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Notes Towards a New Political-Economy Approach to Contemporary Credit Relations

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1. Introduction

The purpose of this paper is to contribute to the development of a systematic, Marxian approach to the content and contradictions of contemporary credit relations. It does this by abandoning traditional Marxian analyses of credit based on “monied capitalists” as well as the traditional understanding of credit as “the great regulator” of the velocity of money. Instead it considers the *ex nihilo* issuance of bank liabilities as the characteristic form taken by advanced credit relations. The paper approaches this form of credit on the basis of three Marxian analytical elements: the circuit-of-capital conceptualisation of accumulation, the understanding of money as the most general embodiment of value and foremost store of wealth, and characterisations of the market and institutional foundations for the circulation of different forms of credit money. On these bases it offers distinctive insights into the content, limits and inherent contradictions posed by credit relations that are unavailable to existing deliberate analyses of credit money in capitalist accumulation.¹

The paper’s systemic approach to the *ex nihilo* issuance of bank liabilities in accumulation leads to a distinctive appreciation of financial intermediation. Capitalist accumulation requires capital value to express itself recurrently in the form of idle money holdings. At the same time, it ensures the systematic existence of investment opportunities facing capitalists lacking sufficient monetary means to undertake them. The credit system dynamically mediates between these two inherent features of accumulation by creating its own forms of money, backed by claims on borrowers, that are accepted as suitable monetary embodiments for capital, and as stores of wealth. In this context, money hoards in the circuit of capital (and circuits of personal revenue) fundamentally condition the pace of credit extension. Their magnitude and distribution relative to production and

¹ Notable among the later are the contributions of Circuitists. See Lavoie (1992) and Graziani (2003).

consumption plans conditions net credit demand. The composition in which capitalists and workers wish to hold them conditions the ability of the credit system to accommodate that demand.

Issuers of monetary liabilities thus need to establish and defend their circulation as embodiments of value. This is done most generally through portfolio management. Issuers also maintain fractional reserve holdings of more general forms of money, and offer varying terms of convertibility and rates of interest on their liabilities. Significantly, this includes Central Monetary Authorities, which need to establish the circulation of their liabilities among capitalists in a position to withdraw value from the national economy. This need conditions monetary policy and compels the CMA to maintain reserves of a world money of international settlements. Against this backdrop, the interest rate on loans will be understood to hinge on the rates of interest needed to sustain the circulation of domestic liabilities given existing preferences for different money forms, as well as on the costs and profits of the banking sector. This results in a distinctive loanable funds approach to interest-rate determination, in which the supply of bank credit is directly conditioned by the portfolio preferences of money holders over money forms with different social content or liquidity.

Credit contributes to the accumulation of capital while simultaneously creating distinctive contradictions. If positive paces of net credit extension are sustained, they boost dynamic profitability by boosting the pace of sales and reducing relative the size of commodity inventories. This ability is constrained by dynamic productive capacities, which limit the pace at which inventories are fed. It is also tempered by the credit and monetary risks created by credit relations. Since bank liabilities supported by bank assets come to be held as monetary embodiments of capital value, disruptions to the sale of commodities will threaten not only the realisation of value taking the form of unsold commodities, but also capital value in monetary form. Finally, the ability of credit relations to boost profitability also exacerbates, and gives rise to distinctive disruptions over the capitalist business cycle.

The paper proceeds as follows. Section two locates money flows and stocks within the core processes of capitalist reproduction: the circuit of capital and attendant circuits of personal revenue. Section three traces the endogenous development of credit relations from commercial to banking credit, discussed the market foundations for the circulation of different forms of credit money, and characterises the constraints on the ability of the credit system to accommodate any given pace of net credit extension demanded by capitalists. Section four critically discusses the impact of credit relations on accumulation as understood in traditional Marxian analyses, the contributions of credit that may be identified on the basis of the approach taken here, and the contradictions they inherently pose. Section five concludes.

2. The Circuit of Capital and Money

This section lays the bases for approaching capitalist credit relations by offering a systemic conceptualisation of money and its circulation in capitalist reproduction based on Marx's *circuit of capital*. The self-expansion of capital value requires it to be expressed successively as stocks of input and unfinished output commodities, unsold inventories, and money hoards. Money offers the most general expression of capital value among these stocks. Monetary profits are the defining purpose of the circuit, and their capitalisation is the driving force of accumulation. Money also mediates the circuits of revenue of workers and capitalists *qua* consumers, where it may also function as a store of wealth. While evolving according to their own logic, the circuits of revenue originate and terminate in the circuit of capital. The discussion offers a characterisation of the circulation of money successively through circuits of capital and circuits of revenue in the process of reproduction.

2.1 The Circuit of Capital

Marxian political economy conceptualises capitalist social reproduction at the aggregate level on the basis of the *circuit of capital*, a schematisation of the moments and forms taken by capital value as it seeks self-expansion. For a single pulse of value this process takes the form,

$$M - C(lp, mp) - P - C' - M' > M \quad (2.1)$$

Capitalists advance value in monetary form M as investment in input commodities labour power and means of production (lp and mp respectively). These are deployed and used in the process of production P which yields output commodities C' that are subsequently sold for a quantity of money M' . The entire process is driven by the expectation that, on the sale of output, $M' > M$, which hinges on the creation of *surplus value* from the employment of labour power in production and its realisation in the form of monetary profits in commodity exchange. Positive monetary profits allow the recommitment of value to the circuit in growing scales, and are the fundamental bases for positive rates of accumulation.

More broadly, the passage of time as value flows through the various moments of process (2.1) is of fundamental economic significance. Marx devoted considerable time to the analysis of the technical, social and economic determinants of the pace at which value flows through production, sale, and investment. The time lags involved in the flow of value across all phases of the circuit define the circuit's turnover time, most broadly understood as a measure of the average time it takes a pulse of value to transverse the entire process. Turnover time is a crucial, if often overlooked, determinant of the dynamic profitability of capital.

Time lags in the flow of value ensure the existence of dynamic stocks of value in the form of unfinished output commodities, inventories, and monetary hoards. These three stocks of capital constitute total capital value engaged in the circuit. Its size relative to profit flows directly defines the profitability of social capital and consequently the pace of accumulation. The character and determinants of production, sales and investment lags are thus a central concern for analysis of accumulation.

