labourers through the production process. This is a specifically capitalist use value of money, that of being able to start the circuit of capital, and extract surplus-value in this process. This is related to Marx's distinction between money as money and money as capital, this distinction will be important in the next section about the determination of the interest rate. The capacity of money to become capital, the fact that any large sum of money is potential capital turns it into a commodity. This peculiar commodity is what is lent by the money capitalist to the industrial capitalist and the remuneration of interest-bearing capital is the rate of interest, to which we will return below[11].

Yet this definition immediately raises two questions, to which Marx doesn't give clear answers, and even sometimes contradictory ones:

- who are those "money capitalists" (or finance capitalists) who "offer" loanable funds: savers or bankers?
- and what is the market for "capital as capital": is it the credit market or the financial market?

This ambiguity is complete when Marx writes: « the development, and the attendant concentration, of the credit system gives to loanable capital a general social character and throws it all at once on the money market. » (K3 22, ES, p. 32).

Diverging answers to these questions have been proposed by commentators. Lucarelli (2010) equates it with finance capital. According to Chesnais (2016), the analysis of finance capital starts with interest-bearing capital. But interest-bearing capital is equivalent to finance only if it is limited to bonds and commercial bills, which is clearly not the case for Marx, who repeatedly refers to "credit"[12]. The difficulty there is that he never developed his analysis of bank credit[13].

[11] "What, now, is the use value which the money capitalist gives up for the period of the loan and relinquishes to the productive capitalist— the borrower? It is the use value which the money acquires by being capable of becoming capital, of performing the functions of capital, and creating a definite surplus value, the average profit (whatever is above or below it appears here as a mere accident) during its process, besides preserving its original magnitude of value." MECW, Vol. 37, 1894, pp. 349-350

[12] Among the debates concerning the concept of interest-bearing capital, there is the question of is limitation to credit for productive purposes or not (Fine; 2013; Lapavitsas 1997; 2013). When referring to interest-bearing capital Marx only has in mind credit for productive employment. This is clear from Marx's emphasis on the fact that what is lent is money as capital and that to return increased by interest he must have gone through the production process. This does not mean that Marx ignores other forms of credit, Marx concludes his section on interest-bearing capital with: « This lending, therefor, is the appropriate form of alienating value as capital, instead of alienating it as money or commodities. It does not follow, however, that lending cannot also take the form of transactions which have nothing to do with the capitalist process of reproduction." MECW, Vol. 37, 1894, p. 348. But these forms of credit are presented with the notions of loanable money capital or usury capital.

[13] Referring to the composition of banking capital Marx writes: "Bank capital consists of 1) cash money, gold or notes; 2) securities." MECW, Vol. 37, p. 461, without mentioning bank loans.

Originally, the bankers are defined as "money-dealing capitalists"[14]: but starting from discount of commercial bills and currency change[15], their activities developed as providers of money capital and debt-dealers. Of course, bank loans are a constituent part of the interest-bearing capital.

3.3 Fictitious capital: to be or not to be?

Fictitious capital is not a concept distinct of moneyed capital but just another name for it introduced to underline its characteristics as a source of illusions and instability.

Numerous commentators attempted to build a Marxian theory of financial crises around this concept. As it was introduced by Marx in texts that remained in draft stage, it gave rise to contradictory interpretations. Some contributors have considered that fictitious capital consists only of financial securities that have no counterpart in the productive sphere (such as public debt bonds) [16]. This is the case of Guttman (1996) or Meacci (1998), the latter explaining that fictitious capital is the 'degenerated form' of credit, and only appears when the money lent is not employed in production. In these interpretations, when bank credit or the issuance of shares and bonds are used to expand production, it does not lead to the creation of fictitious capital. These analyses are based on an incorrect understanding of fictitious capital as defined by Marx. All types of financial securities and debts are included in fictitious capital. Marx makes this clear when he refers to stocks and bonds issued as counterpart of productive capital:

> But this capital does not exist twice, once as the capital value of titles of ownership (stocks) and the other time as the actual capital invested, or to be invested, in those enterprises. It exists only in the latter form, and a share of stock is merely a tittle of ownership to a certain portion of the surplus value to be realized by it. A may sell this title to B, and B may sell it to C. These transactions do not alter anything in the nature of the problem. A or B then has his title in the form of capital, but C as transformed his capital into a mere title of ownership to the anticipated surplus value from the stock capital. (MECW, Vol 37, 1894, p. 467)

Marx introduces the notion of fictiveness in order to dismiss the illusion of a duplication of social capital. Indeed, the same capital seems to exist twice, as 'real' productive capital, in the hands of the debtor (the industrial capitalist) on one side and as financial security in the hands of the creditor (the financial capitalist or the bank), on the other side. Marx stresses that financial securities are not supplementary values, but only representatives of existing

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[14] "Paying and receiving money, settling accounts, keeping current accounts, storing money, etc.-all this dissociated from acts necessitating these technical operations, makes money-dealing capital of the capital advanced for these functions." MECW, Vol. 37, p. 315

[15] "Trading in money, commerce in the money commodity, first developed therefore out of international commerce." MECW, Vol. 37, p. 315 and "Money-changing and the bullion trade are thus the original forms of the money trade, and spring from the two-fold functions of money-as national money and world money." MECW, Vol. 37, p. 317

[16] The fictitious capital is mainly the result of the development of interest-bearing capital, however in the case of government bonds, the fictitious capital does not reflect interest-bearing capital.

productive capital. This illusion is reinforced by the fact that they can be sold on the financial markets and thus take the appearance of being a real capital for their owners. As stated by Marx:

> "Titles of ownership to public works, railways, mines, etc., are indeed, as we have also seen, titles to real capital. But they do not place this capital at one's disposal. It is not subject to withdrawal. They merely convey legal claims to a portion of the surplus value to be obtained by it. But these titles likewise become paper duplicates of the real capital (…) They assume the form of interest-bearing capital, not only because they guarantee a certain income, but also because, through their sale, their repayment as capital values can be obtained. (…) But as duplicates which are themselves objects of transactions as commodities, and thus able to circulate as capital values, they are illusory, and their value may fall or rise quite independently of the movement of value of the real capital for which they are titles.-." (MECW, Vol. 37, 1894, p. 476, we underline)

Mendez (2012) uses an accounting analysis to clarify this concept; he explains that fictitious capital is the difference between the aggregated asset and the consolidate asset. This interpretation highlights one of Marx's objectives by introducing this concept, which is to reassert that production is the only source of value. The fictiveness of this finance capital also means that it is only partially representative of real capital. Public bonds are a special case because they do not correspond to any productive capital[17]. Marx does not distinguish between corporate bonds and equity shares.

