From ‘money as capital’ to ‘capital as capital’: a further transition in Capital?

Janaína de Faria

Abstract
The significance and consistency of the categorical transition from money in *simple commodity circulation* to the circulation of *money as capital* is widely discussed in the Marxist literature. However important this categorical transition is, I argue that there is another fundamental categorical transition from the circulation of *money as capital* to *capital as capital* that was being drafted by Marx in the *Manuscripts of 1864-5* (the basis for volume 3 of *Capital*), which has not been yet identified in the literature. Particular attention is given to the role of hoarding in the process of accumulation and how the introduction of the category of interest-bearing capital not only overcomes its limitations, but reveals the general feature of capital, i.e. the fetish of capital as immanently fruit-bearing. Investment decisions always consider a given interest rate that supposedly arises from money capital ownership *per se*, which serves as a reference for valorisation *in general*. Hence this structural feature of the capitalist mode of production has implications for the whole system of value production, circulation and distribution.

Key words: value theory, money, capital, interest-bearing capital, Marx

1. Introduction
The category of capital is famously characterised in chapter 4 of *C1*¹ as “an automatic subject”, “self-valorisation [*Selbstverwertung*]” and as “dominant subject [übergreifendes Sujet]” (C1:255). Marx points out that money, to be transformed into capital, needs to enter circulation in one of the three markets: the commodity market, the labour market and the money market (C1:247). He does not treat capital in the strict sense of *industrial capital*, but also includes *merchants’* and *interest-bearing capital* as particular forms that operate in circulation, a notion that is reinforced in the last paragraph of chapter 4 (C1:256-7). For the purposes of this paper, focus will be given particularly to the sphere of circulation – this is in no way a dismissal of the sphere of production, whose analysis is taken for granted. It is a reconstruction of Marx’s categorical path in unfolding the fetish of capital itself throughout the three volumes of *Capital*; the fetish of money breeding money, which is structural to the capitalist mode of

¹ I refer to the Penguin edition of *Capital*’s volumes One, Two and Three as *C1*, *C2* and *C3*, respectively, and to the Brill edition of the English translation of the *Manuscripts of 1864-5* (Marx’s drafts from which Engels organised *C3*) as *M3*. Citations from *M3* reproduce the symbols used by the translator Ben Fowkes to indicate Engel’s edition to the text in *C3*: “where a passage begins with > and ends with < it was either left out by Engels or substantially modified and has been published here for the first time in its original form” (Translator’s Note, M3:X1). The reference for the *Marx and Engels Collected Works* is *CW*, followed by the number of the published volume.
production. Capital investment decisions always consider a risk-free interest rate that supposedly arises from money capital ownership \emph{per se}, which serves as a benchmark for valorisation \emph{in general}.

To approach this matter, a few clarifications on the functions of money, especially money as hoard, and its relation to the categorical transition to the circulation of \emph{money as capital} are necessary. It is well-known that the consistency of this dialectical transition has generated a vast and still ongoing scholarly debate in the Marxist literature. Even though my position is indicated in the first section, a literature review on the topic lies outside the scope of this paper. By providing abundant textual evidence from Marx’s writings, a further fundamental categorical transition in \emph{Capital} is reconstructed throughout this paper: from the circulation of \emph{money as capital} to \emph{capital as capital}. To my knowledge, this transition has not been identified before in the literature. Particular attention is given to the role of hoarding in the form of commodity money in capital accumulation and how the introduction of the category of interest-bearing capital not only overcomes the limitations of hoarding, but reveals the general feature of capital, i.e. the fetish of capital as immanently fruit-bearing.

\section{Money as hoard and the transition to money as capital}

Roman Rosdolsky (1977) noticed a relevant change in the exposition of ‘money as money’ between the \emph{Grundrisse}, on one hand, and both the \emph{Contribution to the Critique of Political Economy} and \emph{Capital}, on the other:

In the \emph{Rough Draft} [\emph{Grundrisse}] the category ‘money as money’ is conceived essentially as the development of the form M-C-M [general formula of capital]. Indeed the study of this circuit demonstrates most clearly that here ‘money functions neither only as a measure, nor only as medium of exchange, nor only as both; but has yet a third quality’, that it ‘has an independent existence outside circulation, and that in this new character it can be withdrawn from circulation just as the commodity must constantly be definitively withdrawn’. However, since, as we have already emphasized, ‘money and commodity in the circuit M-C-M imply more advanced relations of production’ […], Marx decided in the \emph{Contribution} to develop the third function of money from C-M-C, ‘the immediate form of commodity circulation’ […]. This is all the more essential as we can already see from the \emph{Rough Draft} that the third function of money is already in evidence in the form of circulation C-M-C, insofar as money does not function as a mere medium of circulation. (Rosdolsky, 1977:151).

In the \emph{Grundrisse}, Marx claims that “[t]he third determination of money in its complete development presupposes the first two determinations and constitutes their unity. Money, then, has an independent existence outside circulation; it has stepped outside it” (\emph{CW28}:151). In order to grasp this ‘third quality’ of money, let us briefly look into the ‘first two determinations’, which are exposed in chapter 3 of \emph{C1} as the functions of money as \emph{measure of value} and as \emph{means of circulation}. The former points to the fact that, even though the presence of money is not whatsoever required upon any commodity’s debut onto the market stage, products of labour, as commodities, already enter circulation
bearing the monetary expression of their value, their price-form, because the act of *measurement of value* must be previously performed mentally, followed by its conversion into the units of the conventional standard of price. Nonetheless, by bearing a price-tag on the market, the *commodity form of value* [C] indicates that it ‘wants’ to metamorphose itself into the *money form of value* [M], i.e., its owner wants it to be sold. Money, in its function as *means of circulation*, comes into play to consummate the act of exchange\(^2\). The realisation of value is accomplished with the *sale* of the first commodity [C-M], whilst the *purchase* of another commodity of equivalent value [M-C] closes the individual commodity’s circuit [C-M-C], assuming that the purpose of its selling is to allow its owner to buy. However, these transactions are necessarily embedded in the web of exchanges that form the *sphere of circulation*, as

> [t]he two metamorphoses which constitute the commodity’s circular path are at the same time two inverse partial metamorphoses of two other commodities. [...] Hence the circuit made by one commodity in the course of its metamorphoses is inextricably entwined with the circuits of other commodities. *This whole process constitutes the circulation of commodities.* (C1:207, *emphasis added*)