The production of commodity outputs also takes place over time, in accordance with technological conditions and social struggles over the pace of work. Alongside the composition of capital, time lags in production define the productivity of labour in Marxian political economy.² Once produced, the pace at which finished commodities are sold will depend on the state of demand, which is most generally conditioned by the pace of capitalist investment, and by the pace at which personal revenues are spent.

Once commodities are sold the recommitment of fractions of revenues to investment also suffers from time lags, whose economic content is discussed below. As a result of these lags, the circuit of capital exhibits idle stocks of value in the form of money hoards alongside stocks of unfinished commodities and inventories. The relative size of these stocks is variable and conditioned by the relative severity of the corresponding time lags, which in turn reflect the relative pace of investment, the time productivity of labour, and the pace of demand. These naturally vary over the business cycle, resulting in corollary variations in the relative composition of total social capital. In the circuit of capital, productivity, expectations of profitability, and the pace of demand will be reflected in the relative sizes of the three component parts of total capital in circulation.

² See Saad-Filho (2002), Chapter 6, for instance.

Credit and broader financial relations directly act upon capital value engaged in the sphere of circulation in the form of inventories and money hoards. They regulate the quantity and velocity of money, thus conditioning the pace of demand flows and the size of inventories of unsold commodities. At the broadest level credit and financial relations help shape the profitability of social capital, by conditioning the flow of sales that realise profits and the overall stock of capital value in circulation. They will typically boost profitability, thus establishing a foundation for financial revenues and profits, while simultaneously creating new potential sources of instability and disruptions to the process of accumulation.

2.2 Money in the Circuit

Money is asked to perform a series of functions for aggregate social capital. At the beginning of an individual circuit it exists as the most general embodiment of capital. Once it is advanced to purchase input commodities, the capital value it embodied remains in the circuit, no longer in monetary form, but as hired labour power and means of production. The original money, having been advanced as investment, will now exist as the realised output value for the producers of the purchased means of production, and as the wage income of workers engaged in the original investment.

Capitalists who sold to the borrower will recommit fractions of their sales revenues to accumulation, eventually adding to the aggregate value initiating process (2.1). But some of their revenues will finance capitalist consumption. Together with the money wages also received by workers employed by the borrower, these capitalist consumption funds temporarily exit the circuit of capital, entering the circuits of revenue of workers and of capitalists *qua* consumers. In those circuits, money may be held for some time as a store of wealth. While this results in the formation of money hoards outside of the circuit of capital, these money holdings are not indefinite. The

money in question will eventually fund consumption, or the acquisition of securities. It eventually flows to capitalist enterprises, and some of it may be used to start the circuit anew.

As mentioned above, money also appears as a hoard in the circuit of capital, held between its receipt as revenues and its recommitment to accumulation as investment. It also appears as a hoard in the circuits of revenue of workers and capitalists *qua* consumers. Two distinct analytical emphases at different levels of abstraction may be identified in Marxian approaches to money hoards.

First, hoards develop as a consequence of money's role as the general equivalent possessing a monopoly over the ability to buy.³ Money can always buy commodities, whereas the sale of any given commodity is not always possible and seldom timely. As such, money serves as the foremost store of value. Considering the abstraction of simple commodity circulation and a commodity monetary system, Marx (1867) identifies in money hoards a potential source of economic disruption, as a sale need not always be followed by a purchase. As such they are at the heart of his rejection of Say's Law. They also underlie his rejection of Ricardo's Quantity Theory. Since the money commodity has a value, and the velocity of money is at that level of abstraction taken to be inelastically conditioned by customs and tradition, it is the quantity of money in circulation that adjusts endogenously to levels adequate for the circulation of existing commodities. Money hoards effectively act as buffer stocks whose evolution is shaped by arbitrage opportunities posed by any significant misalignment between money prices and the values of commodities and commodity money.

Second, at the more concrete level of analysis of *capitalist* reproduction, money hoards are approached explicitly in relation to their origins and role in the circuit of capital.⁴ Money hoards are

³ See de Brunhoff (1979).

⁴ As may be done on the bases offered by Hilferding (1910), Uno (1980) and Itoh and Lapavistas (1999).

understood as temporary ‘leaks’ of value from the circuit of capital. Four broad reasons giving rise to such leaks may be identified in Marx’s work. First, precautionary money reserves are held to guard against fluctuations in prices and, more significantly, demands for settlement of existing debt claims. Second, even after the investment decision is taken, actual disbursements for inputs are not instantaneous as the purchase of inputs is necessarily gradual. Third, depreciation funds are held in order to self-finance lumpy fixed capital investment. And fourth, ‘accumulation funds’ accrue from sales revenues before their recommitment to investment, which requires sufficient confidence in the prospects for profitability.

Accumulation funds and money reserves held against future demands for settlement and purchases define capitalist credit and financial relations. As in Keynesian and some post-Keynesian approaches, Marxian political economy understands these hoards as the foundation for all credit and financial relations. Unlike Keynesian and Post-Keynesian contributions, in which emphasis in the analysis of money hoards is placed on subjective preferences, expectations and motives behind the portfolio decisions of investors, Marxian analyses privilege their broad social foundations in the very properties of money and the inherent contradictions posed by the self-augmentation of capital value.

The self-expansion of value in monetary form is the explicit purpose of the circuit of capital. Monetary profits provide the most socially general measure of its success. But in order to self-expand, value in monetary form must lose its generality and take the form of commodities. Those commodities represent less social forms of value as they do not possess the ability to buy. They are also incapable of discharging obligations, that is, of functioning as means of payment. Their transformation into augmented monetary value hinges on the fraught social processes of surplus value creation in production, and its realisation as monetary profits in output markets.

From the standpoint of Marxian political economy the significance of the resulting loss of generality and uncertainty is analytically prior to and broader than how it is perceived and managed by individual capitalists. It follows from the contradiction posed by the fact that under general capitalist conditions the accumulation of wealth and social power take the form of accumulation of money, while simultaneously *requiring* that money itself become something other than money. Financial development may mitigate this contradiction. Capital markets allow the conversion of security holdings into money at any point in time without disrupting the circuit of capital generating returns.⁵ Short-term credit markets and arranged overdraft facilities may often reduce the perceived need for money holdings. Yet these developments cannot eliminate the need for money holdings as the very object and measure of accumulation. Neither can they eliminate the need for money holdings as a protection from the inherent vicissitudes and uncertainties of accumulation.

