MONEY IN THE CIRCULATION OF CAPITAL

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ABSTRACT

The paper examines Marx's explanation of the functions money must perform in the circulation of capital. From his analysis of turnover, Marx concludes that capital must occupy all three of its forms simultaneously. Although money is the means of circulation, the money form of capital can be no less transient than capital's other forms. Money hoards must exist alongside capital in its productive and commodity forms. This demonstration that circulation of capital requires hoarding adds to the reasons why money is necessary. It is, in addition, the foundation for Marx's explanation of the credit system. Capitalists transform their hoards into interest-bearing capital in order to claim an additional share of surplus value. As a result, money capital is concentrated in banks and the bond and stock markets. By analyzing the capitalist process of reproduction apart from the credit system, Marx shows that the possibilites for the disruption of this process are not limited to problems resulting from debt and the conditions of credit. In arguing that the credit system develops so that capital in its money form can appropriate surplus value, Marx rejects the claim that it develops to solve the problem of the shortage or high cost of gold money. On these grounds he maintains that the credit system complicates, rather than simplifies, capitalist reproduction and renders it more precarious.

INTRODUCTION

In Volume I of Capital, Marx explains money as the necessary counterpart to the mass of commodities one observes in capitalist societies. Money is necessary, he argues, because all commodities must have one and the same equivalent in exchange. Here, Marx takes the presence of commodities for granted. As he will argue later in Volume I, generalized commodity production (or generalized production for sale) occurs only in capitalism. By then, however, he has left the topic of money. It is not until Volume II, therefore, that Marx considers money in the context of the relation between wage labor and capital. The theory of money in Volume II, is about the new features that emerge from this standpoint: the features of money as a form of capital.

The circulation of capital presupposes monetary circulation along a different path than simple circulation. It also presupposes the interruption of monetary circulation, or the formation of money hoards. The hoards required for the circulation of capital are amassed for the sole purpose of being spent at a later time, that is, for eventual use as means of circulation. For reasons inherent in the circulation of capital, however, spending must be discontinuous and value accumulated independently of capital in its productive form.

As befits the argument of a middle volume, this develops themes of Volume I of Capital and provides the grounds for Marx's explanation of the credit system in Volume III. The reasons that hoards are required for the circulation of capital add to Marx's case that money is necessary. They are, in other words, additional reasons why moneyless exchange is not merely inconvenient but impossible in capitalism. Further, that the circulation of capital requires both the circulation and hoarding of money, provides additional evidence for the case Marx makes in Volume I, that these two functions of money mutually require rather than contradict each other. As for the link with Volume III, Marx argues that the hoards required for the circulation of capital are the source of funds in the credit system (the banking system and stock and bond markets). By showing, in Volume II, that the conditions for reproduction are unlikely to be met, Marx establishes that the circulation of capital is subject to disruption for reasons that have nothing to do with the state of credit. Based on the uses of hoards Marx identifies in Volume II and his case that these hoards are the supply of loanable funds in the credit system, he can explain why disruptions in the circulation of capital are manifested in credit conditions whatever their original source.

1 ASSUMPTIONS

To understand Marx's argument on money, the general assumptions underlying Volume II must be recognized. These are either conclusions Marx takes to have been established in Volume I or prerequisites for analyzing the circulation of capital, the subject matter of Volume II. The principal assumptions in the first group are that capitalist society is consituted by the relationship of wage laborers to capitalists (as in Volume I, Marx abstracts from all other social groups, postponing their consideration until Volume III), that wage labor is the source of surplus value, and that the original accumulation has established a monopoly over the elements of production by one group. Marx also takes for granted that capitalist production aims at the creation of surplus value and is, as a result, dynamic and expansionary, tending towards progressively larger scale.

The principal assumption in the second group is that the circulation of capital proceeds "normally." This is capital's transition among its three forms in its "pure state," in abstraction from realization problems, "value revolutions" or "technical revolutions in the production process," fluctuations in the level of economic activity over the cycle, delays in and other "vicissitudes of circulation" that redistribute capital and surplus value among competing capitals (Marx 1885:109, 153, 186, 335, 430, 424).[i] In short, Marx assumes that "value relations remain constant" (187). As he points out, this does not actually happen since "capitalist production is precisely marked by a continuous change in value relations" (153). Such change, however, has nothing to do with what Marx is examining, namely, the "various forms that capital assumes in its circuit and the various forms of the circuit itself" (Part One of Volume II); turnover, or "how, within this flux and succession of forms, a capital of given size is simultaneously divided...into the...forms of productive capital, money capital and commodity capital" (Part Two); and finally, reproduction or how different individual capitals are "interlinked" to "constitute the movement of the total social capital" (Part Three) (429). To identify these aspects of the circulation of capital in their "fundamental form," Marx must set aside all features of capitalist reality that are irrelevant to them (532). Hence the "normal" assumption, although unrealistic, is a necessary tool of analysis.[ii]

A second, closely related assumption is that production is continuous. Marx justifies this assumption on the grounds that "continuity is the characteristic feature of capitalist production...required by its technical basis;" it goes hand in hand with large scale production and the factory system (182, see also 183). Even so, Marx grants that continuity "is not always completely attainable" (182). Continuity, like the normal conditions, is an ideal. Once again also, it is an idealization required by the subject matter of Volume II; the conditions for turnover and reproduction cannot be identified without it. For example, Marx argues that money hoards and inventories are necessary for the circulation of capital because they are necessary for the continuity of production.[iii]

Because of these assumptions, Marx considers the circulation process of capital entirely in terms of industrial capital, abstracting from merchant's and money dealing capital. Industrial capital is the only kind of capital to span the entire circuit of capital or to entail a "unified process of production and circulation" (183). Supposing that capital circulates normally and that production is continuous means that the different forms of capital—money capital, productive capital, and commodity capital—are functionally one capital, as if industrial capital were present by itself. Alternatively, it means that if industrial capital had shed the functions performed by merchant's and money dealing capital and they existed independently of it, the three would act as one, in perfect coordination with each other. Since the normal and continuity assumptions suppress the independent action of merchant's and money dealing capital, their independent existence is trivial and is suppressed as well. Industrial capital is the only kind of capital to include production and, even in its narrow, specialized form, it presupposes circulation. As the only kind to encompass both, it determines the normal functions of the other two. Merchant's capital handles the exchange and inventories of commodities, and analogously, money dealing capital handles the flow and hoards of money. The need for both inventories and hoards, however, is determined by the requirement that production be continuous, hence by industrial capital. Finally, the unity of production and circulation inherent in industrial capital reflects the specifically capitalist source of surplus value, wage labor.[iv] Thus the conclusions drawn from its analysis (including those about merchant's and money dealing capital) apply specifically to capitalism. By contrast, if merchant's and money dealing capital are regarded as equal partners with industrial capital, the results are likely to conflate characteristics of their precapitalist and their capitalist forms. On these grounds, Marx argues that merchant's and money dealing capital "are subordinated to" industrial capital and "move only on its basis" (136):