As the circuit starts and ends with commodities of equal values but different use-values, the outcome of the transactions can be reduced to [C-C], “exchange of one commodity for another, actual exchange of matter” (*CW*29:324), as Marx puts it in the *Contribution*. In this sense, the ultimate purpose of the discrete exchanges that make up the whole process of commodity circulation cannot be anything else but to connect private producers for the satisfaction of needs through the acquisition of useful things. Marx, however, is careful to highlight the distinction of commodity circulation, which requires the universal equivalent as the intermediary, from direct barter (C1:207-8). As objects of utility, products of labour disappear when consumed, but once they assume the commodity form, the circulation process does not end with the withdrawal of one commodity from the market – *it always leaves behind its equivalent in value in the money form, which serves as the conduit for the exchange processes which permanently connect the social chain of production*, performed in private and independent units:

> Every commodity, when it first steps into circulation, and undergoes its first change of form, does so only to fall out of circulation once more and to be replaced again and again by other commodities. *Money, on the contrary, as the medium of circulation, haunts the sphere of circulation and constantly moves around within it.* (C1:212-3, emphasis added)

---

\(^2\) Marx points out that the standard of price is generally enforced by law (C1:192-5) and that, as means of circulation, money mainly assumes the form of “inconvertible paper money issued by the state and given forced currency” (C1:224), hence assuming “a purely functional existence in which it is externally separated from its metallic substance” (C1:227). See Campbell (2017) for a discussion on money without intrinsic value in chapter 3 of *C1*. 


This can of course be interrupted by the withdrawal of money from circulation and, in this case, money functions as hoard (the first subfunction of money as money) \( (C1:227\text{ff}) \). It becomes temporarily excluded from its function as means of circulation, although it functions as hoard exactly because of the power it can perform in circulation \( (CW28:151) \): it can potentially buy any use-value but this unlimited capacity of independently expressing absolute social wealth is always limited by its quantity \( (C1:230-1) \). This contradiction drives the quantitative piling up of the social power “ready to be used” \( (C1:229) \) that money conceives and, to this end, exchange process becomes the means of privately accumulating crystallised value outside circulation: “Instead of being merely a way of mediating the metabolic process \([\text{Stoffwechsel}]\), this change of form \([\text{C-M}]\) becomes an end in itself” \( (C1:228) \). The allusion to the circuit \([\text{M-C-M}]\), the germ of the circulation of money as capital \([\text{M-C-M}']\), is quite explicit. As we know from Rosdolsky’s quote above, Marx had initially drafted the exposition of the category of money as money from \([\text{M-C-M}]\) in the \textit{Grundrisse}, where we read: “In this aspect, its role as capital is already latent. It is negated as mere means of exchange” \( (CW28:151) \).

Although bearers of capital, like hoarders, are constantly compelled to privately accumulate value in the money form, the rationality that grounds accumulation is not the same, considering its relation to the sphere of circulation:

This boundless drive for enrichment, this passionate chase after value, is common to the capitalist and the miser; but while the miser is the capitalist gone mad, the capitalist is a rational miser. The ceaseless augmentation of value, which the miser seeks to attain by saving his money from circulation, is achieved by the more acute capitalist by means of throwing his money again and again into circulation. \( (C1:254-5, \text{emphasis added}) \)

Hence, it is not the logic of the mere withdrawal of money from circulation, which hoarding conceives, that prevails; as capital, money must be constantly thrown into circulation \( (C1:247) \): “[t]here is here no antagonism, as in the case of hoarding, between the money and the commodities” \( (C1:256) \). Indeed, left into coffers, money does not multiply itself on its own, nor does it play a role in structurally recreating the conditions for the continuity of commodity circulation. The notion that, as hoard, money becomes otherwise a residue of simple commodity circulation, breaking its connection with the social chain of production, is present in the \textit{Grundrisse}:

It [(simple) circulation] is now negated in each of its moments: as commodity, as money, and as the relation of the two, as the simple exchange of the two, circulation.

The repetition of the process from both points, money and commodity, does not spring from the conditions of circulation itself. The act cannot again be rekindled of itself. \textit{Circulation does not, therefore, carry within itself the principle of self-renewal}. It proceeds from preposited moments, and not from those created by itself. Commodities must be thrown into it again and again, and that \textit{from outside}, as fuel into the fire. Otherwise, it flickers out in indifference. It would
flicker out in money as an indifferent result, in so far as money would no longer have any connection with commodities, prices, circulation, cease to be money and express a production relationship; leaving no more than its metallic being, with its economic being annihilated. (CW29:479)

Grounded on the self-renewal principle, Martha Campbell’s analysis of the categorical transition to capital is particularly illuminating. She insists on Marx’s argument that the purpose of exchange in the [C-M-C] circuit can only be the satisfaction of needs, but, at the end of the circuit, commodities’ use-values not only disappear with consumption at the end of the circuit, the ‘Cs’ have lost their value form because it is not required for the purpose C-M-C serves; products do not need to be commodities to satisfy needs. To state it differently, need satisfaction can be accomplished by a variety of other social arrangements besides commodity exchange. (Campbell, 2013:161)

Although Mau (2018:91ff) downplays the importance of the self-renewal principle, he emphatically considers the transition to capital to be logically consistent when Marx abandons the [C-M-C] circuit in chapter 4 of C1 to dissect the [M-C-M] circuit, which is also a formal possibility, “not an arbitrary assumption, but a result of the analysis of the commodity” (Mau, 2018:84). Whereas the category of money [M] is a dialectical result from the analysis of the commodity [C], the discrete transactions [C-M] and [M-C] may integrate either [C-M-C] or [M-C-M]; one is the mirror image of the other. In [M-C-M], however, money is thrown in circulation and “flows back to its initial point of departure. […] We have here, therefore, a palpable difference between the circulation of money as capital, and its circulation as mere money” (C1:249-50, emphasis added). Nonetheless, [M-C-M] is irrational since one sum of money can only be distinguished from another quantitatively, so “[t]he complete form of this process is therefore [M-C-M]” (C1:251). Value in the money form constantly re-enters circulation as capital, reproducing itself, and as a result, it is not reduced to its form, money (Campbell, 2013:168). The circulation of money as capital, categorised as a process of permanent “self-valorisation [Selbstverwertung]”, which requires constant metamorphoses between [M] and [C] in circulation, differs thus from simple commodity circulation:

The simple circulation of commodities – selling in order to buy – is a means to a final goal which lies outside circulation, namely the appropriation of use-values, the satisfaction of needs. As against this, the circulation of money as capital is an end in itself, for the valorisation of value takes place within this constantly renewed movement. The movement of capital is therefore limitless. (C1:253, emphasis added)

The contradiction Marx deals with in chapter 5 is how ‘more money’ (surplus value) than it’s thrown can be withdrawn from circulation, under the condition that commodities are predominantly bought and sold on the basis of the exchange of equivalents (C1:266). For readers familiar with Capital,
the conclusion is well-known: “Capital cannot [...] arise from circulation, and it is equally impossible for it to arise apart from circulation” (*C1*:268). On the one hand, surplus value must arise with the *consumption of the commodity outside circulation*, though bought in circulation at its value [M-C]; on the other, the consumption of the commodity’s use-value must at once not destroy its own value and generate new value, to be realised in circulation [C-M’]. The mystery behind the general formula of capital is then unfolded in chapter 6 of *C1*, which broadly exposes an argument that Marx had already sketched in the *Grundrisse* and *Urtext*, well summarised by Mau below:

[I]n order for value to sustain itself in M–C–M’, it has to integrate the consumption of the commodity into its own process without losing its value-form. [...] Labour power – or ‘labour capacity’, as Marx calls it at this stage – is thus the only commodity that can be consumed without resulting in the disappearance of value, and capital can therefore only become a dominant form of circulation on the condition that it consumes labour power, that is, in so far as it is not merely a form of circulation, but also a mode of production. (Mau, 2018:84-5)

Marx is crystal clear and unambiguous, in chapter 6, that it is only after the generalisation of wage-labour “that the commodity-form of the products of labour becomes universal” (*C1*:274; see also *C1*:733). Capital, thus, “arises only when the owner of the means of production and means of subsistence finds the free worker available, on the market, as the seller of his own labour-power” (*Ibid*). The historical processes that culminated in the consolidation of this asymmetric point of departure in the exchange relation are only unfolded in the last Part of *C1*; their existence is just presupposed before then. Most importantly, the relation between them presents itself as simple circulation (*C1*:280): it “appears as the result of free contractual agreement” (*M3*:884) between individuals, in which a remuneration, regulated by ‘external’ labour-market conditions, is offered in exchange for work activity to be performed. Workers have no means of production nor subsistence and are only left with the private property of their own selves, which inherently comprises their capacity to work (even though this capacity is not homogeneous for all individuals). They conceive their labour-power as a commodity, whose price is expressed monetarily in the form of wages. After its sale [C-M], money is spent in a basket of means of subsistence containing in total the same magnitude of value [M-C]. In this way, workers appropriate and consume the equivalent of the commodity they own and sell, labour-power, reproduce themselves and return to the labour-market incessantly.

It appears that the circulation of this peculiar commodity is exemplary of selling in order to buy, which characterises simple circulation. Whereas this is not wrong, since satisfaction of needs is the goal of the exchange transactions, this circuit is driven through its integration into the circuit of capital, whose self-renewal is levered by the fact that the subsistence of the workers depends on the continuity of the
sale of their labour-power. In this sense, social reproduction (ultimately, human life) primarily occurs subsumed under the limitless repetition of the circuit of capital, underpinned by the circulation of commodity and money as the predominant mediators of sociability. The investigation of the production of surplus-value through the consumption of labour power, in turn, makes itself necessary to grasp capital reproduction, and, therefore, capitalist social relations.

3. Money as capital

Marx dissects the underpinning categories of capital valorisation within the production process throughout Parts 3 to 7 of CI. For our purposes, it can be very briefly summarised as follows: capitalists throw money into circulation as capital when buying means of production and labour-power; the living labour performed by workers preserve the advanced value of constant capital, \( c \) (objects and means of labour, expressed in their prices), reproduce the value of variable capital, \( v \) (workers’ means of subsistence, expressed in their wages), and, moreover, produce surplus-value, \( s \), that constitutes the basis for accumulation, considering the realisation of the produced commodities’ value.

Surplus-labour – that in the capitalist mode of production takes the form of surplus-value – grounds valorisation: the portion of value collectively created by workers that is not appropriated by them in the monetary form of wages. In other words, the working class does not receive an income that corresponds to the new value it creates, but to the equivalent of the market price of labour-power, established at any given time and place. Marx goes further to claim that capitalists, in fact, don’t pay the workers at all because it is actually the workers’ own living labour that generates afresh the portion of value that ‘pays’ for their own wages (CI:728-9; see also: 757). However, workers’ monetary revenue in the wage form “extinguishes every trace of the division of the working day into necessary labour and surplus labour, into paid labour and unpaid labour. All labour appears as paid labour” (CI:680). This mystification is at the core of capitalist social relations (CI:679).

The renewal of the process, in turn, encompasses the privately appropriated surplus-value to be permanently thrown into circulation as a new capital circuit afresh, through the repeatedly acquisition of particular commodities: labour-power and means of production, the variable and constant components of capital, respectively. Crucially, “[t]he employment of surplus-value as capital, or its reconversion into

---

3 The interpretation that simple circulation, as exposed in Part 1 of CI, constitutes the form of appearance of exchange relations of the capitalist mode of production and appropriation is certainly not new (Backhaus, 1980; Reichelt, 1982; Fausto, 1983:178ff) and has gotten broader acceptance in the contemporary Marxist literature, albeit grounded in slightly different theoretical reasonings (Heinrich, 2012; Campbell, 2013; Mau, 2018; Lange, 2021). Some arguments developed here may indeed reinforce the referred interpretation, but a qualified and nuanced position in this discussion requires elaborations beyond the scope of this paper.
capital, is called accumulation of capital” (C1:725); otherwise, “[t]he exclusion of money from circulation would constitute precisely the opposite of its valorisation as capital” (C1:735). This resonates the argument drawn in the previous section, but whereas in C1 Marx investigates the sphere of production as the permanent reproduction process of the antagonist class relations between capitalists and workers, mediated by the private ownership of the means of production, in C2 he reveals that commodity production [...P...] is in fact a necessary moment of interruption of the circulation of money as capital [M-C...P...C'-M']. Yet, the various single circuits of initial capital advances by an individual capitalist interlock with each other, releasing and absorbing money capital so that production and circulation are performed continuously:

Capital, as self-valorising value, does not just comprise class relations, a definite social character that depends on the existence of labour as wage-labour. It is a movement, a circulatory process through different stages, which itself in turn includes three different forms of the circulatory process. Hence, it can only be grasped as a movement, and not as a static thing. (C2:185)

In Part 1 of C2, Marx proceeds to dissect every single transaction of the circuits of money capital [M...M’] and commodity capital [C...C] insofar as they are integrated to the circuit of productive capital [P...P]. As Hilferding (2006 [1910]:29) precisely clarifies: “Money capital, commodity capital, and productive capital are not distinct types of capital, but merely particular functional forms of industrial capital”. Crucially, Marx is emphatic in his analysis in C2 that, in circulation, capital metamorphoses itself from commodity and money forms and vice-versa and, in this sense, the individual transactions in circulation “are processes of simple commodity metamorphosis”:

Within the circulation sphere, capital exists as commodity capital and money capital. Its two circulation processes consist in transforming itself from the money form into the commodity form. The circumstance that the transformation of the commodity into money is here at the same time the realization of the surplus value embodied in the commodity, and that the transformation of money into commodity is at the same time the transformation of capital value into, or back into, the form of its elements of production, in no way changes the fact that these processes, as processes of circulation, are processes of simple commodity metamorphosis. (C2:203, emphasis added)

Take the circuit of money capital [M-C...P...C'-M'], which is constituted of the following transactions in circulation: firstly [M-C] and secondly [C'-M']. If looked in isolation, disconnected to the production of value [...P...], [C'-M'] is just [C-M] in greater value magnitude, but does not confront [M-C] from which it arose as capital valorisation. For instance, the realisation of the transactions [$100 - x$ wood and [y tables - $500] on the market are two separated sales in which money functions as means of circulation, even though these separated transactions might be integrated into the same circuit in which money circulates as capital [M-C...P...C'-M'], that is [(+$100+$100+$150)-(x wood + w labour power
When separated off from the circuit, the exchange transactions mediated by money conceals therefore the circulation of money as capital, i.e. the confrontation between the starting and end points of the accumulation circuit expressed in the homogenous form of value, money [M...M']. Henceforth, “within the circuit of industrial capital, money capital performs no other functions than those of money, and these money functions have the significance of capital functions only through their connection with the other stages of the circuit” (C2:157). In Hilferding’s words: “Money does not bear a label announcing it is capital. What makes it capital is the fact that it is intended for conversion into the elements of productive capital” (2006 [1910]:69).

In the circuit of money capital, the first transmutation of value from money into commodity [M-C] is twofold, since [C] is constituted of labour-power (L) and means of production (mp). However, [C] does not function as articles for sales (commodity capital), but the advanced value of productive capital. Marx argues that money only acts as money capital, nonetheless, once new value is created outside circulation within the production process [...]P...]. At this point of the argument, Marx highlights that the functions of money – such as means of purchase, hoards and means of payment – become subsumed under the function of money as capital so the flow of the individual circuit [M-C...P...C’-M’] is maintained:

In order to fulfil its function as money capital, as a capital value destined to be transformed back into productive capital, M is converted into the commodities mp and L. If these commodities are to be purchased or paid for at different dates, M-C then takes the form of a series of successive purchases and payments so that a part of M performs the act of M-C, while another part persists in the money state, and only serves for simultaneous or successive acts M-C at a time determined by the conditions of the process itself. It is withdrawn from circulation only temporarily, to step into action and fulfil its function at a definite point in time. This storing of money is then itself a function determined by its circulation and for circulation. Its existence as a fund for purchase and payment, the suspension of its movement, its state of interrupted circulation, is then a situation in which the money fulfils one of its functions as money capital. For, in this case, the money that is temporarily dormant is itself a part of the money capital M (of M’ minus m = M), of the value portion of the commodity capital equal to P, the value of the productive capital, from which the money that is withdrawn originates. Furthermore, all the money that is withdrawn from circulation exists in the form of a hoard. The hoard form thus becomes here a function of the money capital, just as in M-C the function of means of purchase or payment becomes a function of money capital, and indeed, precisely because the capital value exists here in the form of money, the money state is here a state of industrial capital in one of its stages, prescribed by the circuit as a whole. (C2:157)

The specific function of hoard Marx mentions in the above quote refers to the necessary amount of capital that capitalists must hold in the monetary form so that it can only gradually metamorphose itself into the elements of the circulating capital (labour power and objects of labour) and/or fixed capital
(means of labour). This requirement generally stems from the technical specificities of each branch or unit of production; it’s pointless, for instance, to hire workers to harvest crops before the crops are ready to be harvested. The lack of funds for this purpose may lead to ‘incomplete’ investments, such as the unfinished construction of buildings (although this is not always necessarily the result of the lack of funds for the completion of the investment).

The second transmutation of value \([C' \rightarrow M']\) is in turn a function of the commodity capital, given that \([M']\) constitutes the realized monetary expression of the value and surplus-value already contained in \([C']\). This is considered at once as the most difficult and important part of the process (C2:204-5), since it depends on the way the individual circuit is integrated into and subordinated to the dynamics of the economy as a whole. Assuming, however, the successful realisation of the commodity capital \([C' \rightarrow M']\), it allows the capitalist to consume ‘means of enjoyment’, to reinvest in production or to pile up value in its independent form either for later consumption or investment. The hoard intended for later advance of money as capital, i.e. the postponement of the renewal of the circuit for whatever reason, is \textit{functionally} different, however, from the hoard as a “component part of the functioning capital” (C2:165), necessary to keep the circuit of valorisation uninterrupted. The “hoarded state of the surplus-value present in money form” temporarily accompanies the process of accumulation and “paves the way to for the transformation of surplus-value into really functioning capital” (C2:164). The reasons for keeping ‘latent money capital’ in coffers are manifold, such as the greater scale required for new investments (intensive or extensive expansion of accumulation), the low level of profitability of the economy at the given moment or the formation of reserves due to potential risk of disturbances in the flow of the circuit. This form of hoards tends to grow hand in hand with the scale of capital investments and reproduction.