Finally, the lags in the investment of capitalist revenues and related money hoards are expected to show considerable variation over the business cycle. All four ‘leaks’ associated with them may diminish in relative size during upswings, as rising confidence in expected profits quickens the pace of own investment and reduces the relative size of various reserve funds. As a consequence sales are quicker, more of social capital will be sunk in the form of commodities, and relatively smaller volumes of it will exist in the more general money form. This enhances aggregate profitability, while simultaneously increasing the risk of destructive interruptions to the chain of payments once a crisis occurs,

“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

⁵ While also creating new modes of appropriation from surplus value and new sources of potential instability. See dos Santos (2009) and Lapavitsas and Levina (2011).

money. But now the cry is everywhere: money alone is a commodity! As the heart pants after fresh water, so pants his soul after money, the only wealth.”⁶

Notably this creates coordination problems given the private and competitive character of capitalist relations. The potential benefits of generalised individual increases in the pace of own investment and reductions in relative liquidity levels accrue to all capitalists, but the resulting risks are borne by individual capitalists. There are thus no assurances investment lags will be small, even though capital as a whole would benefit from those. As put by Kalecki (1967), “capitalists do many things as a class, but they certainly do not invest as a class”.

3. The Monetary Constraints on Credit

As the discussion above makes clear, money is an integral part of capitalist reproduction, as seen from the perspective of the circuit of capital. It is easy to motivate how credit relations too are integral to the accumulation of capital. In the Marxian system the capitalisation of monetary profits is understood as the driver of the process of accumulation. Accumulation imposes growing requirements on the supply of all commodity forms taken by capital. This includes increasing demand for labour power and means of production, which is met with characteristic contradictions.⁷

Capitalised profits represent a net addition to total value taking the form of money in the economy. Their existence requires growing monetary means of expression for capital value. This observation became the foundation for early *underconsumptionist* appreciations of the limits and contradictions of capitalism. This was most clearly formulated by Luxemburg (1921), who asked “Where do the capitalists get this money to realize the capitalized surplus value?” For her, “this money” had no endogenous sources in capitalism, which was thus forced to obtain it from “third parties” in rural

⁶ Marx (1867), p 155.

⁷ Including possible erosions in profitability arising from rising real wages as labour markets tighten. Some contributions have also emphasised potential problems in ensuring the correct proportions between capital and consumption goods are maintained in accumulation, including Hilferding (1910).

areas and in markets conquered in spheres of imperialist influence. Drawing extensively on Part V of the third volume of *Capital*, Bukharin (1924) offered the first explicit rejection of such arguments, pointing to increases in the velocity of money, the production of money commodities, dishoarding, and credit relations as systematic sources for expanding means of monetary expression for capital value.⁸

The first three of these, however, cannot provide the bases for sustainable growth in means for monetary expression of capital value. The velocity of money cannot increase indefinitely. Even if all consumption expenditures are instantaneous, social capital cannot exist with arbitrarily small holdings of money relative to capital value in the form of non-monetary commodities. Social capital would need to bear indefinitely growing levels of illiquidity. Dishoarding cannot be a systematic source of monetary growth, as it relies on previous withdrawals of circulating media through hoarding. Finally, even when the production of precious metals and minting formed the foundation of monetary systems, there is no reason to expect those ever to have proceeded in the paces needed to sustain the growing investment plans of capitalists.

Capitalist accumulation thus requires credit relations, which develop endogenously as part of capitalist investment plans. Existing capitalist money holdings will systematically prove insufficient to support growing scales of investment, sustaining a regular demand for credit. Credit relations arise and develop in response to this demand, in the first instance as commercial credit that functions as a substitute for money, and later as its generalisation, banking credit, which gives rise to credit money. The difficulties attendant to capitalist monetary expansion are not taken here to subject accumulation to systematic tendencies to “underconsumption”. They are taken to subject it to recurrent credit and monetary crises, taking place in their own right or as moments of broader disruptions to profitability.

⁸ See Day (1980), for instance.

This section lays out a distinctive Marxian approach to credit relations and the monetary structure upon which they rest. Credit relations are approached on the basis of an integration of two analytical elements pursued in Marx's own work. First, understanding banking credit as a logical and historical generalisation of commercial credit. Second, understanding money hoards in the circuit of capital, and secondarily those in circuits of revenue, as the foundation for credit relations. Those hoards are taken to support credit relations, but not as a source of deposits that are subsequently loaned out. They support credit relations by creating dynamic scopes for the circulation of bank liabilities issued *ex nihilo*, to the extent those liabilities are accepted by capitalists and workers as embodiments of capital and stores of wealth.

The section also discusses the broad monetary structure defined by credit relations, in which monetary claims with varying degrees of social generality enjoy varying degrees of circulation. Bank liabilities circulate domestically alongside a more general credit money issued by a Central Monetary Authority (CMA), which invariably comes to be part of the capitalist state. Domestic money circulates alongside a world money of international settlements among capitalists in a position to withdraw value from the domestic economy. Each form of money establishes its circulation through distinctive market and institutional foundations. The ability of the credit system to accommodate any given pace of credit extension will depend on its ability to maintain these foundations. The resulting pace of net credit extension is subject to a series of concrete determinations, including existing capitalist appetite to hold bank liabilities as capital, the profitability of private banks, the ultimately political goals governing monetary policy, and the economy's external commodity and capital flows.

3.1 Commercial and Banking Credit

In Marxian political economy banking credit is understood as a generalisation of commercial credit, which emerges spontaneously between capitalists, typically those engaged in the same supply chain.⁹ Commercial credit consists of various forms of promissory notes issued by purchasing capitalists in lieu of payment with money. Such notes may enjoy a degree of circulation, commonly within a given supply chain: their original recipient may be able to endorse the notes and use them to purchase inputs from another capitalist. To the extent that they do, promissory notes reduce the need for money equal to their own measure in the circulation of commodities along the chain. They also speed up sales, which may now take place before the buyer secures sufficient money revenues for the purchase.