The outstanding volume of debts which belong to moneyed capital is also considered by Marx as fictitious capital: "With the development of interest-bearing capital and the credit system, all capital seems to double itself, and sometimes treble itself, by the various modes in which the same capital, or perhaps even the same claim on a debt, appears in different forms in different hands. The greater portion of this 'money**(ed)** capital' is purely fictitious" (MECW, Vol. 37, p. 470) and he adds that "(…) everything in this credit system is doubled and trebled and transformed into a mere phantom of the imagination" (MECW, Vol. 37, p. 472).

The other reason why this capital is fictitious is that its market valuation is also fictitious, even virtually irrational because it is based upon uncertain estimates of future profits. Indeed, the expectation of future profits is largely imaginary depending upon mass psychology. On this ground, Marx is on the same line as Keynes and Schiller. Fictitious capital therefore has its own valuation and circulation process which is autonomous from the valorisation and circulation of productive capital. For the society as a whole, the accumulation of financial wealth is not necessarily an accumulation of real capital.

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[17] « The state has to annually pay its creditors a certain amount of interest for the capital borrowed from them. In this case, the creditor cannot recall his investment from his debtor, but can only sell his claim, or his title of ownership. The capital itself has been consumed, i.e., expended by the state. It no longer exists. (…) But in all cases, the capital, as whose offshoot (interest) state payments are considered, is illusory, fictitious capital. Not only that amount loaned to the state no longer exists, but it was never intended that it be expended as capital, and only by investment as capital could it have been transformed into a self-preserving value." MECW, Vol. 37, 1894, pp. 462-463)

Thus, the notion of fictitious capital provides a key to the analysis of financial bubbles. Fictitious capital is a destabilizing factor in the economy since while fictive at the social level, it represents "real wealth" at the individual level. The crisis is then the moment when the fictitious nature of financial securities is revealed in the public eye.

4. A monetary theory of interest

The theory of interest is a crucial point for any theory of crises and fluctuations, and it is one of the analytical points where Marx clearly departs from classical views. As advocated by a number of authors, Marx has a lot in common with Keynes, and delivers various insights which could be considered as precursors of a Keynesian view on money and interest. At the same time, it is among the unachieved pieces of Marx's economics, and sometimes he seems to go back to the classical orthodoxy. Starting from his non-classical ideas, we shall then identify the remaining ambiguities, which will force us to give an interpretation compatible with our reading of Marx's Minsky moment.

4.1 On the nature of interest

We shall take as a starting point the analysis made by Fan-Hung (1939) of Marx's developments on money and interest. In his seminal paper, Fan-Hun stresses important common points between Marx and Keynes.

The first point is that the interest rate is a money rate, which means:

a) That it is not a "real" phenomena but a purely monetary one ; more precisely:

- It is *"not a reward for saving or abstinence as such"* (Fan-Hun, p. 128); Marx is very severe against Nassau Senior and his abstinence theory.
- It is not either a measure of the rate of return on productive (real) capital: the rate of interest must be clearly distinguished from the rate of profit on capital.

Consequently, there is nothing like a "natural" rate of interest, around which the market rate could gravitate, as does the rate of profit. Both analytically and empirically, the rate of interest must be strictly distinguished from the profit rate. The latter does obey to economic laws, where the former is not governed by any law, which makes it an "irrational price[18]". As regards its

[18] « If we want to call interest the price of money capital, then it is an irrational form of price quite at variance with the conception of the price of commodities. The price is here reduced to its purely abstract and meaningless form, signifying that it is a certain sum of money paid for something serving in one way or another as a use value; whereas the conception of price really signifies the value of some use value expressed in money." MECW, Vol 37, p. 352.

relationship with the profit rate, the only "law" is that it cannot be greater than the profit rate. Marx considers:

> *« that there is no such thing as a 'natural' rate of interest. (...) unlike in the case of the general rate of profit, there is no general law to determine the limits of the average interest, or average rate of interest (...) because it is merely a question of dividing the gross profit between two owners of capital under different titles"* (MECW, Vol. 37, p. 362) *"the rate of interest is (...) mostly determined by relations (...) which have nothing to do with profit"* (MECW, Vol. 37, p. 213).

It is governed by nothing else than demand and supply, which in Marx's words means that it doesn't obey to any economic law.

b) That the rate of interest is strictly speaking "the price of money", namely the *« the measure of the difference between the cash price and the credit price until payment is due»* (MECW, Vol. 37, p. 416). *"it is not regulated by this commercial credit* (between entrepreneurs)*, but by the money market* » (MECW, Vol. 37, p. 515), where *"the money capitalist and the productive capitalist really confront one another"* (MECW, Vol. 37, p. 370). At any moment, the rate of interest is the reflection of the balance of power between them. Thus, everything depends upon the circumstances:

> «Where competition as such is the determining factor, the particular rate fixed is accidental, purely empirical, and only pedantry of fantasy would seek to represent this accident as a necessity." (MECW, Vol. 37, p. 361)

> "Customs, juristic tradition, etc., have as much to do with determining the average rate of interest (…) In many laws disputes, where interest has to be calculated, an average rate of interest has to be assumed as the legal rate. If we inquire further as to why the limits of an average rate of interest cannot be deduced from general laws, we find the answer lies simply in the nature of interest. It is merely a part of the average profit." MECW, Vol. 37, pp. 361-362.

Consequently:

> « it would be a big mistake to measure the level of the national rate of profit by, say, the level of the national rate of interest" (MECW, Vol. 37, p. 213).