It must be noted, however, that the first \([C \rightarrow M]\) and second \([C' \rightarrow M']\) value-form transmutations discussed in the above paragraphs refer to a \textit{single} circuit of money capital \([M \rightarrow C \cdots P \cdots C' \rightarrow M']\), as if the capitalist waited for the closure of the circuit in order to reinitiate the same circuit afresh, which is only partially true. Evidently, the purpose of capitalists is to valorise their capital, and if realisation of produced values does not run smoothly, they may decide not to reinvest. Nevertheless, each industrial capitalist does not apply all the capital in only one circuit; if they did so, production would have to completely stop during the circulation time required both for buying labour-power and means of production in the first transmutation \([M \rightarrow C]\), and for selling the produced commodities \([C' \rightarrow M']\) in the second transmutation. This is non-sense from the perspective of the capital valorisation \textit{rationale}. In Part 2 of C2 Marx looks into this by carefully exploring the crucial concept of \textit{capital turnover time}: the sum of the mutually exclusive production and circulation times, which vary substantially within and between
branches of production (C2:235, 309). His investigation particularly takes into account that individual capitalists set in motion one circuit of capital successively after another so that at any given moment there are multiple circuits of capital at different stages of the valorisation processes in each private industrial unit. Thus, there is always a periodic release and idleness of money capital, so the circuits feed one another in a way that production and circulation never cease. When valorisation is considered as a periodic flux of interlocking circuits, the turnover time is key for the determination of the amount of capital that must be held in the money form to “keep a productive capital of a given size in constant functioning” (C2:429). Hilferding well summarises it: “Thus, there arises from the very mechanism of capital circulation the necessity for a larger or smaller amount of money capital to remain idle for longer or shorter periods” (2006 [1910]:74).

In this sense, the inventories kept by the capitalists record the stocks and flows in commodity capital and money capital and, if a delay in the metamorphosis of any stage of the circuits occurs, capital values stagnate in different forms: hoard in the [M-C] phase; idle means of production and unoccupied labour power in the […P…] stage; and unsaleable commodity stocks in the [C’-M’] phase (C2:133). Nevertheless, despite the conceptual distinctions between the roles played by dormant hoards, the withdrawn of money capital from circulation is apparently undifferentiated and “when the capitalist is in need, he in no way ponders over the specific functions of the money he has in his hands, but uses whatever he has in order to get the circulation process of his capital moving again” (C2:165). Marx argues that “the persistence of money capital in its money state appears as the result of interrupted movement, whether this is expedient or inexpedient, voluntary or involuntary, functional or dysfunctional” (C2:158).

One particularly important feature of Marx’s approach in C2 is that both fiat money and the credit system are not introduced into the picture, so the “latent money capital” set aside from circulation takes the form of “real money” and does not function as capital as long as it is dormant outside circulation:

Here we take the accumulation of money in its original real form, as a real hoard of money. It can also exist merely in the form of favourable balances, of sums owed to the capitalist who has C’. As far as concerns other forms, in which this latent money capital may in the interval exist in the actual shape of money which breeds more money, e.g. as interest bearing deposits in a bank, bills of exchange or securities of one kind or other, these do not belong here. In that case, the surplus-value realized in money performs particular capital functions outside the circuit of industrial capital from which it arose; functions which have nothing to do with that circuit as such, and assume the existence of functions of capital distinct from the functions of industrial capital, which have not yet been developed here (C2:164, emphasis added; see also 396)

Throughout the entire C2 Marx emphasises that with the development of the credit system, the necessity of hoarding both as ‘circulating money capital’ and as ‘latent money capital’ would assume
new features, but he always sets this path of the argument aside. This does not whatsoever mean that Marx dissociated the existence of capital from credit: “in real life”, he claims, “there is no storage of money” – latent money capital exists in the form of bank deposits, government papers and shares (C2:423). The assumption that precious metal is the actual form of money, albeit unrealistic, unfolds that the functions money plays necessarily spring from the fluxes and refluxes of the capitalist production and circulation process itself and does not depend on the seemingly intentional creation of credit by the state and banks. It is therefore a methodological approach that captures the dynamic of capital production and circulation (capital reproduction⁴) before grasping the credit system from which it stems (Cf. Harvey, 2013).

As Campbell (1998:130) precisely notes, “[b]y showing, in Volume Two, 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”. The limitations posed by the stock of gold in a country at a given moment may indeed be insufficient in relation to the growing scale of production, but this is not what drives the development of the credit system, since the effectiveness of the money stock can be generally very elastic (Ibid.:145). The issue at stake is that capitalists’ individual hoards, “which they must amass anyway for the circulation of capital” (Ibid.:147), can be transformed from “money capital lying fallow” (C2:164) into claims over a share of surplus-value in the form of interest. Indeed, “[d]uring these periods of inactivity, of course, it [money capital] can earn no profit – a mortal sin from the standpoint of capitalists” (Hilferding, 2006 [1910]:74).

4. Capital as capital

In simple circulation, the elements in constant metamorphoses are always commodity and money. When Marx transitions to the general formula of capital, he shows that behind the isolated acts of circulation [C-M] and [M-C] lies a production process from which surplus-value is extracted through the exploitation of the working class, but exploitation itself is concealed under the free exchange of a peculiar commodity – labour-power – for its equivalent, expressed monetarily in the wage form. Its circuit appears as simple circulation, whose renewal is grounded on the imperative for workers to sell the only commodity they own to constantly meet their subsistence needs. However, for Marx, mystification is not limited to the inter-class relation between capitalists and workers, but also comprises intra-capitalist class relations; profit and ground rent are also income forms that appear to be determined by factors completely

⁴ A discussion on the role of hoards in simple and extended reproduction in C2 lies outside the scope of this paper; see de Brunhoff (1976:51-72), Campbell (1998) and Harvey (2013:chapters 10-12).
alien to exploitation, the ultimate foundation of the capitalist mode of production. In this section, I argue that the introduction of the concept of interest-bearing capital in Chapter 5 the *Manuscripts of 1864-5/Part 5 of C3* is crucial to capture the inversion in circulation that underpins the mystified representation of “the capital relation in general” (*M3*:492).