There are unsurmountable limits to these benefits. The issuance, circulation and clearing of promissory notes can never do away with the need for money settlements (and thus holdings). It is impossible for all claims issued by individual capitalists across all branches of the economy to net out to zero over any time period.¹⁰ Further, the economic and social bases of promissory notes are too narrow to permit them to function as full-fledged money themselves. Ultimately, they are claims on a single issuing enterprise, supported by a small number of endorsers. Issues of trust will typically limit their circulation to the supply chain in which they originated.¹¹ Revealingly, they do not terminally settle obligations, as attested by the historical practice of endorsing a note before using it to purchase, pointing to a residual claim on the endorser.

Capitalist banking business develops historically atop commercial credit relations, as bankers advance their own liabilities in the discounting of promissory notes. Banking credit transcends the central limitations of commercial credit. Asset diversification by individual banks and the

⁹ See Itoh and Lapavitsas (1999) for an extensive discussion.

¹⁰ See de Brunhoff (1979).

¹¹ See Lapavitsas (2003).

development of the interbank market bestow on the liabilities of private banks a considerably broader social foundation than the IOUs of individual capitals.¹² Claims on banks are supported by claims on countless borrowers in the economy, and become, in fact, a form of money. Two important consequences follow. First, if banking credit is a generalisation of commercial credit, the demand for credit by functioning capitalists is *logically* prior to its accommodation by the banking system, even when both are expressed simultaneously.

Second, the use of bank liabilities in discounting implies their acceptance as a means of discharging existing credit claims. Put differently, they are a means of payment. As such, they may also be advanced *ex nihilo* not only as money-capital to initiate or augment individual circuits of capital, which is the characteristic form taken by banking credit in contemporary capitalism, but also as means to settle payment obligations.¹³ The ability of banks to advance their own liabilities for those purposes hinges on the willingness of capitalists to accept claims on private banks as the monetary realisation of the value of their output commodities. This will also condition workers' willingness to accept bank liabilities as wages, as those are accepted as payment for consumption goods.

The acceptability and circulation of bank liabilities fundamentally rests on the quality of bank assets, which hinges on the ability of borrowers to make good on their obligations to banks. It also rests on capital reserves that allow banks themselves to make good on their obligations to holders of their liabilities should some borrowers default. Finally, it will also hinge on perceptions of the ability of the banking system to honour promises of convertibility into CMA liabilities.

Conventional Marxian discussions of credit relations will often emphasise their role in mobilising deposits that are subsequently channelled into loans.¹⁴ The view taken here is that deposit making is

¹² Ibid.

¹³ See Marx's polemics with Tooke and Fullarton in Chapter 28 of Volume III of *Capital* in this connection.

¹⁴ See Marx Vol III, Ch 33, or Hilferding (1910) p 79-80, or Uno (1980) Chapter 3, for instance.

logically secondary to the more general creation of credit money. The *ex nihilo* advance of bank liabilities that are subsequently held as capital (and as other stores of value) offers the most developed mechanism for accelerating sales and reducing the relative volume of social capital value tied up as inventories. If capitalists are exchanging parts of their cash holdings for bank liabilities, by definition bank liabilities are being accepted as monetary expressions of capital. But if that is the case, the credit system does not need to wait for deposits in order to advance loans. Capitalists selling to borrowers or to their workers will accept bank liabilities as a means of payment, and hold on to them as part of their capital. The acquisition or disposal of bank deposits in this context are mere adjustments in portfolios in line with existing preferences for bank liabilities or more social forms of money.

Capitalist financial intermediation takes on its defining content in this context. Hoards in the circuit of capital, as well as those in circuits of revenue, create dynamic scopes for the circulation of credit-system liabilities, to the extent that those are accepted as an embodiment of capital and a store of value. On the basis of this circulation, banks may advance their own liabilities to initiate or augment circuits not currently in possession of sufficient volumes of money capital. The credit system dynamically mediates between the inherent need for a part of social capital to exist in the form of idle money, and the existence of potentially profitable avenues for investment lacking sufficient own money capital. It does so by creating its own forms of money, backed by claims on all borrowers, that are accepted as suitable monetary embodiments for capital, as stores of wealth, and as means of payment. This mediation rests upon and defines distinctive capitalist monetary structures, and introduces new, concrete determinations and contradictions to the management of money hoards in capitalism.

3.2 The Market and Monetary Constraints on on Endogenous Credit

The approach outlined above points not only to the endogeneity of credit money, but also to the irreducibly monetary requirements and constraints bearing on credit relations. In the Marxian framework, money hoards in the circuit of capital and in circuits of revenue represent the demand for money by capitalist producers and consumers, as well as of workers. They fundamentally condition the pace of net credit extension: The magnitude and distribution of these hoards relative to production and consumption plans conditions net credit demand. The composition in which capitalists and workers wish to hold them conditions the ability of the credit system to accommodate that demand.

Consider first the aggregate relationship between the relative magnitude of money hoards and the demand for credit. It is evident that if aggregate money holdings are too small to support production and consumption plans, net credit demand will increase. Conversely, suppose first that circuits of revenue contain money in excess of levels needed for consumption and as stores of value. If consumption lending takes place, workers and capitalist consumers may use the excess to quicken the pace of debt repayment. In that case, excess supply of credit money would be dynamically eliminated by tapering future demand for credit. Workers and capitalist consumers may also drain the excess by acquiring securities or other claims on capitalist enterprises, which would end up with the undesired money stocks.

Consider now capitalist producers. If enterprises find themselves with money stocks in excess of current needs, capitalists will effectively adjust their portfolios, moving the relative balance of capital values in money and commodity form in line with their current plans. This may take place as capitalists increase the pace of investment, if profitable opportunities exist and are identified, thereby increasing relative volumes of capital value in commodity form. It may also take place as capitalists increase the pace of debt repayment and moderate the dynamic pace of net credit

demand. As noted by Goodhart (1989), any pace of credit and money creation in excess of existing demand for money, “sets up subsequent portfolio readjustments involving purchases/sales of a wide range of goods, services, and assets, until full equilibrium is restored.”¹⁵ In the approach taken here, “equilibrium” is given by desired levels of money hoards in the circuits of capital and revenue.

Along similar lines, and with greater significance for the contradictions of credit relations, the composition in which capitalists and workers wish to hold their money fundamentally conditions the ability of the credit system to accommodate any given level of net credit demand. The development of capitalist credit relations gives rise to a hierarchy of money forms, whose circulation is ensured upon different market foundations. Despite considerable institutional and historical variations, capitalist credit systems have broadly defined and rested upon a three-tiered monetary structure.