> "in so far as they appear and function as bearers of their own peculiar branches of business alongside industrial capital, [they] are now only modes of existence of the various functional forms that industrial capital constantly assumes and discards within the circulation sphere, forms which have been rendered independent...through the social division of labor." (136)

Like the normal and continuity assumptions on which it is based, the abstraction from merchant's and money dealing capital is not meant to correspond to capitalist reality. On the contrary, Marx maintains that since "the capitalist mode of production presupposes production on a large scale, so it also necessarily presupposes large-scale sale; sale to the merchant, not to the individual consumer" (190). Similarly, "the development of the credit system," which entails the independent existence of money dealing capital, "necessarily runs parallel to the development of large scale industry and capitalist production" (261, emphasis added). In fact, because developed capitalism presupposes both merchant's and money dealing capital, Marx takes their "existence for granted in illustrating particular aspects of the capitalist circulation process" (191). He abstracts from them to identify the features of that process, however, because they "conceal...various moments of the movement" of capital (191). Several examples of how they conceal this movement will illustrate the rationale for the normal assumption.

Because merchant's and money dealing capital are paid for the functions they perform, they seem to contribute to the value of commodities. Since they are also confined to circulation, the idea that they create value implies that value originates, rather than just changes form, in circulation. The version of this misconception that has had the greatest impact on economic theory is that time, in and of itself, is the source of surplus value. Among the phenomena that seem to support this view is that capitals "in which only circulation times differ, longer circulation time is the basis for higher price" (204). For Marx, differences in circulation time are merely "one of the bases in the equalization of profits" (204). In the absence of Marx's distinction between profit and surplus value, however, they are interpreted as decisive evidence against the labor theory of value and so "led to the complete destruction of the Ricardian school" (373).[v] Marx postpones his solution to this problem until Volume III of Capital, where he explains the profit rate and the other bases for the division of surplus value.

Second, under capitalist conditions, merchant's and money dealing capital carry out fragments of the complete circuit of capital. If they are considered as independent forms of capital, the need for their functions and constraints on their behavior disappear. Thus merchant's capital disguises the necessity of inventories for the continuity of reproduction (see 580)[vi]; money dealing capital disguises both the functions of money hoards and the law of money's circulation.

The previous two problems arise from supposing that merchant's and money dealing capital are capable of standing on their own or are adequate by themselves. Once they are severed from industrial capital, they do, to a limited extent, acquire the capacity to act independently of it. This poses a third difficulty. Their independent action constitutes a departure from their "normal" behavior and, by definition, any such departure disrupts the circulation process of capital. The problem is that, in reality, the disruptions created by the independent action of merchant's and money dealing capital are combined with disruptions inherent in the reproduction of capital. The normal assumption allows these two sources of disruption to be distinguished from each other. Unless they result from the modifications introduced by the independence of money dealing capital, economic disruptions are not caused by money, even though their initial manifestion is often the disruption of financial markets.

The normal and continuity assumptions have been considered at length because they determine the form money must take in the analysis of capital's circulation process. Abstracting from money dealing capital takes the credit system, and so credit money, along with it. In Volume II of Capital, as in Volume I, therefore, Marx proceeds on the assumption that money takes the form of precious metal money, or, to simplify matters, gold. In so far as (in Volume II at least) it has the same source, this assumption should be no more problematic than Marx's abstraction from merchant's capital. Additional reasons for it follow from the particular change the credit system brings about. These will be considered in the next section. The precious metal money assumption can then be evaluated in light of all the reasons for it.

1.1 Precious Metal as The Form of Money

With the development of the credit system, the money reserves of individual capitalists are pooled in banks.[vii] Money reserves are thereby "socialized" in the limited sense that they are shared among capitalists. For Marx, this is the most significant modification associated with the credit system (see 213, 488, 569). Its consequences are the source of Marx's additional reasons for describing the circulation of capital in terms of precious metal money.

First, illustrating Marx's point that the credit system conceals aspects of the circulation of capital, the pooling of money in the banking system makes the movement of money more difficult to trace. The circuits of different capitals intersect when one capitalist draws on money contributed by another. Individual capitals can escape the contraints imposed by the need for hoards because they can draw on the total fund of money capital. In addition, the banking system doubles the effect of money, since both the real money deposited and the record of its deposit in bank accounts can function as means of circulation (see Marx 1894:642). The precious metal money assumption avoids these complications. Thus, among the ways Marx justifies this assumption, he notes that Tooke was "compelled...time and again to look back at how the matter would present itelf on the basis of mere metallic circulation" in order to explain the circulation of credit money (192). Tooke introduces metal money "post festum" and moves back and forth between it and credit money (554). The erratic course of his argument illustrates "the importance of the methodological reasons" for supposing money to be metallic from the start (554). While he accords them significance, Marx adds that they are not his sole reason for the assumption.

As he states:

> It is important above all...to start with metal circulation in its most simple original form, since in this way the flux or reflux, settlement of balances, in short all those aspects [of the circulation of money] that appear in the credit system as consciously regulated processes, present themselves as existing independently of the credit system, and the thing appears in its spontaneous form, instead of the form of subsequent reflection (576-77).

Credit money appears to be "consciously regulated" because it is created by banks. Because the "flux and reflux" of money occurs with the issue and repayment of loans, it appears to be the result of intentional action. With precious metal money, by contrast, monetary circulation appears as "an immanent moment of capitalist production," that is, as one of the interdependent conditions for the circulation of capital (569). This shows that the normal functions of money follow from the nature of capital; they are necessary functions, given what capital is, that it can accomplish only in its money form. Marx expresses this by saying that the normal functions of money have "grown up spontaneously" (naturwuchsig) from the circulation of capital (555).[viii] As a result, precious metal money captures, what Marx calls the 'objective' character of value. By this he means that value "asserts itself as a regulative law of nature" rendering capitalism as a whole, and money as one of its essential elements, beyond intentional social control (Marx 1867:184). This is Marx's original reason for starting with metal money in Volume I of Capital. There the point is to show that commodity exchange presupposes money. Because gold is itself a commodity (although as money, it is not a commodity like any other), it can be used to show that the nature of commodity values requires that one of their number serve to embody value. Symbolic money, by contrast, seems to be the "arbitrary product of human reflection" (1867:186).[ix] Similarly, precious metal money in Volume II of Capital expresses the objective character of money's normal functions by presenting them "independently of the credit system" (Marx 1885:577). From this point, Marx can show how the credit system arises from and reproduces these same functions. To take a simple example, he argues that "variations in turnover brought about in this way [by the time required for shipping] form one of the material bases for differing periods of credit," such as thirty and ninety day loans (329). Such connections between the credit system and the normal functions of money establish that the credit system itself is not purely institutional.[x]