What we must retain is the idea that the interest rate is a "conventional" variable, exactly in the same way Keynes put it later in his *General Theory*.

Independently of the volume of disposable means of payment, the current interest rate depends upon the urgency of the need for cash, jointly with the balance of power between 'financial capitalists' and 'industrialists', both depending upon the prevailing state of affairs.

4-2 A double theory of the interest rate

At this point, the exact positioning of Marx is made ambiguous by what can be called his "double sided theory" of the interest rate, rooted into the double nature of the demand for money. As stated by Mendez (2012), Marx considers that the demand for money can be alternatively a demand for means of payment, or a demand for capital, according to the moment of the business cycle. This distinction is introduced by Marx when he criticises those economists who argue that during a crisis there is a lack of capital. On the contrary, the crisis outbreak is the moment of abundance of unconvertible capital. During the boom, the demand for money as capital is widely dominant, and can be easily satisfied, jointly by bank credits and finance. Banks deposits are expanding, and easy credit goes along with an affluence of loanable capital. As stated by Marx:

> "It is doubtless true that a tacit connection exists between the supply of commodity-capital and the supply of money-capital, and also that the demand of the industrial capitalist for money-capital is determined by the actual conditions of real production" (K3-23, p. 495)

The rate of profit and the rate of interest are both increasing, the former more than the latter. The supply of money keeps in line with the growth of capital. In such times of prosperity, the quantity of the circulating money grows" for 3 reasons:

- A greater proportion of payments is realized through credit expansion; Marx had in mind a growing amount of bills of exchange and other forms of commercial credit, and as we already pointed, he ignored bank credit; but all he says about commercial credit can be *mutatis mutandis* extended to bank credit;
- The increased velocity of circulation;
- Last but not least, the quantity of money depends upon the intensity of circulation; Marx is clearly (with Tooke) on the side of endogenous money:

> « We have already demonstrated in the discussion of simple money circulation that the mass of actual circulating money, assuming the velocity of circulation and economy of payments as given, is determined by the prices of commodities and the quantity of transactions. The same law governs the circulation of notes. » (MECW, vol 37, p. 519)
> « Note circulation is just as independent of the state of the gold reserve in the vaults of the bank which guarantees the convertibility of these notes, as it is of the will of the Bank of England. » (MECW, Vol 37, p. 523)
> « Hence only the requirements of business itself exert an influence on the quantity of circulating money-notes and gold. » (MECW, Vol 37, p. 523)

On the whole, the expansion phase goes along with plethora of liquidity. But, as we shall see below in section 5, in the course of prosperity, the financial structure is less and less robust, because of the growing importance of speculative enterprises and the rise of fictitious capital. During the monetary crisis, it is exclusively a demand for money as mean of payment, a demand for pure liquidity, provided by the banking system:

> In times of stringency, the demand for loan capital is a demand for means of payment and nothing else; it is by no means a demand for money as a means of purchase. At the same time, the rate of interest may rise very high, regardless whether real capital; i.e., productive and commodity capital, exist in abundance or is scarce. The demand for means of payment is a mere demand for convertibility into *money,* so far as merchants and producers have good securities to offer; it is a demand for *money capital* whenever there is no collateral, so that an advance of means of payment gives them not only the *form of money* but also the equivalent they lack, whatever its form, with which to make payment. (MECM, Vol 37, 1894, p. 513)

This leads to the idea that there are two different mechanisms of determination of interest rates, depending on the phase of the cycle. During the boom, the interest rate depends on the supply and demand for loanable capital. On the contrary, once the crisis burst, when capitalists are seeking to settle their debts, demand is nothing else than a demand for means of payment. Monetary distress has succeeded to liquidity plethora, and the preference for liquidity becomes "absolute". The interest rate is then determined by liquidity market conditions, it depends directly on the amount of money available.

Mendez (2012) suggests a representation in which the total demand for money is the sum of two distinct demands: a demand for cash (Lp) and a demand for capital (Lk) designed for making payments and investing respectively. Lk raises faster than Lp when production is also rising, and Lp raises faster than Lk – which can even fall to zero – when production and investment are declining.

4-3 Loanable funds or cash balances? Marx at the crossroads

Marx's monetary view of interest have induced some authors to consider that *« Marx's entire interest theory (...) may be a modern monetary one ahead of its time"* (Bronfenbrenner, 1967, p. 628). But he is closer from Smith than from Keynes. For him, money is not desired as a store of value, and the trade-off is not between money and bonds. The demand for money is not a demand for bank deposits (hoardings). As we have seen it is desired as a means of (re)payment. But in numerous passages, Marx' notion of « money market » seems to refer to the financial market:

> "in the money market all loanable capital continually faces functioning capital as an aggregate mass, so that the relation between the supply of loanable capital on one side, and the demand for it on the other, decides the market level of interest at any given time." (MECW, Vol. 37, p. 364)

Fan-Hung (1939) recognizes the ambiguity of Marx's statements, which sometimes sound as a robertsonian theory of loanable funds, but nevertheless suggests that "Marx's theory can be correctly interpreted as a typical bank-loan theory" (ibid. p. 134). This thesis is based upon the statement by Marx that:

> "The variations in the interest rate (…) depend upon the supply of loan capital (…) that is, of capital loaned in the form of money, coin and notes (…) However, the mass of this loanable money capital is different from, and independent of, the mass of circulating money. For example, if £20 were loaned five times per day, a money capital of £100 would be loaned." (MECW, Vol. 37, pp. 497-498)

The only way to save Marx from being a "minor post-ricardian" as suggested by Samuelson is to interpret his "monetary interest rate" as a bank rate. Marx doesn't stand steadily on this line, but it is the more consistent with the fact that the rate he is interested in is "commercial interest, that is, interest calculated by the money lenders for discounts and loans within the commercial world" (MECW, Vol. 37, p. 509)

Four arguments sustain this view:

1) In the whole range of interest rates, the bank rate is the one depending on the balance of power between lenders and loaners; credit conditions are always singular, i.e. specific to each borrower ;
2) The banks are the only actors providing all kinds of money needs: for (re)payments and for capital requirements;
3) Money capital is concentrated in the hands of banks; the volume of circulating money consists in greater and greater proportions in current deposits and saving booklets
4) What is needed in the "Minsky moment" and in the course of crisis is not long run funding but cash money for instant (re)payments.