Liabilities of the private banking system constitute the least general form of money. The ultimate market foundation for their circulation are bank assets and capital reserves. It is further supported by convertibility into more general CMA liabilities, which requires the maintenance of fractional reserve holdings. Significantly, banks seek to boost their circulation by offering various schedules of interest rates paid to their holders and terms of convertibility.

Marxian political economy has offered distinctive insights into the market and institutional foundations for the circulation of CMA liabilities.¹⁶ The development of the interbank market boosts the circulation of bank liabilities, as the mutual exchange of claims ensure the assets of any given bank include claims on other banks. In addition, interbank lending generally allows banks to address quickly any temporary liquidity shortfalls. The development of the interbank market is thus central to the emergence of bank liabilities as money. The CMA emerges as the dominant institution

¹⁵ Goodhart (1989), p 33.

¹⁶ See Lapavitsas (1997), Itoh and Lapavitsas (1999) and Lapavitsas and Saad-Filho (2000).

in the interbank market. It oversees interbank settlements, and its defining responsibility is ensuring the smooth functioning of that market and of banks issuing liabilities in it. Its liabilities come to settle interbank balances, and are supported by claims on all money-market banks in the economy. As such, they are the most general and social form of credit money in the domestic economy.

With the development of capitalism the CMA becomes part of the capitalist state, which further supports the domestic circulation of its liabilities by defining them as legal tender and the means of discharging tax obligations. In Marxian political economy this support is secondary to the market foundations for the circulation of CMA liabilities. The significance of this point should be clear from the fact that the domestic legal-tender status of CMA liabilities has no international purchase, and may also be undermined during periods of monetary crises and severe instability by domestic currency substitution. The CMA must thus sustain the circulation of its liabilities among capitalists in a position to withdraw value from the domestic economy. To accomplish this, it seeks to ensure the sound functioning of the interbank market and institutions active in it. As a result it must oversee and intervene to support overall capitalist profitability, upon which all domestic loan repayments hinge.

The CMA will also support the circulation of its liabilities by holding reserves of a world money that settles international obligations.¹⁷ It typically centralises domestic holdings of world money, the aggregate levels of which evolve in line with international trade and financial flows. While strains on international reserves are only evident during crises of international payments, no CMA can afford to ignore the rate of exchange between its liabilities and world money. That rate directly conditions the international balances of trade and capital flows, profitability, and consequently the overall liquidity and solvency of the domestic credit system. Lastly, the CMA seeks to support the circulation of its own liabilities by setting the terms and rates at which those are available to

¹⁷ See Vasudevan (2009) for a discussion of the institutional and broader political foundations for the concrete emergence of individual national currencies as forms of world money.

domestic banks, which will in turn condition rates paid, and thus demand, for all domestic liabilities.

3.3 The Accommodation of Credit Demand and Rates of Interest

The ability of the credit system to accommodate any given pace of net credit demand is fundamentally conditioned by this monetary structure. As soon as credit is extended, new bank liabilities are advanced to workers hired by the borrower, and to capitalists selling inputs to the borrower. These liabilities will begin flowing back to the banking system, both to service and pay down debt, and as holders adjust their money portfolios in line with their preferred levels of bank and CMA liabilities. Bank lending not only creates holdings of bank liabilities, but also creates demand on banks for CMA reserves. Additional gross demand for world money may also arise as fractions of new revenues flow outside the domestic economy, or new investment fuels demand for imports.

Bank accommodation of demand for credit is driven by attempts to secure bank profits given the character of that demand, and the costs associated with supplying forms of money in line with preferences of money holders. The CMA sets the costs and terms at which it makes its liabilities available to the banking system. In doing so it enjoys advantages following from the legal tender status of its liabilities. Those advantages may create significant scopes for the pursuit of varied political goals of the capitalist state through the conduct of monetary policy. These may conceivably include accommodating full employment and real wage growth or preventing the development of asset bubbles, as well as the more currently fashionable targeting of inflation levels.¹⁸ But in any setting of convertibility, the pursuit of such goals will ultimately be secondary to establishing the market bases for the circulation of CMA liabilities. Thus the maintenance of aggregate profitability,

¹⁸ See Epstein (2002), for instance.

and even more so, the maintenance of stability in the interbank market, are the defining imperatives of monetary policy.

Bank accommodation of credit demand may be formally characterised in relation to the monetary preferences and portfolio behaviour just described. Considering for simplicity a closed economy, suppose money holders are willing to hold a fraction $d(t)$ of their total holdings $M(t)$ in the form of bank liabilities $D(t)$, with the balance held as CMA liabilities $H^C(t)$. Banks hold CMA reserves $H^R(t)$, ensuring they bear relative illiquidity levels,

$$l(t) \equiv \frac{D(t) - H^R(t)}{D(t)} \quad (1)$$

The balance-sheet choices of money holders and banks establish aggregate levels of illiquidity ,

$$y(t) \equiv d(t)l(t) = \frac{D(t) - H^R(t)}{M(t)} \quad (2)$$

Total money in circulation, understood to be the result of endogenous money creation may be structurally measured in relation to total CMA liabilities in circulation, $H(t) = H^R(t) + H^C(t)$,

$$M(t) = \frac{1}{1 - y(t)} H(t) \quad (3)$$

This relationship may be expressed dynamically in relation to net changes in debt,

$$\dot{M}(t) = \dot{B}(t) = \frac{1}{1-y(t)} \{ \dot{H}(t) + \dot{y}(t)M(t) \} \quad (4)$$

In line with an endogenous understanding of money creation, equation (4) offers a dynamic description of the various manners in which the banking system may accommodate any given level of net credit demand. Higher paces of net credit extension $\dot{B}(t)$ may be accommodated with higher (or rising) levels of aggregate illiquidity. Banks may simply draw down on existing reserves, increasing $l(t)$. They may also attempt to secure higher levels of $d(t)$, offering combinations of higher interest rates on bank liabilities and different terms on their convertibility. As neither of these two methods are sustainable means of supporting credit expansion in a growing economy, banks must also avail themselves of new CMA liabilities at the going cost and terms.