In summary, the precious metal money assumption is founded on the normal assumption, methodological reasons, and the objectivity of value. It follows, first, from the unrealisticness of the normal assumption, that Marx is not claiming that gold is the actual form of money. Hence he cannot be equating money with gold. Rather, he regards precious metal money as <u>a possible form</u> of money. In particular, he holds that it is money's simplest form because, unlike credit money, it does not presuppose the banking system. Marx's methodological reasons for beginning with metal money follow from its being the simplest form.[xi]

Second, Marx poses his theory in terms of metal money because it expresses the objectivity of value. This has nothing to do with money being a product or with counting labor hours. Instead of focusing on production, Marx always emphasizes the distinctively capitalist interconnection between production and circulation. In Volume II, for example, industrial capital is taken to be the sole form of capital, not because it includes production per se, but because (as the consequence of including production) it is the only form to contain the interconnection between production and circulation.[xii]

Last, the normal functions of money do not depend on the form of money but must be carried out by money of any form. Thus the principles Marx establishes in Volume II apply equally to credit money, although modified by the socialization of hoards in the credit system.[xiii] In view of this, Marx maintains that "money economy and credit economy" are not distinct economic systems but "merely correspond to different stages of development of capitalist production" (195).

2 THE NORMAL FUNCTIONS OF MONEY

2.1 Hoards

The hoards Marx is concerned with in Volume II are required for the continuity of the circulation of capital. Thus they are amassed intentionally or are voluntary hoards. Marx, of course, also recognizes that stagnation of circulation results in the formation of involuntary hoards (see 158, 225). These are excluded, however, by the normal assumption. Further, although hoards are voluntary, they are not an end in themselves but a means to the accumulation of capital. Marx expresses this by saying that hoarding is not a purpose in capitalism (see 423, 569).[xiv] Being means to another end, hoards are temporary. They, nevertheless, interrupt the flow of money.

A word of caution: since Marx's analysis abstracts from the credit system, it does not apply directly to reality. The hoards Marx describes do not exist as such in reality, nor does he mean that they do. As he explains when he takes the credit system into account, the money hoards of one capitalist are replaced by financial assets (for example, by bank accounts) and the money itself is lent out to another. "In real life," therefore, "there is no storage of money" (423). Further, as this illustrates, the precious metal money assumption creates an absolute dichotomy between money and credit. Assets that are usually thought of as money (such as bank accounts), therefore, are not money in Marx's terms. These differences do not nullify Marx's argument, but they do mean that it applies to reality only with appropriate modifications. The dichotomy between credit and money, means that money in Marx's sense corresponds to that portion of the money supply that is high-powered money.[xv] While money is not really stored, the money that would be hoarded in the absence of the credit system constitutes, in its presence, the supply (again, of high powered money) that would be available for loans in the absence of a central bank. Marx's argument for the necessity of hoards also implies that if access to the banking system is cut off (for example, by monetary policy that targets aggregates), non-financial capitalists will attempt to reestablish individual hoards. The reasons to hoard are not abolished by the credit system, but merely become demands for financial assets. They become demands for money only when the credit system breaks down.

To begin with the most inclusive and fundamental hoard, Marx speaks of the total quantity of money as a "social hoard" (400). This is the amount of money required as a "machine of circulation" for the total social capital (213). Calling money that circulates a hoard seems to involve a contradiction in terms (as will emerge, all money does not usually circulate at once, but this is irrelevant to the current problem). Moreover, this contradiction seems to be one of the peculiar effects of the precious metal money assumption. By this assumption, money is a hoard in the sense that it is real wealth that must be "accumulated bit by bit" as the volume of commodity production increases and withheld from productive use to be "sacrificed to the circulation process" (400, 214). Marx regards the money supply as a hoard, however, not because he assumes that money is metallic, but because of the characteristics of money as a form of capital.

The accumulation of wealth in the form of money is a precondition for capitalist production because it is the precondition for wage labor to be the typical form of labor. On the one hand, wage labor involves the "transformation of services in kind into money payments" (418). On the other, wage labor must be bought with money rather than with credit. The condition that guarantees the availability of a supply of wage labor is the separation of laborers from the objective means of production. Since this condition renders labor unable to provide for its own subsistence, it means that workers "cannot give the industrial capitalists any long term credit" and "there can be no question...of a direct or indirect balancing of accounts" as there is with the trade credit capitalists grant each other (490, 140-1).

As the necessary means of employing labor, the "social hoard" must evidently circulate between capitalists and workers. Marx emphasizes, however, that it merely passes through the hands of the working class, always returning to the capitalists.[xvi] On these grounds, he speaks of the capitalists' "monopoly over money," suggesting that the social hoard really belongs to the capitalist class (497). Since this is the basis for their claim to surplus value, the function of the social hoard is evidently the appropriation of surplus value In keeping with this purpose, when the hoard does circulate, the major part of it takes the form of wages, which return to the capitalists when they are spent (trade credit serving to purchase constant capital).[xvii]

Marx does not explain the source of the social hoard in Volume II of Capital, having already argued in Volume I that it is one of the results of the original accumulation. He does, however, illustrate the need for it by the plight of the Russian landowners who "complain of the lack of money capital" with the transition from serf to wage labor (117). As this case also illustrates, even though the social hoard is a precondition for capitalist production, the latter can begin before a sufficient hoard is accumulated; the hoard and capitalist production develop simultaneously.[xviii]

Complementing the theory of the universal equivalent in Volume I, Marx's Volume II account of money as money capital establishes a second reason for the necessity of money. While Marx argues that the relation between wage labor and capital is necessarily monetary, he warns against regarding capitalism as a "money economy" for this reason (113). The error he sees in this conception is that it reduces the wage labor/capital relation to that between seller and buyer. This overlooks the "distribution of the elements of production" that guarantees the availability of labor power as a commodity, hence also, the specific goal realized by employing wage labor, the creation of surplus value (116). In short, it reduces money capital to money. In addition, the idea of capitalism as a money economy, gives priority to the effect over the cause. According to Marx, the generalization of the commodity form, and so of monetary exchange, results from the capitalist organization of production (see 196).[xix] The prevalence of theories of money that are formulated entirely in terms of simple exchange, makes Marx's warning still relevant.[xx]

The other hoards Marx identifies are subdivisions of the social hoard and are hoards in the normal sense of money withheld from circulation. They are associated with simple circulation, the accumulation of capital, and turnover, the last of which includes the reproduction of fixed capital. Although they are not necessarily separate funds, like the social hoard, they are distinguished by their purpose and the source from which they are amassed.