5- Financial instability and the path to the crisis

5.1 Ambivalence of the credit system

The main purpose of this paper is to show that for Marx both in the development and in the outbreak of the crisis, the mechanisms of credit are of central importance. We have already shown in section 2 that in the outbreak of the crisis, the 'monetary moment' described by Marx is very similar to the 'Minsky moment'. In this section we will focus on the ambiguous effects of the credit system over the accumulation process. The second section also showed that credit was at the heart of the most abstract vision of crises, i.e. the formal possibility of crisis. But credit is also central in the explication of real crisis, as Marx puts it:

> But now the further development of the potential crisis has to be traced-<u>the real crisis can only be deduced from the real movement of capitalist production, competition and credit</u>-in so far as crises arises out of the special aspects of capital which are peculiar to it as capital, and not merely comprised in its existence as commodity and money. (Marx, 1905, t.2, pp. 512-513, we underline)

The analysis of the conditions of production, regardless of the mechanisms of credit does not provide for the understanding of the developments which leads to the crisis. This quote is from the section of the *Theories of Surplus-Value* where Marx presents the formal possibilities of the crisis. He then points out that by moving from the abstract view of crises to the analysis of the mechanisms explaining crises, credit analysis remains central. All along his work, Marx devotes many passages to the relationship between the credit system and the accumulation of capital. From these passages, it follows that credit has strong effects on the process of accumulation, both stimulating and destabilizing. The credit system preceded the capitalist mode of production, but it is undergoing symbiotic development with it. Marx then describes a reciprocal stimulation between increasing production and developing the credit system. The credit system allows individual capitalists to invest beyond the limits of their own capital, allowing the increase of the scale of production, which leads in turn to an increase in the capitalist's reserve funds, which constitute the basis on which the credit system is developed[19]. It also accelerates the movement of capital towards the most productive spheres.

At the same time, the credit system appears as a destabilizing factor, Marx even considers it one of the most powerful destabilizing factors for the economy[20]. First, the credit system exacerbates the contradictions of capitalist production. As Marx puts it:

> The credit system appears as the main lever of overproduction and overspeculation in commerce solely because the reproduction process, which is elastic by nature, is here forced to its extreme limits, and is so forced because a large part of the social capital is employed by people who do not own it and who consequently tackle things quite differently than the owner, who anxiously weighs the limitations of his private capital in so far as he handles it himself. (MECW, Vol 37, 1894, p. 438)

In this case, the credit system only exacerbates the already existing tendencies towards over-production, given the elastic nature of the reproduction. It gives lead to the over-extension of the expansion and to the deepening and expanding of the contradictions of capitalist production. It does so by allowing the industrial capitalist to restart production before selling his production. This aggravates the tendency towards overproduction, by masking existing distortions and thus delaying the outbreak of the crisis, which contributes to its deepening. In book II of *Capital* Marx confers to the merchant capital a similar effect, by creating an artificial demand. Here, he also considers that capitalists operating with loaned capital undertake riskier operations. In this sense, credit merely exacerbates existing trends presented by Marx when he considered capitalists operating with their own capital. Toporowski (2005) and Clarke (1994) considered that Marx does not go any further in his inquiry on the effects of credit on production.

On our part we would insist with Duménil and Levy (2006), that Marx's vision of finance involves a notion of fragility, which is of highest importance for the analysis of crises. As a matter of fact, Marx describes the increasing vulnerability of the economy as a result of

[19] See Lapavitsas (1997) for a presentation of the four sources of hoarding in the capitalist process of accumulation and their role in the development of the credit system.
[20] "But at the same time, banking and credit thus become the most potent means of driving capitalist production beyond its own limits, and one of the most effective vehicles of crises and swindle." MECW, Vol 37, p. 602.

the development of the credit system. The most extended it is the less resilient is the economy. First, the credit system tends to concentrate all reserve funds in the hands of banks, which makes them available for production through credit:

> The loanable capital which the banks have at their disposal streams to them in various ways. In the first place, being the cashiers of the industrial capitalists, all the money capital which every producer and merchant keeps as a reserve fund, or receives in payment, is concentrated in their hands. These funds are thus converted into loanable money capital. In this way, the reserve fund of the commercial world, because it is concentrated in a common treasury, is reduced to its necessary minimum, and a portion of the money capital which would otherwise have to lie slumbering as a reserve fund, is loaned out and serves as interest-bearing-capital. (MECW, Vol 37, 1894, p. 400)

The economy as a whole is experiencing a shrinking of its reserve's funds[21]. Thanks to their concentration in banks, these funds are increasingly being transformed into interest-bearing capital. It implies that the development of the credit system leads the individual capitalist to an increasing dependence on banks for daily operations and in case of difficulty. For the economy as a whole this means that on the one hand the reserves funds are decreasing and on the other hand the interconnection and interdependence between capitalists are increasing[22], which means a decreasing capacity of resilience, and growing systemic risk. The growing danger for the individual capitalist becomes a systemic risk through the interconnection of balance sheets. It should be stressed here that Marx is addressing long trends in the capitalist economy and not during any phase of the cycle. In other words, he considers that the development of the credit system makes the economy more and more unstable in the long run. As Marx puts it:

> But it is precisely the development of the credit and banking system, which tends, on the one hand, to press all money capital into the service of production (or what amounts to the same thing, to transform all money income into capital), and which, on the other hand, reduces the metal reserve to a minimum in a certain phase of the cycle, so that it can no longer perform the functions for which it is intended - it is this developed credit and banking system which created this <u>over-sensitiveness</u> of the whole organism. (MECW, Vol 37, 1894 pp. 566-567, we underline)