This monetary structure also affords characterisations of bank profits and of the determinants of interest rates on loans. At any point in time, aggregate bank profit flows will be conditioned by the volumes of credit outstanding, the rates paid on loans $i_l(t)$, deposits $i_d(t)$ and reserves $i_r(t)$, and the operational costs incurred, $C(t)$,

$$\Pi(t) = B(t)i_l(t) - D(t)i_d(t) - H^C(t)i_r(t) - C(t) \quad (5)$$

This may be expressed in relation to the stock of money,

$$\frac{\Pi(t)}{M(t)} = i_l(t) - d(t)i_d(t) - (1-d(t))i_r(t) - \frac{C(t)}{M(t)} \quad (6)$$

Bank profits arise from spreads between loan rates and average funding costs, net of the operational costs incurred in performing intermediation functions.

Letting $\varphi(t)$ measure the total social costs of intermediation, consisting of bank profits and operational costs, relative to loans outstanding, equation (6) yields,

$$i_l(t) = \varphi(t) + d(t)i_d(t) + (1 - d(t))i_r \quad (7)$$

Two observations are pertinent on this approach to the interest rate on loans. First, through the payment of interest on loans, credit relations effect a redistribution of monetary profits. This redistribution funds payments to holders of bank liabilities, covers intermediation costs and the profits of intermediaries, and includes a distinctive form of seignorage paid to the CMA.

Second, it improves on conventional loanable-funds approaches to the interest rate by considering the *ex nihilo* issuance of bank liabilities as the characteristic form of credit under advanced capitalist conditions. The supply of credit is explicitly understood as conditioned by the evolving preferences of money holders over forms of money with different social content or liquidity. At the same time, the approach offered here improves on horizontalist approaches. Even in a closed economy, in which by definition the external constraints on the conduct of monetary policy are absent, the rate of interest on loans does not simply correspond to an exogenous choice by the CMA. It is conditioned by the social costs of intermediation and average funding costs. The latter are determined by rates on CMA liabilities as well as by the rates needed to induce holdings of bank liabilities in line with profit-maximising plans by banks. In this distinctive manner the “supply” behaviour of money holders and of financial intermediaries still conditions the determination of interest rates, even in a setting where credit is understood to take the form of the *ex nihilo* issuance of bank liabilities.

4. Impact, Limits and Contradictions of Credit in Accumulation

Credit relations play an essential part in the process of capitalist reproduction by boosting investment and supplying growing means for the monetary expression of capital value. They consequently boost aggregate demand, quickening the pace of contemporaneous sales and realisation of profits, thus reducing inventories. If sustained, the expansion of credit consequently leads to higher rates of profit and accumulation. This view is at some variance with those of traditional Marxian approaches, in which credit is effectively taken as an increase in the aggregate pace of investment. As a result, credit relations are understood to effect “A [relative] reduction of circulation-capital in a capitalist society [which] undoubtedly means the corresponding increase of productive capital, and consequently a promotion of surplus-value production.”¹⁹ This section critically considers the applicability of this approach to credit systems based on *ex nihilo* issuance of bank liabilities.

In considering the impact of credit relations on accumulation the section also discusses the emergence of *profit of enterprise*, net of interest payment obligations, as the concrete imperative governing capitalist behaviour. In line with Marx’s approach, the very functioning of credit relations is understood to condition their limits and contradictions. Credit relations yield doubtless benefits for social capital, while simultaneously becoming a source of instability and potential disruptions to the accumulation of capital. This section concludes by motivating, along broad Marxian lines, the ways in which credit relations and the payment obligations they create exacerbate and give distinctive expression to broader industrial and commercial crises and the capitalist business cycle.

4.1 Traditional Marxian Approaches

According to Marx (1894), by placing means of payment in the hands of capitalists ready to invest, credit relations make a range of contributions to the process of accumulation. First, it strengthens

¹⁹ Uno (1980), p 110.

tendencies for the equalisation of profit rates across the economy. Second, it quickens the pace of sales and reduces the relative size of inventories. Both these mechanisms are at work in the approach to contemporary monetary systems taken here, with only minor technical qualifications.²⁰

Marx (1894) also argues that credit relations contribute to profitability by effecting economies in the medium of circulation. These economies are understood to arise through three mechanisms: The circulation of credit notes reduces the circulation of metallic money, reducing its costly wear and tear;²¹ money is further “dematerialised” through the netting out of outstanding credit claims, which allows money to disappear from many transactions; and the operations of credit increase the velocity of money. These economies, however, were motivated in relation to monetary systems grounded on a commodity money. They thus require critical examination from the perspective of contemporary monetary systems.

First, it is not clear at this level of abstraction what the costs are for a state-issued credit-money, and what economies could be achieved through the circulation of higher relative volumes of private credit-system liabilities. Second, contemporary payments systems have significantly furthered the ‘dematerialisation’ of money identified by Marx. Electronic payments platforms, while imposing high fixed costs, have essentially zero marginal costs for higher volumes of transactions.²² This has effected considerable economies for social capital. But dematerialised electronic entries in bank-operated payments systems have become money, and thus appear in every transaction.

Third, Marx’s arguments concerning credit and the velocity of money need to be considered deliberately and in turn. Marx identifies “technical” increases in money velocity arising

²⁰ Tendencies exist for the equalisation of expected, risk-adjusted rates of profit, and the impact of credit on inventories needs to be considered dynamically, as discussed below.

²¹ Volume II, Chapter 6.

²² See Lapavistas and dos Santos (2008).

from credit relations. These involve the aforementioned netting out of claims, as well as reductions in money reserves held by capitalists. Overdraft arrangements and access to short-term credit markets (such as those for commercial paper) may give capitalist enterprises ready, on-demand access to money as it is needed.²³ These reductions in money holdings relative to revenue flows amount to a dynamic increase in the pace at which capitalist sales revenues are reinvested, boosting profitability.

But Marx also argued that “The great regulator of the velocity of the currency is credit.”²⁴ This regulation is understood to arise as capitalists make deposits with idle money funds, and those deposits are loaned to capitalists who will spend them more quickly than the depositor would have. If parts of money hoards in the circuit of capital are used to acquire newly issued corporate securities, and the resulting inflows are actually invested, this is effectively what happens. Money holders acquire either fixed (bonds) or variable (equity) claims on future profits. As a result, not only is money more quickly recommitted to investment, but prices for capital market assets are established.