First, part of the money required as a 'machine of circulation' is a reserve fund that is ready to enter circulation should the need arise (see 403). At the macroeconomic level, its function is that it makes the quantity of money in circulation elastic. This is a necessary characteristic of the circulating medium because the quantity required changes constantly and unpredictably (e.g., with changes in prices or in the speed of sales). Marx has already described this kind of hoard in Volume I of Capital in his case against the quantity theory. Against its claim that prices are determined by the money supply, Marx argues that hoards allow the quantity of money in circulation to adjust to amount of commodity value to be realized, showing that the latter determines the former.[xxi] Posing the same argument in more concrete terms in Volume II, he identifies these hoards as the reserve funds that capitalists hold "to guard against price fluctuations,...to await the most favorable conjunctures for buying and selling," to compensate for delays in sales, or, in short, "to continue operations without interruption" (199, 521). This is the microeconomic function of circulation hoards.

Second, money is amassed out of realized surplus value as latent money capital until it reaches sufficient size to function as productive capital.[xxii] This kind of hoard, which Marx calls an accumulation fund, is required because there is a minimum quantity below which money cannot function as capital, determined in each industry by the proportions in which the elements of production must be combined (see 162-3). Accumulation funds are not optional because accumulation itself is not optional, rather "the constant enlargement of... capital [is] a precondition for its preservation" (159). Although the accumulation fund and the reserve fund perform distinct functions, and are therefore theoretically distinct, in practice, they may be combined.[xxiii]

Third, hoards associated with turnover are the money counterparts of stocks of productive capital and inventories of finished products. Like their physical counterparts, such hoards are a precondition for the continuity of production.[xxiv] That is, for the circulation phase of capital's circuit to be accomplished without interrupting the production phase, capital must exist in all three of its forms at the same time.[xxv] Of the three, Marx notes that "it is particularly the part always present as money capital that the economists forget;" having forgotten it, they fail to recognize "the importance and role of money capital in general" (333, 342). It might seem that capital could pass through the money form without remaining in it long enough to be considered a hoard. For the money form to be merely transient, however, the two phases of turnover, the working period and the circulation period, would have to mesh perfectly with each other in accordance with stringent conditions. Since there is no reason for the two phases to conform to these conditions, as a rule, capital would be "set free" or "suspended" in the money form between the end of one phase and the beginning of another.[xxvi]

Fourth, as fixed capital wears out, the value it transfers to products is amassed as a money hoard, which is spent all at once when fixed capital is replaced. In this case, the physical characteristics of fixed capital together with its capitalist character as a commodity make "hoard formation...an element of the capitalist reproduction process" (526).[xxvii] The resulting gaps between the realization and expenditure of value mean that capitalist reproduction cannot be conceived as "the mere unmediated mutual exchange of...various components...of the annual commodity product," as if money were unnecessary or merely convenient (527). According to Marx, fixed capital hoards are among the principal disruptive influences on the reproduction process. They entail one-sided, or discontinuous, purchases between the two departments (i.e., producing means of production, Dept. I, and means of consumption, Dept. II), which must be balanced by by one-sided purchase in the opposite direction (see 570). Given also that crises result in the moral depreciation of fixed capital, the cyclical pattern of crises will be reinforced by the burst in spending that accompanies the replacement of fixed capital (see 264). In addition, even in the ideal case of simple reproduction, variations in the amount of fixed capital that has to be replaced from year to year, create either shortages or surpluses. Both result in crises under capitalist conditions (see 542-545).

2.2. Circulation

2.2.1. The Path of Monetary Circulation

The monopoly of the social hoard by the capitalist class dictates the path of money's circulation in capitalism. Since the social hoard belongs to the capitalist class, it must be the source of all money in circulation. On the other hand, its relation to the rest of society (by Marx's assumption, the working class) insures that all money returns to the capitalist class from circulation. The "general law" of circulation, therefore, is "the <u>return</u> of money to its starting point" (488, 416). This is the condition for the annual repetition of production.[xxviii] It is completely different from the path money follows in simple circulation, "its constant <u>removal</u> from its starting point" (416).

Money spent as constant and as variable capital quite obviously originates with and returns to capitalists. The former circulates only among capitalists, while the latter goes to the workers and returns to capitalists when wages are spent. The circulation of surplus value, however, does not seem to conform to the same law. Tooke was asked "how the capitalist always managed to withdraw more money from circulation than he cast into it" and neither he "nor anyone else" could explain "where...the money for this come[s] from" (404, 405).

Realizing the surplus value portion of the total product seems to require extra money over and above what capitalists spend since “beyond this [money spent on variable and constant capital], the capitalist no longer appears as the point of departure for the quantity of money that exists in circulation” (408). But there is nowhere else besides the capitalists that the money could come from. The working class does not have it, since they are obliged to be workers because they have no wealth. It might seem that spending by landlords and rentiers offers a solution. But their incomes are just a share of the surplus value received by industrial capitalists. Hence they “cannot serve as dei ex machina for the arbitrary realization of certain portions of annual reproduction” (532).[xxix] If the money to realize surplus value does not originate with the capitalist class, therefore, the quantity of money in circulation must be insufficient to realize the value of the total output.

Alternatively, if this money (setting aside how, for the moment) does originate with the capitalists, then there appears to be no surplus. The capitalists would have thrown into circulation the same amount of money as they receive back. To receive a surplus, however, it seems they must receive back more. This, at least, is the implication of the question posed to Tooke.

To solve this problem it must be shown how the capitalist class spends the money that realizes the value of the surplus product, but nevertheless, gets the surplus product for free (i.e., that it is a surplus product). The capitalists may spend the money in either of two ways. One of these ways may be chosen by hypothesizing simple reproduction. In this case, capitalists spend the money that realizes surplus value entirely on their own consumption. This money, however, never leaves the capitalist class but only circulates among individual capitalists. Considered from the standpoint of the class as a whole, capitalists cast money into circulation to remove commodities and, by the same process, receive the money back. Since the capitalists end up with the same amount of money and the commodities as well, the commodities “cost [the capitalist] nothing, even though he pays for them with money” (550).