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[21] « Payment in their turn necessitate reserve funds, accumulations of money as means of payment. The formation of reserve funds, unlike hoarding, no longer seems an activity extraneous to circulation, or, as in the case of coin reserves, a purely technical stagnation of coin; on the contrary money has to be gradually accumulated so as to be available at definite dates in the future when payments become due. Although with the development of bourgeois production, therefore, the abstract form of hoarding regarded as enrichment decreases, the form of hoarding necessitated by the exchange process itself increases; a part of the wealth which generally accumulates in the sphere of commodity circulation being drawn into reserve funds of means of payment. The more advanced is bourgeois production the more these funds are restricted to the indispensable minimum. Locke's work on the lowering of the rate of interest contains interesting information about the size of these funds in his time. It shows how substantial a proportion of the money in circulation in England was absorbed by the reserves of means of payment precisely during the period when banking began to develop. » MECW, Vol 29, 1859, p. 379

[22] « But since the credits are mutual, the solvency of one depends upon the solvency of another; for in drawing his bills of exchange, one may have counted either on the return flow of the capital in a third party's business whose bill of exchange is due in the meantime. Aside from the prospect of the return flow of capital, payment can only be possible by means of reserve capital at the disposal of the person drawing the bill of exchange, in order to meet his obligations in case the return flow of capital should be delayed. » MECW, Vol 37, 1894, pp. 478-479

It is now clear that Marx sees the development of credit, banking and financial systems as a major ingredient in the crisis of capitalism, and not just as an aggravating factor of real instability. It is therefore not possible to reduce Marx's crisis theory to a purely real theory, in which money, credit and finance are neutral. On the contrary, he even points out that the credit system leads to what he called "over-sensitiveness" of the economy. This over-sensitiveness is characterized by increasing interdependence of individual capitalists and increasing fragility of the financial system. The increasing credit vortex makes the economy more and more vulnerable, increasing the risk that a local difficulty will turn into a general crisis. This local difficulty may of course come from the real sphere. It may consist of a decrease in the profit rate that makes it impossible to cover the interest on the debt, as the latter is based on higher profit expectations. But this "over-sensitiveness" can also lead to a crisis through purely financial mechanisms. This is the case, for example, when individuals without capital borrow and increase the interest rate. This point is addressed in detail in the following section. The rise in the interest rate prevents some sectors from continuing their production, as the profit they obtain is no longer sufficient for the current level of interest. The capitalists' dependence on debt can then lead to a breakdown in the payment chain. Thus, these elements make it possible to consider the reconstruction of a theory of financial instability derived from Marx, to do so, we will use a comparison with Minsky's weakening of the financial structure.

5.2 A Marxian version of Minsky's financial instability hypothesis?

We insisted above that in Marx thought financial mechanisms are a source of economic instability. We shall now examine if the mechanism of financial instability as seen by Marx is similar to Minsky's hypothesis of financial instability. This comparison will help us to clarify Marx' ideas. As Marx did, Minsky (1986) seeks to show that the capitalist mode of production is fundamentally unstable. Both are in search of an endogenous theory of crises. However, Minsky believes that this instability is essentially based on the financial mechanism. He describes the path to the crisis as the progressive and unavoidable evolution of the financial structure from a robust to a fragile regime. Minsky identifies 3 types of financial structures, or "financing regimes, characterized by different relations between cash payment commitments on debts and expected cash receipts" (Minsky 1986, p. 206)":

- Hedge structures, in which the current expected profits exceed all financial commitments for any maturity; financial commitments are predominantly due to long run debts;

- Speculative structures are those whose current realized profits are smaller than their short run commitments, but sufficient for paying interests, while the anticipated receipts in the long run exceed future commitments. For such a speculative structure it is necessary to reschedule the outstanding debt for facing immediate repayments; thus "Speculative finance involves" both the "rolling over of maturing debt" and "the short financing of long positions" (Ibid. p. 207).
- Shaky[23] structures are those who cannot even face interest payments, so that it is necessary to increase "the face amount of outstanding debt" (Ibid.). Shaky units have to "capitalize interest into their liability structure" (ibid.). Thus the "equity-debt ratio on the balance sheet deteriorates" (Ibid P. 208).

For Minsky, "The mixture of hedge, speculative and shaky finance in an economy is a major determinant of its stability" (Ibid. p. 209). Indeed, hedge financing units are "vulnerable only to cost escalation or to revenue decline", while speculative arrangements are also vulnerable to financial-market developments, and shaky financing units suffer a deterioration of its balance sheet. When the proportion of shaky finance is too large, the whole financial system is Minsky thesis is that any prosperous economy is led to evolve from financial robustness to financial fragility, because of the spontaneous tendency of "banks, other financial institutions, businesses and households" to "seek new ways to finance activities" (Ibid., p. 198). Thus, the proportion of shaky finance increases, as well as interdependence between capitalists and economic vulnerability. At that time, even a small disruption is enough to trigger the financial crisis.

After this brief presentation of Minsky's hypothesis of financial instability, the question arises as to whether the financial mechanisms described by Marx fall within this framework. We stressed above, through his notion of "over-sensitiveness" of the economy, that he fully takes into consideration the fact that the fragility of the financial structure might endanger the accumulation of capital. He is aware that increasing interdependence reduces the resilience of the economy. What we have now to examine is whether he considers that the period of prosperity is necessarily accompanied by a weakening of the financial structure. Several statements go in this direction:

> In this state the rate of interest is still low, although it rises above its minimum. This is, in fact, the *only* time that it can be said a low rate of interest, and consequently a relative abundance of loanable capital, coincides with a real expansion of industrial capital. The ready flow and regularity of the returns, linked with extensive commercial credit, ensures the supply of loan capital in spite of the increased demand for it, and prevents the level of the rate of interest from rising. On the other hand, **those cavaliers who work without any reserve capital or without any capital at all and who**

[23] Minsky uses the term of « Ponzi » regimes, which refers to a particular episode of the 20's in the American financial history ; for that reason, we prefer the characterization as « shaky ».