But Marx’s description clearly does not apply to the *ex nihilo* advance of bank liabilities. All increases in the pace of investment will boost sales and profit flows and reduce the relative size of inventories. But increases in the pace of investment that is self-financed from previously unspent capitalist revenues, whether those were retained by the investor or raised from other capitalists via the issuance of non-monetary liabilities, will do so by increasing the aggregate pace at which capitalist revenues are recommitted to investment. Increases in the pace of borrowing will do so by increasing the total volume of money in circulation. Credit relations thus do not unambiguously effect reductions in circulation capital.

²³ Notably, access to such funds does not affect accumulation funds, as their existence follows precisely from the need for social capital to hold money as money.

²⁴ See Marx (1894), chapter 33.

4.2 Credit, Investment and Real Accumulation

By supporting investment, higher sustained paces of net credit extension ensure commodities sell more quickly and aggregate inventories are smaller in relation to total capital value. The dynamic profitability of social capital rises as its turnover time is reduced. Considered at the aggregate level, the impact of the average pace of investment, own or leveraged, on the dynamic profitability of social capital gives rise to potentially destabilising accelerator effects. Higher (lower) aggregate profitability may induce quicker (slower) individual paces of overall investment, which will in turn further boost (taper) aggregate profitability. While this points to potential collective benefits arising from general increases in the individual paces of investment, the competitive character of capitalist appropriation rules out such coordination.

Increases in the pace of borrowing will contribute to these processes, helping increase the rate of profit on aggregate social capital. They also open the possibility for leveraged gains for borrowing enterprises if the profitability of circulating capital exceeds the rate of interest. Leverage may thus give rise to a second potentially destabilising accelerator effect, as high (low) levels of profit of enterprise may support increases (decreases) in individual levels of leverage that, by boosting aggregate investment, will themselves boost (weaken) the aggregate profitability of capitalist enterprises.

Aggregate levels of leverage, given by outstanding debt to total capital in circulation, emerge as important determinants of aggregate profitability. They also condition the significance of the redistributions effected by interest payments, and of credit risk. Those levels develop as the result of the decisions of capitalist enterprises about how to fund expansions in investment. They may draw on fractions of previously realised profits, and on new credit. In this connection it is important to note that net loans extended will make a greater contribution to total capital value in circulation than to total debt outstanding. Net lending finances investment undertakings by borrowers of equal

value to the new debt obligations it creates. But it additionally provides monetary means for the realisation of profits by capitalists selling either to borrowers or to workers employed by those borrowers. Net lending thus contributes to the net worth of aggregate social capital in the same measure in which it makes possible increases in the scale of investment financed from monetary profits.

The ability of credit to boost accumulation faces two broad constraints, productive and financial. Productive constraints arise as paces of investment, self-financed or leveraged, will only contribute to real accumulation if commodity output can keep up with the resulting quicker paces of demand. While net lending contributes both to demand and to investment that will lead to commodity output, these contributions are neither simultaneous nor commensurate.²⁵ Inasmuch as the time-productivity of labour conditions the pace at which commodity output emerges following investment, sufficiently high paces of expansion of investment may at exhaust or overly tax inventories. At this level of abstraction, this potential exhaustion sets the limits for the potential positive effects of credit relations on real accumulation. In such settings, further increases in the pace of net credit extension will no longer quicken the pace of sales and profit realisation. They will simply help trigger demand-pull inflation.²⁶

The pace of credit extension at which this limit is reached will be conditioned by the dynamic impact of credit on flows of commodity demand and supply. Consider the dynamic contribution to those flows of present net credit extension. The new money will contribute to future demand in accordance with the pace at which the money is once again spent to finance production or consumption. Its contribution to supply flows will hinge on the rate at which the monetary profits it helps realise are reinvested, expanding the scale of production, and the pace at which invested value

²⁵ The allocation of credit between productive and consumption purposes, for instance, will shape the relationship between the dynamic contribution of credit to commodity demand and supply. See dos Santos (2011).

²⁶ As argued and modeled by Foley (1982). Note that at more concrete levels of analysis, paces of investment conducive to demand-pull inflation may be necessary to achieve broader aims, such as levels of employment or real wage growth.

emerges as output commodities. The limits on the ability of net credit extension to boost profitability and rates of accumulation are thus defined by the rate of own investment funded from profits, the velocity of money, and the time-productivity of labour.²⁷

The financial constraints stem from the inherent risks and potential disruptions posed by credit relations. Leveraged investment undertakings are haunted by the same systemic potential industrial and commercial crises that threaten all capitalist undertakings. But as borrowing creates payment obligations, the effects of those disruptions will be more destructive. The possibility and incidence of bankruptcy become the fulcra of capitalist crises, spreading their effects by breaking chains of payments on which capitalist plans hitherto hinged. The credit system may itself become the source of crises, as disruptions to credit extension may themselves lead to breaks in payments chains.

Significantly, by damaging the assets of banks supporting credit money, such breaks also threaten capital value in monetary form. Bank runs, attacks on national currencies, and the panicked search for the most general forms of money may follow, all of which severely strain the credit system's ability to extend credit. These may follow as a distinctive financial moment of broader industrial and commercial crisis, as well as the result of self-fulfilling concerns by holders of credit-system liabilities about the quality of credit-system assets. The capitalist business cycle inherently exhibits distinctive credit moments, to which the next section turns.

4.3 The Contradictions of Credit in Accumulation

While recognising the contribution of credit relations to accumulation and profitability, Marx also devoted considerable space to discussions of the distinctive contradictions they create for social capital.²⁸ Those discussions may be applied to the approach to credit relations taken here in order to

²⁷ See Foley (1982), or dos Santos (2011).

²⁸ Discussions on these are scattered across part V of volume 3 of *Capital*. See de Brunhoff (1979), Part Two, § II for a robust distillation.

obtain a broad Marxian description of the specific *credit* moments of the capitalist business cycle, which operate quite apart from the specific underlying processes in commodity production and exchange that may be understood to disrupt or challenge profitability.

The upswing starts following a crisis and a period of recession. In their aftermath, wages are typically low, as are the prices of capital and financial assets and means of production. Balance sheets of enterprises that survived the previous crash will be generally strong, with little debt and large relative money holdings. In such a setting many things can trigger enhanced profit expectations, often including the development of a new industry. As a result the aggregate pace of self-investment increases and enterprises start becoming less liquid. This increase is in itself sufficient to enhance the dynamic profitability of aggregate capital in circulation, and, in the setting of low interest rates, the profitability of capitalist enterprises net of debt servicing payments. Enhanced profitability helps validate and deepen original expectations.