It was difficult to recognize that the money to realize surplus value comes from the capitalist class in this case because the capitalist spends it, not as “the personification of capital...[but] as capitalist consumer and man of the world” (550). Capitalists do not withdraw more money from circulation than they cast into it (as Tooke’s questioner supposes). They do withdraw more value, however, since they receive both the surplus product and the money that realizes its value. No extra money is required corresponding to this extra value because the surplus product is completely consumed and its value destroyed each year by the capitalist class. As Marx’s solution shows, capitalists must own, besides the money they advance as capital, a second “money fund which they cast into the circulation sphere as means of circulation for their consumption” and which is “the money needed to realize...surplus value” (422, 497). This second fund is part of the money the capitalist class must have already amassed as a precondition for capitalist production. Because of it, the realization of surplus value does not require any expansion of the money supply.

The same holds true (at least initially) for expanded reproduction. The only difference from simple reproduction is that part of surplus value is spent as capital instead of on capitalist consumption. Besides capitalist consumption, it may be spent either on enlarging the previously existing stock of productive capital or, if the amount of surplus value is too small to be transformed directly into productive capital, it must be hoarded in an accumulation fund as new potential money capital. In either case, new money capital is formed simply by applying surplus value to a different use than in simple reproduction. Hence the formation of new money capital does not require an expansion of the money supply.[xxx]

Although the return of money to its starting point is a precondition for reproduction and all three portions of the total product circulate in this way in principle, the very fact that the physical transformations required for reproduction must be accomplished by the circulation and hoarding of money creates the “conditions for an abnormal course [or] possibilities of crisis” (571). For money to return to its starting point, exchanges between the two departments of production must be equal in value. Because exchanges between capitalists are mediated by exchanges between capitalists and workers, even simple reproduction requires a series of interdependent transactions. Since these transactions are carried out independently of each other, “this balance [of value between the two departments] is itself an accident” and so is the return of money to its starting point (571).

Money flows are also disrupted by any changes in the composition of output that must occur for reproduction to proceed. Simple reproduction entails such changes only if the amount of fixed capital that needs to be replaced varies from year to year (for example, because of obsolescence or accidental destruction [see 542-5]). They are a precondition, however, for the transition from simple to expanded reproduction (or from one rate of accumulation to a higher one), which cannot occur without an increased output both of constant capital as a whole and of machine tools. One of the problems this transition is likely to create will illustrate how changes in output composition can disrupt the monetary conditions for reproduction. Actual accumulation must be accompanied by the formation of accumulation hoards (see ibid:583). If one department hoards, however, the other cannot sell its output (i.e., it will have overproduced) and the money it has spent does not return to it (see 578, 593). Such violations of the law of monetary circulation are "balanced out" by crises (596).[xxxi]

2.2.2 The Money Supply

One of the more intractable problems Marx seems to have created for himself by assuming that money takes the form of gold is explaining how gold production could provide an adequate supply of money. For Marx, "whether capitalist production on its present scale would be possible without credit...i.e. with a purely metallic circulation" is a "pointless question" (420). In part at least, this is because it has an obvious answer:

It would clearly not be possible. It would come up against the limited scale of precious-metal production (420).

The question is also pointless because it emphasizes a minor and neglects a major feature of the credit system and, as a result, misunderstands the relation between the credit system and large scale production. It supposes that large scale production could develop independently of the credit system; that the quantity of money would become insufficient to circulate the enlarged volume of output, and that credit money would be introduced for this reason. According to Marx, by contrast, large scale production would not develop without the credit system. Since the two develop simultaneously, the value of output neither threatens to outstrip nor is ever limited by the quantity of money required to circulate it. The reason the two develop simultaneously, however, is not that the credit system allows the money supply to expand in step with output. It is rather that the credit system concentrates all individual hoards in banks. This places a larger amount of money capital at the disposal of individual enterprises. To stay, for the moment, with the part of the story that does concern the quantity of money, Marx makes the negative case, first, that the quantity of money is not a limit on capitalist expansion and, second, that the credit system (including credit money) develops from the hoards required by the circulation process of capital, not because of a shortage of gold.

Regarding the first point, Marx's demonstration (discussed in the previous section) that there are two funds, one to circulate the value of constant and variable capital and a second to circulate surplus value, establishes that the realization of surplus value does not, in and of itself, require an increase in the money supply. It follows from this that the division between wages and surplus value may change (i.e., wages could rise) without any increase in the quantity of money required (see 413). It follows also that "the formation of additional money capital and the quantity of precious metal existing in a country...do not stand in any causal connection with one another" since money capital may be increased simply by diverting the fund that realizes surplus value from capitalist consumption into accumulation hoards (573).

Marx emphasizes further, that there is no fixed relationship between the quantity of money capital and the scale of production.[xxxii] On the one hand, output may increase without an increase in the quantity of money capital through more intensive use of labor power, fixed capital and natural resources (see 431-2). The scale of production, and so the productivity of labor, may increase simply by the centrallization of capitals with no increase in money capital. In addition, reductions in turnover time decrease the quantity of money capital required for a given scale of production (416-7, 363-4). On the other hand, a given quantity of money may be made to function more effectively through "technical arrangements" that increase the velocity of money or that substitute "directly balancing payments" (i.e., trade credit) for payments in money (417, 419).[xxxiii] While the amount of gold that is present in a country at any given time may be fixed, the effectiveness of this stock of gold as money is variable. In this sense, money is endogenous in Marx's theory in spite of the precious metal money assumption.

Throughout Volume II, Marx assumes that "the quantity of money existing in the country...is sufficient both for active circulation and for the reserve hoards" (576). This is the social hoard, which is the precondition for capitalist production, amassed with the original accumulation and the spread of capitalist production.[xxxiv] If simple reproduction is assumed, annual gold production would only have to replace the quantity of money used up by wear and tear. As is evident from Marx's comment that capitalist production "would come up against the limited scale of precious-metal production," expanded reproduction eventually requires additions to the money supply.

In particular, Marx entertains the possibility that expanded reproduction might involve simultaneous hoarding by all capitalists. Since the first stage in expansion is the shift of realized surplus value into accumulation funds, Marx inquires whether all-sided accumulation would produce a shortfall in demand as well as a shortage of money (see 567 and 421-4). "In real life," he notes, "there is no storage of money" (423). In the credit system, hoards take the form of financial assets (e.g., bank deposits, shares), so that one capitalist's hoard functions simultaneously as another capitalist's means of circulation. Hoarding is then spending: "what appears on the one hand as storage of money capital appears on the other hand as continuous real expenditure of money" (423). The formation of accumulation funds, however, does not require the credit system. Even subject to the unrealistic assumption that money takes the form of gold, hoarding is partial rather than general. "Storage in the money form never occurs simultaneously at all points" because hoarding is not an end in itself but the means, either to the continuity of turnover or the expansion of productive capital (423).[xxxv] Hoarding by some, therefore, is balanced by spending by others.