> **thus operate completely on a money credit basis begin to appear for the first time in considerable numbers.** (MECW, Vol 37, p. 487, we underline)

This description of the period of prosperity is in some ways similar to Minsky's. The increasing demand for loanable capital does not push upwards the rate of interest, thanks to the regularity of the repayments ensuring the supply. In this period of low interest rates and rapid expansion, Marx describes the emergence of "cavaliers" of credit. Those "cavaliers" – less and less cautious operators entering the market - are similar to Minsky's shaky finance. Marx does not define them in terms of refinancing conditions, but by the absence of own capital. But the outcome is the same, they are dependent on the conditions of debt refinancing in case of difficulty. In Marx's own words, they appear in "considerable numbers" in the period of prosperity, increasing the fragility of the system. As with Minsky, these cavaliers appear in large numbers as a consequence of the high profit opportunities offered by the boom and the easy access to credit. Marx points out the rise of speculative projects in period of prosperity in several passages:

> The same phenomenon (and this usually precedes crises) can appear when additional capital is produced at a very rapid rate and its reconversion into productive capital increases the demand for all the elements of the latter to such an extent, that actual production cannot keep pace with it; this brings about a rise in the prices of all commodities, which enter into the formation of capital. In this case the rate of interest falls sharply, however much the profit may rise and this fall in the rate of interest then leads to the most risky speculative ventures**.** (Marx, 1905, T.2, pp. 494-495, we underline)

In this extract Marx discusses the variation of the interest rate during the cycle; he describes a situation of rising profit rate and decreasing interest rate, and he relates it with the emergence of "risky speculative ventures" (shaky arrangement in Minsky's words). Again, this description is very similar to Minsky's. Both authors have in mind the notion of increasing risk during the boom[24]. We stressed above that according to Minsky the period of prosperity generates profit opportunities by engaging in speculative or shaky finance, inducing the transition from a robust financial system to a fragile financial system. The mechanism described by Marx is not of a different nature. He describes the moment of economic expansion, when the high perspective of profit and the low rate of interest lead to speculative ventures. This period can be characterized as a robust financial system in Minsky's words, with a majority of hedge financial units. In a second phase the period of prosperity emphasizes the proliferation of "cavaliers" undertaking "risky speculative ventures", i.e. the switchover to a fragile financial system. Marx repeatedly described those mechanisms throughout his work.

[24] We can suggest that Michaël Kalecki, who first introduced this notion in macroeconomics, found it in Marx's writings.

The appearance of the "cavaliers", and therefore the weakening of the financial structure, has a direct effect on the interest rate. As mentioned above, rising interest rates in the context of "over-sensitiveness" may be sufficient to trigger a financial crisis. We then have financial crises that result from the trend towards over-indebtedness. They occur when the increase in the interest rate, implied by those same mechanisms, no longer makes it possible to continue to rely on credit to meet the financial commitments. The payment chain is then broken, and the financial crisis can turn into a general crisis. We then have financial mechanisms that endogenously lead to crises.

Concerning the outbreak of the crisis, he described it as a demonstration of the risky or even fraudulent nature of these operations:

> On the other hand, the whole process becomes so complicated, partly by simply manipulating bills of exchange, partly by commodity transactions for the sole purpose of manufacturing bills of exchange, that the semblance of a very solvent business with a smooth flow of returns can easily persist even long after returns actually come in only at the expense partly of swindled money lenders and partly of swindled producers. (MECW, Vol 37, 1894, p. 483)

He also criticizes the inability of operators to recognize the growing risk:

> The best proof of this is furnished, for instance, by the Report on Bank Acts of 1857 and 1858, in which all bank directors, merchants, in short all the invited experts with Lord Overstone at their head, congratulated one another on the prosperity and soundness of business-just one month before the outbreak of the crisis in August 1857. (MECW, Vol 37, 1894, p. 483)

And again:

> At the same time, an enormous quantity of these bills of exchange represents pain swindle, which now reaches the light of day and collapses; furthermore, unsuccessful speculation with the capital of other people; finally, commodity capital which has depreciated or is completely unsaleable, or returns that can be never more be realised again. (MECW, Vol 37, 1894, p. 489)

The crisis is the moment when the fragility of the financial system comes to light. The speculative projects and the fraudulent operations are revealed. It should be noted that speculative and fraudulent operations are not equivalent. Speculative projects expect the profit to be high, and difficulties arise when the profit realised is much lower. In the case of fraudulent transactions, borrowers are repaid with new loans. Only the latter correspond to Ponzi schemes, but Minsky integrates both into Ponzi finance. In this section we have shown that Marx address some mechanisms of financial instability. These mechanisms can be seen as a theory of the weakening of the financial structure in the light of Minsky's hypothesis of financial instability.

Marx acknowledges the possibility of autonomous financial crises. The mechanisms of these autonomous financial crises can be outlined here by the action of "cavaliers" and the notion of "over-sensitiveness". Indeed, the increasing fragility of the financial system and the emergence of cavaliers are causing an increase in the interest rate which can be the trigger of a crisis. Marx makes this point while commenting Lord Overstone interpretation of the 1857 crisis:

> As for the high rate of interest paid in 1856, Overstone was indeed ignorant of the fact that this was partially a symptom that the credit jobbers were coming to the fore, who paid interest not from their profit, but with capital of the others; he maintained just a few months before the crisis of 1857 that "business is quite sound". (MECW, Vol. 37, 1894, p. 419)

However, contrary to Minsky, the outbreak and the path to the crisis cannot be addressed with an exclusive focus on the financial structure. Autonomous financial crisis are special cases; the "regular" case is that of a non-sustainability of reproduction, which is fostered and potentially aggravated by the rise of fictitious capital.

6- Financial crisis and reproduction crisis: Hilferding's connection

For Marx, financial cycles of rise and burst of fictitious capital cannot be analyzed independently of the distortions occurring in the productive sphere, namely the sectoral structure of capital. The analysis of capitalist crisis cannot be confined to real phenomena in the productive sphere, but symmetrically financial instability cannot be understood without considering how it is linked to the trends of capital accumulation. So, we must now link the "monetary moment" of crisis with the disproportionality crisis theory, based upon the reproduction schemes, and the falling rate of profit theory. Crotty (1985) only considers the latter and argues for an integration of the financial instability mechanisms with the falling rate of profit. In a similar way, we consider that Marx's insights about crises always integrate both spheres of production and finance.