Concurrently, demand for credit rises. Given low existing levels of indebtedness and increasingly good prospects for enterprise profitability, the banking system readily accommodates heightened demand for loans. Cross-border inflows of capital may ease constraints on the CMA's ability to accommodate banking system lending decisions. Good and improving prospects on loans enhance confidence on the banking system by money holders, who become more willing to hold bank liabilities, including those with greater restrictions on their convertibility. Money holders become less liquid, as do banks. The resulting heightened paces of credit extension further boost the profitability of capital in circulation. Given the low interest-rate levels, the aggregate financial robustness of capitalist enterprises continues to improve as greater paces of credit expansion increase aggregate profits by more than interest payments. Even if interest rates begin rising as the boom progresses, the rate of profit on circulating capital may rise even more quickly as the pace of overall investment continues to accelerate.

During this upswing competition propels enterprises and banks into increasingly illiquid positions, and the aggregate economy into ever higher levels of leverage. “Financial innovations” allowing greater levels of lending relative to erstwhile practices and regulatory constraints spread. While it lasts, the self-fulfilling high profitability proves irresistible to functioning and banking capital, even when a bust is acknowledged to be inevitable. “When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance. We’re still dancing.”

A plurality of developments can stop the music. Along traditional Marxian lines, mark-up rates may fall as the cycle progresses. The competitive adoption and spread of labour-saving technical innovation in some industries may reduce scopes for exploitation of labour-power. The boom may also tighten labour markets, leading to gains in real wages and reductions in the rate of exploitation.²⁹ Other Marxian contributions have pointed (unconvincingly) to disruptions in sales due to recurrent “disproportionalities” in the types of commodities produced, or to tendencies to “underconsumption” arising from lopsided distributions of income.³⁰ It is also possible the boom eventually leads to increases in lending rates, including as a result of deliberate intervention by the CMA in the face of developing inflationary pressures. Any of these developments is capable of triggering falls in the paces of investment and in credit extension, both of which may also fall on purely speculative bases.

What is significant from the standpoint of the account offered here is that falls in paces of investment and borrowing are in themselves sufficient to reduce profitability in their own right. Obligations on the stocks of debt acquired during the boom raise the spectre of bankruptcy, changing the behaviour of enterprises. Seeking just to survive, they will scramble to get access to

²⁹ As emphasised by the Uno School. See Uno (1980) or Itoh and Lapavitsas (1999).

³⁰ See Day (1980) for an overview of the debates involving the former; see Sweezy (1942) on the later.

money as means of payment, reducing investment, thus exacerbating the crisis. Enterprises will also demand new credit to avoid bankruptcy.

The credit system will generally be in a poor position to meet this demand, despite the collective benefits that may arise if lending is sustained through the crisis. Confidence in all but the most general money forms may disappear suddenly, greatly curtailing the circulation of domestic liabilities. Even more so than investing, capitalists do not hold liabilities as a class. To sustain the circulation of its liabilities the CMA may have to increase rates on them dramatically (or restrict their convertibility). Souring portfolios, collapsing demand for bank liabilities, and highly illiquid positions inherited from the boom ensure banks find it difficult to accommodate loan demand, even if CMA liabilities are cheaply available. Rates on loans spike, particularly for those of short maturities demanded to secure means of payment, exacerbating the financial distress of enterprises.

The crisis is followed by a period of downswing, in which the same accelerator effects boosting profitability and the paces of investment and borrowing that conditioned the boom play out in the exact opposite direction. Not only are capitalist revenues reduced, but they are also significantly used to repair enterprise and bank balance sheets through falls in the paces of own investment and reductions in gross credit demand. Interest rates fall, as do wages and prices of capital assets and means of production. Those movements lay the basis for a new upswing as soon as the protracted process of deleveraging of surviving enterprises has run its course.

5. Conclusions

This paper has advanced a distinctive, Marxian approach to the content, limits and contradictions of credit relations. At the broadest level their centrality to capitalist accumulation is understood to stem from their role in providing the expanding means for monetary expression of capital values necessary for accumulation. They develop spontaneously as capitalist investment plans

systematically include demand for credit, met in the first instance by commercial credit. Banking credit generalises commercial credit relations, and is founded on pools of money developing in the circuit of capital and in circuits of personal income. Those hoards provide dynamic scopes for the circulation of bank liabilities issued *ex nihilo*, to the extent that those are accepted as monetary expressions for capital value and stores of wealth. Their magnitude and distribution relative to production (and consumption) plans conditions the demand for credit. The forms in which holders are willing to maintain them condition the ability of the credit system to accommodate that demand.

Issuers of monetary liabilities need to support their circulation with the quality of their assets, capital and fractional reserves, and the terms of convertibility and interest rates on them. This may constrain the ability of the CMA to accommodate paces of credit granted by the banking system. The rate of interest on loans comes to be understood not as a simple exogenous monetary policy choice, but as a consequence of the rates of interest necessary to ensure the circulation of domestic bank and CMA liabilities, as well as of the costs and profits of the banking sector. In the resulting, distinctive loanable-funds approach to interest, rates are shaped by “supply factors”, even in a setting of *ex nihilo* issuance of bank liabilities.

Credit extension can support sales and profit flows, leading to reductions in the relative magnitude of inventory stocks, and boosting the profitability of social capital. Scopes for such boosts are limited by the exhaustion of inventories. This hinges in turn on the pace of own investment and the dynamic productivity of labour, which fundamentally constrain accumulation. Credit relations also create distinctive contradictions for social capital. They enhance the impact of disruptions to commodity sales, as those come to threaten capital value in monetary form. They also exacerbate and compound business-cycle fluctuations, which come to include sharp disruptions created by bankruptcies.

Social capital is forced constantly to negotiate between the benefits and risks inherently posed by credit. The competitive market process ensures this negotiation is not pursued on the basis of the collective performance of capital as a whole. Profitability signals promote destabilising behaviour over the cycle. Individual appropriation ensures industrial and commercial crises constantly threaten explosive monetary crises and destructive falls in credit extension, precisely at the time those are most damaging. These contradictions are inherent to the credit monetary form, and, consequently, to the process of capital accumulation that relies on them.

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