If, in spite of the flexible relation between them, the quantity of money should become insufficient for the scale of production, more gold would have to be produced. The only consequence is that a greater portion of the total social labor would have to be devoted to "this expensive machinery of circulation" and real wealth correspondingly reduced (420). Because financial assets replace money hoards and bank notes replace gold as means of circulation in the credit system, labor can be devoted to productive uses rather than to gold production. As far as its effect on the quantity of money is concerned, the credit system increases wealth only insofar as it reduces the social cost of the machinery of circulation.

That precious metal is an expensive (in terms of social labor) form of money and credit money a cheap one has been noted by others, including Friedman and Hicks. The conclusion Hicks draws seems to be the obvious one, that this "is the reason why the credit system grows: that it provides a medium of exchange at much lower cost" (1967b:158).[xxxvi] Hicks's argument, however, presupposes that individual capitalists can coordinate their actions to reduce a social cost (the portion of the total social labor that is devoted to gold production) without the incentive of private gain. In addition, it jumps from the costliness of gold money to a consequence of the fully developed credit system, skipping over the feature of the credit system that Marx considers most significant, namely, that it involves the socialization of individual hoards.[xxxvii] According to Marx, the credit system develops because capitalists recognize that they can use the hoards, which they must amass anyway for the circulation of capital, to claim a share of surplus value (see 396, 574). The credit system transforms money capital, which is a "dead weight" in the form of a private hoard, into "active, usurious, proliferating capital" for its owner in the form of interest-bearing capital (574, 569). Marx's account of the credit system not only includes the socialization of hoards, but explains how this is brought about by the pursuit of private gain. The reduction in the social cost of the machinery of circulation is by-product.[xxxviii]

3 REMARKS ON THE CREDIT SYSTEM

Marx does not consider the credit system by itself until Volume III of Capital, since the transformation of hoards into interest-bearing capital involves the redistribution of surplus value among different kinds of capital. Nevertheless, two important points about the credit system have emerged in Volume II. First, the hoards required for the circulation of capital are the source of funds on which the credit system is founded. Second, the change introduced with the credit system is that latent money capital is used to buy financial assets (e.g., bank accounts); the money itself is pooled in banks and made available to other capitalists. Having identified both the functions of hoards and the way hoards are transformed in the credit system, Marx can indicate how the credit system affects the circulation of capital. Although he mentions these effects only in passing, a general principle emerges from them. In the absence of the credit system, the need to amass hoards imposes limits on the expansion of capital. The credit system relaxes or removes these limits. The tradeoff for circumventing them, however, is that the circulation of capital is rendered more fragile and complex, and so less likely to proceed "normally." Both the limit and the tradeoff vary with each kind of hoard.

As shown in the previous section, the social hoard limits the accumulation of capital because it requires that labor be devoted to gold production. The credit system circumvents this limit by "restricting the actual circulation of metal...to...an ever decreasing minimum" (576). The tradeoff is that "this...increases in the same proportion the artificial character of the entire machinery and the chances of its normal course being disturbed" (576). By 'artificial,' Marx means that metal money is replaced by "all kinds of operations, methods, [and] technical devices," in short, by forms of debt that become more 'creative' (i.e., less sound) as the share of real money is reduced (576). The smaller the amount of real money, the smaller the reserve available to all capitalist enterprises (since their money capital is combined in the credit system) against unforseen conditions, such as delays in sales, price changes, technical innovations. Further, the credit system increases the likelihood that any disturbance will spread throughout the economy because the pooling of money capital adds a new form of interdependence among capitals. These consequences are inherent in the credit system because they follow from the socialization of hoards, which is its definitive characteristic. Hence no banking legislation or monetary policy can eliminate them entirely.[xxxix]

Like the social hoard, turnover hoards limit the accumulation of capital because they are capital that must be withheld from productive use. The credit system overcomes this limit because it places latent money capital at the disposal of those capitalists who have immediate use for it. This allows the total capital to be used continuously without compromising the continuity of production. The tradeoff is that an additional and unrealizable condition is imposed on the already complex process of reproduction: if the needs of different capitalists do not mesh perfectly, money will not circulate in the manner required for reproduction. All hoards, but especially turnover hoards, are contributed to the banking system temporarily. There is no reason to suppose that they will be available to be returned at the precise moment when they are needed to fulfill the conditions of reproduction. In Marx's words, "money capital that is only released temporarily may get stuck, and be used for new enterprises" when the conditions for reproduction require that it "be used to set in motion...products still held down [i.e., unsold] in other enterprises" (594). High rates of return add a new wrinkle: they create the incentive for "industrialists and merchants [to] throw the money capital they need for carrying on their businesses into...speculations" on shares "and replace it with loans from the money market" (390). The ensuing crash bankrupts the speculators and undermines their businesses, which would have otherwise been sound. Further, the credit system can hide interruptions in the circulation of capital (for example, if debt is incurred to compensate for the absence of sales) and allow them to persist. "Anomalies in the production and reproduction process" are not only more serious, but appear in a distorted way, "as a crisis on the money market" (393).

The limit associated with accumulation funds is that each capitalist must amass a sufficient hoard before commencing production. The credit system reduces the size of the hoard that any one capitalist must amass because it makes the collective hoard of the capitalist class available to individual capitalist borrowers. This allows large scale and long term projects, previously undertaken only by the state, to be undertaken on a capitalist basis.[xl] The reason the credit system is associated with large scale production, therefore, is that it involves the pooling of individual hoards, not because a shortage of gold money would impose limits on capitalist expansion. While the credit system allows large scale projects to be undertaken, their dependence on it insures that they will be undertaken in a senseless way. For example, they may be undertaken simply because cheap money is available: "the absence of this [money market] pressure itself calls into being a mass of such undertakings" (390).[xli] In addition, they are both vulnerable to and promote disturbances in the money market (see 433-4). On one side, they are vulnerable because they must be abandoned if a financial crisis makes funds unavailable before they are complete (a problem Marx illustrates by housing built on speculation, see 311). On the other side, the demand for funds generated by very large scale projects (Marx's example is railways) initially puts pressure on the money market. Later, when the money raised on the money market is spent, the burst in demand for productive capital causes prices to rise and leads to a speculative boom. In short, financing through the credit system underlies the "prodigious development...of the capitalist system of production" but it also means that this development is associated with waste and speculation and is potentially irrelevant to needs (574).