Assuming a pool of surplus-value has already been pumped out from the working class (Moseley, 2016), Marx dissects capital’s inner laws of distribution throughout *M3*. In Chapters 1 and 2 (Parts 1 and 2 of *C3*), he shows that industrial capitalists face valorisation not as a direct relation to the relative amount of unpaid living labour objectified in the production process (rate of surplus value, \(s/v\)) but as a rate to the total money capital invested (rate of profit, \(s/(c+v)\)). Given the rate of surplus-value, he argues that competition intra and inter branches of production drives an incessant flow of capital investments in and between sectors in permanent search for greater profitability. This culminates in the formation of a *general rate of profit*, that is, a tendency to equalise the rate of profit for all functioning capitals in the economy. Hence, regardless the relative amount of surplus-value that is extracted by different capitals, capitals of the same size \([c+v]\) tend to yield the same magnitude of profit \([p]\). In this sense, surplus-value appropriation is regulated by the *private property* of the total value individually thrown into circulation as capital, and not by the magnitude of surplus-value the individual capital extracted. This distributional principle based on capital ownership is reasserted by the fact that the tendency towards equalisation of the profit rate also applies to capitals functioning in the commercial sphere, which do not whatsoever directly extract surplus-value from workers and do not inject surplus-value into the “pool” from which it appropriates profits (Grespan, 2011).

Dictated by equalisation mechanisms of competition, surplus-value appropriation is equally regulated by the amount of capital values \([v]\) inasmuch as \([c]\). In fact, before throwing their money in circulation *as capital*, individual capitalists consider the general rate of profit as the economy’s reference for valorisation, more or less guessed *ex-ante*, in order to make decisions about investments in production or trade, even though the realisation of individual profit rates can only occur as an *ex-post* figure, conditioned by the particularities of the competitive market into which money functions as capital (*M3*:470). It is evident that, in this way, it is not the social substance of value that appears as the “fertile element” of capital valorisation, be it in productive or commercial enterprises.

The matter becomes even more complex when interest, the most finished and fetishist form of revenue, is introduced into the analysis of the capitalist laws of surplus-value distribution. In Chapter 5 of *M3*, Marx once more reinforces that, in the isolated acts of circulation \([M-C]\) and \([C’-M’]\), money capital \([M]\) functions just *as money* and commodity capital \([C’]\) functions just *as commodity*:
In no individual moment of the metamorphosis, taken by itself, does the capitalist sell the commodity to the buyer as capital, even though it represents capital for him; nor does the buyer dispose of his money as capital to the seller. In both cases, the commodity is simply sold as a commodity, and money simply as money, it is given out as a means of purchase, i.e., the commodity is purchased with it. (M3:448)

However, this is not the case with the circulation of capital as capital:

It is not in the process of circulation that capital exists as capital but only in the production process. With interest-bearing capital the situation is different, and this is precisely what constitutes its specific character. (M3:449)

Interest-bearing capital is the form capital itself assumes in circulation as a commodity, a form that arises from its potential to valorise itself: “The use-value of the money lent out is the ability to function as capital and, as such, to produce average profit under average circumstances” (M3:457). The movement can be represented as [M-M-C-M’-M’], in which the capitalist lends the initial [M] to the borrower, and in return the lender expects a portion of the profit accrued in the valorisation process, according to the interest rate [M-M’]. Mediated by legal contracts, the relation does not comprise an exchange of equivalents – capital constitutes a sui generis commodity and its circulation assumes specific dynamics in circulation: “We have already seen that capital functions in the circulation process as commodity capital and money capital. In neither of these forms, however, does capital as capital become a commodity” (M3:447). In contrast to the exchange of equal values expressed in the transactions [M-C] or [C’-M’], in the commodity form, capital as capital does not directly involve simple relationships of buying and selling for which the concept of price applies (and its complex formation involving competition in production and circulation): “All relationships that appear here, therefore, would be irrational, from the standpoint of the simple commodity […]. Capital manifests itself as capital by its valorisation” (M3:458-9).

The profound systemic implications of the circulation of capital as a commodity, however, is often overlooked in the Marxist literature: interest-bearing capital is not merely a portion of the total social capital that circulate in lending and borrowing relations between, on the one hand, ‘moneyed capitalists’, and, on the other, industrialists and merchants. Despite the undisputable fragmented state of Chapter 5 of M3, which comprises pages of “disordered jumble of notes, comments and extract

---

5 It is true, nevertheless, that the general category of interest-bearing capital can be expressed in many forms, but even when interest-bearing capital takes forms other than money, it is its monetary ‘representation’ as capital that is the crucial parameter for ‘bearing’ interest: “Instead of money, means of production can of course be loaned in kind, in the shape of machines, business premises, etc. But in this case these represent a certain sum of money, and if, apart from the interest, a portion is paid for wear and tear, this arises from the use-value, the specific natural form, of these elements of capital”. (M3:710-1)
materials”, as characterised by Engels, it contains, as Engels also precisely identified, “the most important subject of the entire book” (Preface to C3:95-6). In my view, what we find in the aforementioned chapter is a further categorical transition from the circulation of money as capital to the circulation of capital as capital, which brings about a deep qualitative change into the analysis, an aspect that is best synthetised by the title of its section 4: “The Externalisation of Surplus-Value and the Capital Relation in General in the Form of Interest-Bearing Capital6”.

For Marx, capital as capital appears to “bear” interest, money capital ownership appears to “breed” more money. He claims that what industrial and merchant capitalists accrue is not the economy’s average rate of profit, but the latter deducted from the rate of interest. ‘Functioning capitals’ always accrue therefore the “profit of enterprise” (= profit – interest) and, in case industrial or commercial capitalists invest their own individually accumulated capital, this does not change the matter: “It would make no difference to this real movement if the capital belonged to the productive capitalist, and therefore returned to him alone as his property” (M3:453). More precisely:

Even if he operates with his own capital, therefore, he necessarily considers part of his average profit which is equal to the average interest as the offspring of his capital as such, leaving aside the production process; and in contrast to this part that is given a separate existence as interest, he considers the excess of the gross profit over and above this as simply profit of enterprise. (M3:480)

From the point of view of the capitalists, the self-valorisation of capital in the form of interest [M-M’] is a “fact of life” (Ibid.) that arises from the ownership of money capital itself so interest is considered as its given natural offspring regardless its investment in production or commerce. Despite the ultimate dependence of the rate of interest on the rate of profit, the relationship appears on the surface to be a mere result of a legally established revenue division that springs from the differentiation between capital as function and capital as property, no matter whose property it is: “Interest, then, is the net profit yielded by property in capital as such” (M3:481). It appears as if profit of enterprise emerged out of the functioning capital (production or trade), and interest out of money capital ownership in general, as its “innate quality, as a pure automaton” (M3:500). Elsewhere:

It becomes a general property of any sum of £100 that it will yield 2, 3, or 5 percent. The average profit does not appear as a directly given fact, but rather as the average result of an equalization of the oscillations between contradictory tendencies. With the interest rate it is different. It is in its universality a fact which is fixed every day, a fact which even serves industrial

---

6 Engels modified this title in Chapter 24 of C3 to ‘Externalisation of the Capital Relation in the Form of Interest-Bearing Capital’ (C3:515, translation altered). Engels’ modification of Marx’s original title has been translated by David Fernbach in the Penguin’s edition of C3 as ‘Interest-Bearing Capital as the Superficial Form of the Capital relation’. I thank Alex Callinicos for suggesting the retranslation of Engels’ title as well as of an important sentence of M3:493 quoted below.
and mercantile capital as a presupposition and an item in their operating calculations. (M3:471)

Whereas money constitutes the independent and universal form of value, interest becomes the independent and universal form of capital valorisation. Capital thus presents itself as inherently bearing a general capacity to yield interest. This is the *qualitative* distinction that emerges from the *quantitative* division between gross profit and interest:

Thus it becomes as completely the property of money to create value, to yield interest, as it is the property of pear trees to produce pears. And it is as this interest-bearing thing that the money-lender sells his money. Nor is that all. The actually functioning capital, as we have seen, presents itself in such a way that it yields *interest* not as functioning capital, but rather as *capital in itself*, as moneyed capital. (M3:493)

Conceiving interest as a godsend *presupposition* of capital values privately owned implies that it is assumed to, by itself, generate more money [M – M’]. Even though interest can only be paid off *post-festum* from profits – that is, after the extraction of surplus-value from productive workers and its realisation in circulation through the complex equalisation processes briefly summarised above – it is taken *ex-ante* as the automatic fruit of money capital ownership *per se*. Profit of enterprise appears then as ‘an accessory’ over and above interest, ‘added in the production and circulation process’. In this sense, *the rate of profit of enterprise is expressed as a residue after the rate of interest has been discounted*, and not the other way around; profit seems to be thus a mere supplement to interest, despite the fact that the latter is a transfiguration of the former. The significance of interest-bearing money capital as a fetishist reference of the entire system of value production and circulation is concisely elaborated in the passage below:

There is yet a further distortion. Whereas interest was simply a *part of the profit*, i.e., the surplus-value, extorted from the worker by the functioning capitalist, it now appears as if *interest* is, on the contrary, the specific fruit of capital, the original thing, while profit, now transformed into the form of *profit of enterprise*, appears as a mere accessory, a trimming, added in the production and circulation process. The *fetish character of capital* and the *representation of this capital fetish* is now complete. In M–M’ we have the conceptless [*begrifflose*] form of capital, the reversal and objectification [*Verkehrung und Versachlichung*] of the relations of production, at its highest power: the interest-bearing form, the simple form of capital, in which it is presupposed to its own reproduction process; the *ability of money or a commodity* to valorise its own value – the capital mystification in its most glaring form. (M3:493, translation altered)

In C2, we read: “we have ignored credit here, and it pertains to credit if the capitalist deposits the money that he accumulates in a bank, for example, on current account bearing interest” (C2:199). Marx’s line of argument is that, on the one hand, hoarding is a necessity for social capital reproduction (the self-renewal principle) and, on the other, it undermines or ultimately impedes capital reproduction itself
because money outside circulation does not function as capital. Quite the opposite, money privately hoarded, in its metallic shape, poses high costs to the machinery of capital circulation and reproduction. The concentration of all hoards of the society in “financial institutions” provided, however, the necessary conditions for the formation of the rate of interest and therefore the consolidation and generalization of capital’s ultimate fetish – capitalists’ “inactive” petrified hoardings become interest-bearing assets:

With the development of the credit system, which runs parallel with the development of large-scale industry and capitalist production, this money no longer functions as a hoard but as capital, though not in the hands of its proprietor, but rather of other capitalists at whose disposal it is put. \( (C2:261, \textit{emphasis added}) \)

The development of large-scale industry and commerce ran simultaneously with the development of financial institutions such as clearing houses, discount houses and banks, which carried out money-dealing and loan operations primarily to capitalists. Strictly from the standpoint of intermediation, banks are able to pay interest on the monetary reserves deposited with them because these reserves provide the money capital that is lent by the banks to other capitalists in demand for credit (Rubin, 2017 [1926-8]:715-6), including for those purposes analysed by Marx in \( C2 \). In this way, the credit system breaks the constraints of the individual capitalists’ dormant hoardings, which are thrown into the market as a social mass of loanable money capital: “The result is that, as far as the form of demand goes, capital for loan is faced with the entire weight of a class, while, as far as supply goes, it itself appears \textit{en masse} as loan capital” \( (M3:471/ C3:528) \). Although the maximum limit of the rate of interest is given by the rate of profit – and therefore the conditions of the movement of functioning capitals – the former is \textit{independently} (in relative terms) determined from the latter in the markets where the loanable capital of the society is gathered. However, the most striking feature of the credit system is not, whatsoever, bank intermediation, inasmuch as: the phenomenon of credit money creation \textit{ex-nihilo} through the banking system predominates when banks grant loans \( (M3:561-2; \text{McLeay, Radia \& Thomas, 2014}) \); private companies may raise funds through the stock markets; and states through the issuance of public debt titles. This brings us to fictitious capital, a further category that stems from interest-bearing capital.

Although the sketchy nature of \( M3 \) may present difficulties, the core theoretical content of fictitious capital can still be grasped by the careful reader and remains, in my view, one of the most innovative and powerful category up until today to unveil the significant and peculiar role of the financial sphere in the capitalist mode of production. It basically reflects the inversion that arises from the general “innate quality” of capital to yield interest as if it were a “fact of life”: if money capital ownership \([M]\) socially implies the right to a potential future inflow of more money after a certain period \([M-M']\),
potential future income flows may also correspond to present capital values. The passages below indicate the inversion that springs from interest-bearing capital and that underpins fictitious capital:

(With interest-bearing capital, any sum of value appears as capital as soon as it is not spent as revenue; namely as the main amount, the principal, in contrast to the actual or possible interest it can bear.) […]

The formation of fictitious capital is known as capitalisation. Any regular, periodic income can be capitalised by reckoning it up, on the basis of the average rate of interest, as the amount that a capital lent out at this interest rate would yield. […]

The independent movement of the values of these ownership titles, whether those of government bonds or those of shares, strengthens the illusion [Schein] that they constitute real capital besides the capital or claim to which they may give title. […] Its value is always the equal to the capitalised yield, i.e., the yield as reckoned on an illusory capital at the existing rate of interest. (M3:557-9/ C3:595)

Fictitious capital represents thus illusory present capital values formed in relation to expected valorisation on the basis of ongoing or future income streams. In this sense, fictitious capital’s ‘value’ does not consist of previously created and realised surplus-value accumulated by the capitalist class in the monetary form that, through some sort of loan intermediation, is channelled to industrial or commercial investment. It constitutes a multiplication of capital value (which evidently does not exist in double or triple and indeed may not exist at all, such as titles to public debt), whose valorisation depends on the revenues ultimately generated by the possible realisation of future surplus-value. In this sense, capital takes the form of property titles pure and simple that grants their owners to the right to appropriate portions of the mass of surplus-value.