6.1 – Financial commitments and the falling rate of profit

First, we'll discuss the possibility, defended by Crotty, of integrating the weakening of the financial structure into the falling rate of profit theory. During the growth period, we have seen that the financial structure is evolving in three directions: a rising interest rate, increasing interdependence between capitalists and an increasing risk of default. At the same time, growth bears the characteristics that lead to a decline in the profit rate, according to the falling rate of profit theory. The law of the falling of the rate of profit tells us that the expansion of capitalist production leads to an increase in the technical composition of capital, leading to an increase in the organic composition of capital, which in turns lead to the decline of the rate of profit, and thus to over-accumulation crises. Marx presents a number of counter-tendencies to the law. Among these, it is worth noting the development of financial markets. Indeed, he considers that the development of the equity market leads important groups of capitalists to be satisfied with a dividend remuneration, designed as lower than the profit rate and allowing the others to maintain their profit rate. Independently of the validity of the law, which is highly dubious[25], the rate of profit is a crucial variable for analyzing the fluctuations of a capitalist economy. The coexistence of these two phenomena (the weakening of the financial structure and the falling of the profit rate) might explain why the decline in the profit rate-for any reason including increases in wages or raw material prices-is increasingly likely to lead to a crisis, and even a generalized crisis as a result of the interdependence caused by the credit system. The danger comes from the development of credit relationships in the economy, making it more vulnerable to changes in the profit rate. In several passages, Marx highlights the danger of the rigidities resulting from the interest-bearing capital[26]. According to him, the rate of profit is fundamentally uncertain. This uncertainty can lead to crisis when the rate of profit actually realized does not allow the financial commitments to be met. Describing a scarcity of raw materials, making it impossible to maintain production on the same scale, Marx states:

> The rate of profit falls because the value of constant capital has risen as against that of variable capital and less variable capital is employed. The fixed charges -interest, rent- which were based on the anticipation of a constant rate of profit and exploitation of labour, remain the same and in part cannot be paid. Hence crisis. Crisis of labour and crisis of capital. (Marx, 1905, vol2 p. 516)

Marx thoroughly scrutinizes the relationship between the variation of the rate of profit and the credit system. His notion of "over-sensitivity" implies that the period of prosperity makes the economy more and more vulnerable to smaller and smaller variations of the rate of profit. Then, the growth period bears the mechanisms of weakening the financial structure and lowering the profit rate. The above quotation from Marx, where the crisis is explained by an increase in the price of raw materials, can be considered as an explanation of an event such as an oil shock. Any factor affecting the profit rate weakens the resilience of the economy. Thus, the weakening of the financial structure makes it possible to relate downward fluctuations of the profit rate to the outbreak of crises. Indeed, without an analysis of the financial structure, the fall of the rate of profit do not provide any explanation for the outbreak of the crisis. It can only explain a slowdown in accumulation and possibly a march towards secular stagnation. It is not sufficient to note that unemployment should rise in such a situation, because in a capitalist economy, economic crisis means crisis for capitalists, i.e. an interruption in the process of reproduction. More unemployment doesn't threaten the economic sustainability of the productive system.

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[25] Van Parijs (1980) criticizes the three mechanisms of the law. The increase in the technical composition of the capital, the increase in the organic composition of the capital and the link between the fall in the profit rate and the crisis. Here we consider only to the third point of his critique.

[26] « But society includes classes with fixed incomes, THE MONEYED CLASS, etc., creditors and so on, hence there are fixed deductions from surplus value or profit which do not fall with the reduction in the rate of profit or the fall of the prices of commodities beneath their value.» MECW, Vol. 32, p. 92

With the idea of a weakening financial structure, the trigger of a crisis with the fall of the rate of profit makes sense. This leads to the consideration of an evolution of the financial structure towards a growing fragility to variations in the profit rate, due to the growing interdependence between capitalists, the rise of interest rates and the growing proportion of “cavaliers” and “risky ventures”, increasing the default risk. In the section of Capital devoted to the falling profit rate, Marx himself refers to the disruption of the payment chain as the trigger for the crisis[27]. As we have seen above, this breakdown in the payment chain is made more and more likely with the development of the credit system during the expansion. If the “falling rate of profit” explanation is rejected, the connection between the growing difficulties of production and financial fragility is still to explain.

6.2- The weakening of the financial structure and disproportionalities

The other way is to integrate the weakening of the financial structure with the disproportionality theory of crisis. The challenge there consists in connecting section V with book II. In the disproportionality theory of crisis, the main problem is to understand how the disproportion actually degenerates into a crisis. Marx makes few suggestions on this subject. However, the consideration of financial mechanisms makes it possible to answer this question. As stated by Tutin (2006), such a combination of this theory with the analysis of financial mechanisms was attempted by Hilferding (1910). However, his attempt to synthesize books II and III of *Capital* into a unified theory of crisis did not inspire any successor and his theory remained without further development. His influence on the development of Marxism was much more concerned with his analysis of finance capital, monopolies and imperialism than with his theory of crises. More recently, his book inspired analysis of the power of finance rather than financial crises. However, his theory provides a key to the understanding of the joint development of the credit system and disproportionalities. It is worth noting that he does not reject the falling profit rate theory but does not either consider it as an explanatory element of periodic crises, since the law is a long-term trend of capitalism. He explains the rise of disproportionality by the distortion of the structure of price. Economic booms always start from an initial rise in investment, which means a higher demand for capital goods and a rise in their relative prices. The subsequent rise in the sectoral profit rate makes the sector more attractive, and the banks are prone to allocate more credit to it, while capital values are over-estimated on stock markets. Thus, the industrial capitalist can restart production without worrying about

[27] See quotation above page 5.

having unsold commodity capital accumulating. This leads to over-investment in this sector, which is only effective when products reach the market. The producers of capital goods adapt their prices, and therefore their rate of profit, more slowly because of their higher organic composition. However, the aggravation of the disproportion till the point where it can only be solved by a crisis is the result of the credit system, because of the disconnection it brings about between the production process and the realization of profit in the sphere of circulation.