As Marx warns, "we should not get any mystical ideas about the productive power of the credit system, just because this makes money capital available or fluid" (421). The credit system does not abolish capital or the monopoly of money by the capitalist class, but only allows that class to use money capital more effectively. While the credit system overcomes the limits to capital that hoards would impose, it exposes capitalist reproduction to a new set of hazards. The tendencies to disruption that result from the concentration of money capital are 'monetary' in the sense that they are attributable to the credit system. They are distinct from the disruptions that arise from the virtual impossibility of realizing the conditions for reproduction.

4 CONCLUSION

With his explanation of the circulation of capital, Marx has presented a "monetary theory of production": one in which the behavior of money figures among the preconditions for capitalist reproduction (Keynes 1933:408). The preconditions Marx identifies concern the path of monetary circulation and the formation of money hoards; he has yet to consider the interest rate and its impact. This by itself assures the originality of Marx's contribution. On the one hand, as Keynes persuasively argues, Neo-Classical theory is the theory of a "real exchange economy" (ibid). On the other, for Keynes himself, money is significant because of the interest rate. The characteristics of money as a form of capital in Marx's account, therefore, are for the most part absent from other theories. These differences will be highlighted in closing.

One of the most fundamental of Marx's points is also the simplest, that the relation between wage labor and capital is necessarily monetary. This relation by itself explains why money is necessary. As noted earlier, this is entirely overlooked in Neo-Classical monetary theory, but is recognized by the post-Keynesians. Further, as opposed to the usual contradiction between money as means of circulation and as hoard, Marx shares with (some of) his Classical predecessors, the view that these functions are complementary. In addition, Marx argues that the realization of surplus value, whether devoted to consumption or expanded production, does not require an increase in the money supply. Because of this and the previous point, the quantity of money is not the central issue for Marx as it is for contemporary monetary theory.[xlii] Like the post-Keynesians, Marx conceives money to be endogenous, but for Marx this is true even without the credit system, because of hoarding and trade credit. According to Marx, therefore, the significant feature of the credit system is not the endogeneity of money but the concentration of money capital. This disposes of the problem of a shortage (or to put it another way, the high cost) of gold money given the large scale of capitalist production. Since, by Marx's account, the concentration of money underlies the development of large scale production, the latter would not occur without the former. To argue that the concentration of money is the definitive feature of the credit system, Marx must first show, by abstracting from the credit system, that hoards are necessary for the reproduction of capital. This abstraction is also required for Marx's case that capitalist reproduction is likely to be disrupted merely because it must be accomplished by means of money. The credit system complicates, rather than resolves, the problems that are already present without it. Last, Marx's case that latent money capital is the supply of funds to the credit system and the uses of hoards, the demand for them, explains why disruptions in the reproduction process first appear as disruptions in the money market.

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Notes

[i]. Hereinafter all references to Volume II of Capital will be cited solely by page number.

[ii]. More precisely, it suppresses features of reality that are irrelevant to the issue at hand in order to focus on others that are fundamental to it. The normal assumption illustrates, what Maki calls "unrealisticness" of a kind that is required for theory construction (see Maki 1994).

[iii]. For continuity and turnover, see 334, 335, 342; for reproduction, see 580; on hoards, see 333, 429, 521; on inventories see 201, 223.

[iv]. As Marx notes, industrial capital is the only kind of capital in which the "creation [of surplus product] is a function of capital" and which, therefore, "requires production to be capitalist" (136). This is, of course, why industrial capital involves the unity of production and circulation. In Volume I of Capital, Marx focuses on wage labor as the source of surplus value and in Volume II, on the interconnection between production and circulation, which is its logical consequence.

[v]. The most important example of this problem for the history of economic theory, is the wine in the cellar case, first presented by Bailey and later by Bohm-Bawerk as proof against the labor theory of value (see Marx 1861-3:86-87). Marx's solution to it requires, besides his explanation of the rate of profit, his distinction between working time and production time (see 316-7).

[vi]. Marx's method of abstracting from merchant's capital is anticipated by Sisimondi, who argues that the merchant and manufacturer divide up the functions of one capital and that abstraction from the former is necessary "in order to grasp clearly the progress of wealth" (see 191).

[vii]. Money reserves are also pooled in the stock and bond markets. Banks, however, exemplify the principle in its simplest form and are taken to represent the others.

[viii]. Naturwuchsig literally means naturally arisen, or developed of its own accord, in this case, out of the circulation process of capital. "Spontaneous" is an unfortunate translation because it suggests the absence of causation. Marx means just the opposite, that money's functions are dictated by its place in the total process, not arbitrarily (i.e., institutionally) established.

[ix]. Symbolic money (pure fiat money) is the next simplest form of money after gold; unlike credit money it does not presuppose the banking system or money dealing capital as an independent form of capital. In Volume I, Marx remarks that if money is a symbol, then so is every other commodity (1867:185). His point is that neither are symbols in the sense, as Ganssmann puts it, that they occupy a "consensual domain of shared meaning" (1988:309). For the argument that Marx begins with commodity money to capture the objectivity of value see Campbell 1997.

[x]. As Marx states: "all these different aspects of the spontaneous movement," i.e., the normal functions of money, "had only to be noted and brought to light by experience, in order to give rise both to a methodical use of the mechanical aids of the credit system and to the actual fishing out of available loan capital" (556). His strongest case for the 'spontaneously' developed character of the credit system is that and why it arises from the hoards required for the circulation of capital. This will be considered later.

[xi]. Marx also mentions that gold is historically prior to credit money (see 192). This, by itself, is not an additional reason for the precious metal money assumption but a consequence of metal money being the simplest of money's forms. If gold money presupposed more features of capitalism than credit money (i.e., were not the simplest form), Marx could not have begun with it even though it is historically earlier.

[xii]. In Volume I, the interconnection between production and circulation appears in Marx's rejection of both Ricardo, who sees value entirely in terms of production, and Bailey, who sees it entirely in terms of exchange (see Campbell 1997).

[xiii]. See 213, 364, 434, 533 and also De Brunhoff 1973:85.

[xiv]. In this way, Marx shows that there is no contradiction between the means of circulation and hoard functions of money. Marx emphasizes this point because it is a key difference between pre-capitalist and capitalist conditions: in the former, wealth is accumulated by hoarding, while in the latter, it is accumulated by its use as capital (see 164).

[xv]. High-powered money meaning bank reserves for demand deposits plus currency; in other words, money that is plus money that is capable of becoming reserves.

[xvi]. Thus Marx says that the hoard is appropriated by a few (418); that the capitalist is its "primary point of departure" and the workers "only a secondary point of departure" (408); and that it functions "in the hands of the workers only as a means of circulation" (554).