As Grespan (2011:22) stresses, interest is accrued by the principle of private property, which detaches itself from the very concept of capital. It is a differentiation within the juridical form – private property of capitals embedded in means of production and circulation and private property of capital in its mystical form as money. The detachment may generate intra-class conflicts over the appropriation of profits, i.e. over its division between interest and profit of enterprise (a residue). As a matter of fact, “[i]n adverse phases of the industrial cycle, for instance, the rate of interest may rise so high that it swallows up the whole of the profit for a certain length of time” (M3:596). Indeed, “due to this inversion, it is possible for capital property pure and simple to subordinate the entire equalisation process, that is, the distribution of capital itself and, through it, labour distribution among the various sectors of the society” (Grespan, 2011:25). It may be further argued that the structural importance of interest to the entire capitalist system is also expressed in the establishment of prices of land. As landownership becomes subsumed under the law of value, it assumes the form of an asset, an investment, a title to a future
Analogously to stocks, the price of land represents capitalised ground rent, taking into consideration the average interest rate as a presupposition (M3:826).

5. Final Remarks

The categorical transition in C1 from ‘money’ to ‘capital’ is indeed widely discussed in the scholarly literature and, although a position in the debate has been indicated, the main novelty of this paper is the identification of a further transition from money as capital to capital as capital. Whereas Marx is emphatic that money in its subfunction as hoard – that is, money kept outside circulation – cannot operate as capital, throughout C2 he shows how hoarding becomes a necessity for the maintenance of individual circuits uninterrupted as well as for turning capital reproduction an attainable possibility as a whole. I argue that at this stage of the exposition, Marx was theoretically paving the way for the categorical transition to capital as capital; he deliberately warns the reader innumerous times in C2 that many constraints immanent to capital circulation under examination would be overcome with the introduction of the credit system into the analysis, which historically developed hand in hand with capitalist production. In M3, the investigation of interest-bearing capital – the basis of the credit system – unfolds how it is possible for money capital to yield more money “as it is the property of pear trees to produce pears” (M3: 493) through the mechanisms of surplus-value distribution. Marx argues that “[i]n interest-bearing capital, the capital relation reaches its most externalised and fetishised form” (M3:492), but the significance of this to the entire system of value production, circulation and distribution is overlooked or ignored in the literature, especially when compared to the scholarly attention paid to discussions on commodity fetishism based on the first chapter of C1. The notion that interest is taken as a natural fruit of money ownership per se underpins the mystification that profits of enterprise constitute an accessory revenue over and above interest that springs from investments in production and trade, not the other way around. Moreover, interest-bearing capital is the foundation of fictitious capital – the illusory present values calculated in relation to expected income considering the current rate of interest. The far-reaching implication of the rate of interest can also be illustrated by the fact that it influences even the price of land ownership titles. The circulation of capital as capital underpins thus all forms of valorisation, hence its generality for the capitalist mode of production: “In interest-bearing capital, therefore (and all capital is money capital in its value expression, or is now taken as the expression of money capital), the pious wish of the hoarder is realised” (M3:494).

It must be noted that dialectically arriving at more complex categories, such as interest-bearing capital (money capital as a sui generis commodity), does not necessarily invalidate simpler ones, such as commodity and money, but adds new content to it. Simple commodity circulation [C-M-C] is contained
within the circulation of money as capital \([\text{M-C-M'\text{}}]\) inasmuch the latter is contained within the circulation of capital as capital \([\text{M-M'}]\). They all simultaneously exist and can only exist in an integrated way, even though they appear disconnected in the discrete exchange transactions of commodities for their monetary form:

The so-called credit economy is itself only a form of the money economy, in so far as both terms express functions or modes of commerce \([\text{Verkehr}]\) between the producers themselves. In developed capitalist production, the money economy simply appears as the basis of the credit economy. […] they are in no way different independent forms of commerce […]. \((C2:195)\)

The interpretation developed in this paper may also shed light on the role of capitalist private property as indispensable for grasping not only the social relations of production but also the laws of value appropriation. This is already clear in \(C1\) even though its abstract account does not consider the particular forms that surplus value is distributed among different \(\text{stratums}\) of proprietors; it reveals, nonetheless, the determinants of value production and assumes surplus-value is realised, being metamorphosed back into the objective and subjective elements of the production process for the limitless accumulation. Henceforth, private property is taken as the presupposition, but it is shown also to be the result of capitalist social relations: “The capitalist mode of appropriation, which springs from the capitalist mode of production, produces capitalist private property” \((C1:929)\). In turn, appropriation feedbacks on accumulation, since money capital privately owned is permanently thrown back into circulation for its limitless self-valorisation: “The more ownership of past unpaid labour is thenceforth the sole condition for the appropriation of living unpaid labour on a constantly increasing scale. The more the capitalist has accumulated, the more is he able to accumulate” \((C1:729)\). Nevertheless, the investigation of the circulation of capital \(\text{as capital}\) contributes to further capturing the role of ownership titles pure and simple (such as shares, public debt titles, etc.) in the laws of capitalist appropriation, which further obliterates inter and intra-class social relations:

Interest represents mere ownership of capital as means of appropriating the product of other people’s labour. But it represents this character of capital as something that falls to it outside the production process itself and is by no means the result of its specific character. It presents it not in direct antithesis to labour but quite the reverse, with no relationship to labour at all, merely as a relationship between one capitalist and another. Thus as a capacity that is external and indifferent to the actual relationship between capital and labour. \((M3:484)\)

\section*{Bibliography}