What is important for our purpose is that Hilferding establishes a link between the development of credit and the emergence of disproportions. The crisis stems from a gradual drying up of credit, with a corresponding increase in interest rates, which impedes from going along the expansion of capital goods production. The crisis erupts at the moment when banks' reserves are threatened, so that they are obliged to restrict their credit[28].

The difference with Marx is that Hilferding considers the whole mechanism as being determined by the behavior of the banks, hardly ever studied by Marx. And the rate of interest under consideration in *Finance Capital* is undoubtedly a short run bank rate. But as we have shown before, Marx presents a theory of the weakening of the financial structure which can be easily integrated into this framework. In this interpretation, the crisis appears when the financial system becomes so fragile that it can no longer hide disproportions in the productive sphere. The challenge here is to integrate the financial mechanisms that have been identified in Marx's work with those elements of Hilferding's work using the reproduction schemes. This integration should make it possible to describe finance-led business cycles in which mechanisms on financial markets and in production lead to the crisis through their interactions. The economic cycle always begins with the liquidation of the previous crisis. In this phase, reproduction is carried out on a restricted basis, both the profit rate and the interest rate are standing at their lowest level. The interest rate is low due to the abundance of money capital, because the demand for credit by active capitalists is almost inexistent. The financial structure is sound, and the productive structure is balanced. Accumulation can restart as soon as new perspectives of profit appear, whether as a result of renewed confidence, technical improvements, opening of new markets or other factors. At this point, the balance of power on the money capital market is totally in favor of active capitalists and the displacement of capital flows[29] towards new investment opportunities can be sustained by the banking system without reluctance. At the

[28] Marx also consider that the crisis erupts when bank balance sheets are shaken. “On the other hand, it is clear that as long as the credit of a bank is not shaken, it will alleviate the panic in such cases by increasing credit money and intensify it by contracting the latter. » MECW, Vol 37, 1894, p. 514

[29] This expression is taken from Kindelberger (1989).

same time all the mechanisms that lead to the weakening of the financial structure and disproportions are set in motion. On the productive side, the over-accumulation of capital goods described by Hilferding is taking place but is supported by the development of the credit system, which masks disproportions. Reproduction then takes place on a larger scale; the rate of profit is high, and disproportions are increasing. The hiding of disproportions leads to an increasing use of credit as they grow. The demand for money capital is increasing, and it can be met without increasing interest at the beginning of the expansion. Indeed, the ease of inflows makes it possible to maintain the supply of money capital. However, as we described above, with the development of expansion, the "cavaliers" appear. They lead to an increase in the demand of money capital, while increasing the risk of default. A growing part of the demand of money capital is used to mask disproportions and another part is used to engage in Ponzi finance. Ponzi finance then lead to a deterioration of inflows, banks then begin to reduce their supply of money capital and the interest rate increases. The balance of power is moving in favor of money capitalists/banks, while the economy is experiencing a weakening of the financial structure. The economy is then facing an increase in interest rates, increasing disproportions, increasing interdependence between capitalists, a proliferation of credit "cavaliers" and a gradual drying up of credit. The various mechanisms at work are self-sustaining, and the crisis breaks out when the banks stops lending to the most fragile borrowers (might be traders, speculators, raw material producers). At that time, the banks are in a position to dictate their conditions to the active capitalists. Thus, the interest rate reaches its maximum level. The crisis erupts because the active capitalists are dependent on credit, indeed the disproportion leads to a mass of unsold commodity capital. The chain of payments is broken, and interdependence explains the systemic nature of the crisis.

So, integrating the "financial weakening" hypothesis with the theory of disproportions, offers a global pattern of crises rooted in the interaction between the productive sphere and finance. Financial mechanisms make it possible to understand the worsening of disproportions, without major consequences at first, and how it leads, through the weakening of the financial structure, to the "momentary moment" of any crisis, when the rise in interest rates, the subsequent financial krach and the end of credit activate the outbreak of the crisis.

Conclusions:

Does Marx offer something useful for understanding contemporary economic crises? If yes how does it differ from current economic views? One reason for hesitating is the growing weight of financial factors in recent crises. What we showed in this paper is that Marx works contain an impressive amount of developments on financial instability. It is true that those developments are almost exclusively made of non-published draft manuscripts and therefore their unachieved character makes sometimes difficult their interpretation. This explains why most commentators including numerous Marxian economists have neglected this part of his work.

The concepts (moneyed capital, money-dealing capital, interest-bearing capital or fictitious capital) are sometimes redundant, ambiguously defined and their link with other pieces of Marx' economics is not clearly established. In this paper we intended to show that a rational reconstruction is possible and that Marx far from neglecting banking and finance in his theory of crises gives them a crucial importance for assessing endogenous economic instability.

For Marx the beginning of any crisis is the "Minsky moment" of liquidity crisis. As we have showed, Marx gives a rather clear account of the mechanisms leading to a fragile financial structure. His notion of "over-sensitivity" of the productive structure to financial shocks is very similar to Minsky's financial instability hypothesis. He describes the evolution of the economy from a robust financial structure to a shaky financial regime.

Yet a number of things are missing, mainly a consistent theory of the interest rate and the formal link between 'real' and 'financial' dimensions of crises. Contrary to Minsky, economic crises are fundamentally explained by the unsustainability of the productive sphere, and purely financial crises are mere exceptions. But the 'real' unsustainability arises from the fragilization of the financial structures.

What we suggested is that the link between the productive and the financial spheres could be established through the role played by bank credit and the financial markets in the enlargement and distortion of the reproduction process which are the causes of disproportionalities in the productive system. This research agenda was first proposed by Rudolf Hilferding in his *Finance Capital.* Further developments require new analysis of banking, the money rate of interest and the determination of prices.

No doubt the ignorance of money and finance is the main limit of current macroeconomics. Marx doesn't offer an achieved theory of crises including 'real' and 'monetary' dimensions, but his merit remains to have settled some lineaments for such a theory.

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