[xvii]. See 554. The importance of wages in the total quantity of money is also emphasized by Moore 1988 (see 137, 138). It should be noted that Marx does not regard trade credit as part of the credit system since it does not involve the "socialization" of money capital that is characteristic of banks and the stock market.

[xviii]. See 117, 418. Marx argues that the relation between the emergence of capitalist production and the accumulation of a money hoard "should not be conceived in such a way that a sufficient hoard has first to be formed before capitalist production can begin" (418). This is one of several arguments to the effect that the quantity of money is not a limit on capitalist expansion.

[xix]. See also Marx 1867:274n4.

[xx]. For example, clearing house conceptions of money (such as Hicks 1967a), evidently abstract from wage labor since they assume that all traders can give each other credit. The relation between wage labor and capital implies that only capitalists can give each other credit.

[xxi]. See Marx 1867:231-2 and 219-20. Besides Marx, Smith and Steuart both maintain that circulation hoards exist (see 419 on Smith, and Marx 1859:165-7 on Steuart). This is one of the reasons all three reject the quantity theory and, as will be argued later, regard money as endogenous. The corollary is that prices are determined prior to circulation. Keynes expresses this by referring to expected prices and Marx, by referring to ideal values ("in their prices,...commodities have already been equated with definite but imaginary quantities of money" before they enter circulation [Marx 1867:213, see also 189]).

[xxii]. Marx uses the term money capital to mean capital in the form of money not interest-bearing capital, which he does not consider in Volume II of Capital. Accumulation funds are potential money capital in the sense that they are funds intended for the expansion of productive capital.

[xxiii]. "When the capitalist is in need, he in no way ponders over the specific functions of the money that he has in his hands, but uses whatever he has in order to get the circulation process of his capital moving again" (165).

[xxiv]. For Marx's case that turnover hoards function analogously to physical stocks (see 429, 580-1).

[xxv]. "All portions of the capital go through the circuit in succession, and, at any one time, they find themselves in various stages of it. Thus industrial capital in the continuity of its circuit is simultaneously in all of its stages....The succession of the various parts is ...determined by their coexistence, i.e., by the way the capital is divided" into its forms, money, productive capital, and commodities (182, 183).

[xxvi]. For a summary of the conditions under which money hoards would be unnecessary see 355.

[xxvii]. Marx sometimes speaks of the fixed capital amortization fund as an accumulation fund (260-1) or a reserve fund (243). It evidently has a completely different function than the circulation reserve. It is distinguished from the accumulation fund both by its source (realized constant capital as opposed to realized surplus value) and by its use, replacement rather than expansion.

[xxviii]. Stated differently, to the extent that money does not return to the capitalist who spent it, the reproduction of capital will be disrupted. Marx derives the conditions for reproduction from this principle (see 533).

[xxix]. This illustrates how the division of surplus value obscures the issues addressed in Volume II and why Marx confines his attention to industrial capital.

[xxx]. See 418, 575.

[xxxi]. Adolph Lowe (1976) investigates the prerequisites for accumulation in greater detail than Marx and, like Marx, shows that they cannot be met by the market except through disruption. The problems that accompany reproduction because it is carried out through money have nothing to do with the credit system or reliance on debt. By contrast, Minsky's (1978) 'financial instability hypotheses' attributes the instability of capitalist production to reliance on debt.

[xxxii]. "It in no way follows from this [that capital must begin its circuit in the form of money] that...the scale of production...has its absolute limits determined by the volume of money capital in operation" (Marx 431).

[xxxiii]. Steuart argues (and Marx evidently agrees with him) that the existence both of hoards and various forms of trade credit, means that the quantity of money does not determine prices (see Marx:1859, 165-7). Similarly, Smith argues that the quantity of money adjusts to the value of the goods money is required to circulate and that trade credit is one of the sources of flexibility (1776:323-324, 405, 409). It is simply not true, therefore, as Rogers maintains that "the role of money as cause or effect should be seen in terms of the distinction between commodity and bank money" (1989:175, Moore [1988:128] suggests the same thing). That is, this distinction does not coincide with that between exogenous and endogenous theories of money. Money is conceived to be endogenous, in the sense that the quantity in circulation is held to be the effect of commodity values rather than their cause, by Marx, Steuart, and Smith and all pose this argument in terms of commodity money.

[xxxiv]. See 418. As noted earlier, Marx maintains that this hoard does not prohibit the development of capitalist production but the two develop simultaneously. The social hoard, therefore, is not a limit on capitalist production.

[xxxv]. Marx also notes that hoarding could be the result of stagnation. Stagnation should be excluded by the normal assumption. Even if it is taken into account, it does not contradict Marx's point, namely, that hoarding does not impose limits on the circulation of capital. Evidently, hoards that result from stagnation cannot have caused it.

[xxxvi]. Similarly, Friedman states that "the cost of a strict commodity standard is almost certain to lead to the adoption of devices designed to provide without cost at least some part of the annual addition to the circulating medium" (1953:243, emphasis added).

[xxxvii]. This is presumably one of the reasons why Marx claims that if the need for hoards is overlooked "so also is the impotance and role of money capital in general" (342).

[xxxviii]. Similarly, in Volume I of Capital, Marx explains that the hoards that allow the total quantity of means of circulation to be flexible are held by individual capitalists to protect themselves against unpredictable fluctuations in sales and input prices.

[xxxix]. One of the 'costs' usually associated with replacing metal by paper money is that the latter is subject to significant devaluation (see Rogers 1989:172-3). Since Marx assumes, throughout all three volumes of Capital, that the value of money is constant he does not mention this problem. The complications mentioned in text, however, do have contemporary counterparts. The reduction of the quantity of metal money to a minimum is comparable to the Federal Reserve's attempts to restrict reserves in the 1970s and 1980s. The financial innovations by which those restrictions were circumvented are analogous to Marx's "operations, methods,[and] technical devices," and the financial crises of 1970s and 1980s illustrate their consequences (see Wolfson 1995, Chs 4-10).

[xl]. The examples Marx cites are roads and canals (see 311). As he states: "large-scale jobs needing particularly long working periods are fully suitable for capitalist production only when the concentration of capital is already well advanced, and when the development of the credit system offers the capitalist the...expedient of advancing...other people's capital (312).

[xli]. This is echoed by Keynes's claim that "there is an inducement to spend on a new project what may seem an extravagant sum, if it can be floated off on the stock exchange at an immediate profit" (1937:151). Like Marx, Keynes singles out long term projects as being conducted in a particularly irrational manner by capitalism (see ibid: 163-4).

[xlii]. Dow and Dow state that a "key feature of post-Keynesian monetary theory is the endogeneity of money supply determination" (1989:147). See also Lavoie 1985.