Necessity of Money in an Exchange-Constituted Economy: Smith and Marx

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Abstract

The debate over theories of the nature of money has recently been revisited in this *Journal*. This paper shifts the focus from the stuff that is being positioned as money to the social totality. Credit theorists claim that commodity theories of money imply monetary neutrality and a primacy of real analysis. In contrast, this paper argues based on Marx and Smith that independently of whether money is a commodity or credit the necessity of money depends on the constitution of the economy in terms of the relation between production and circulation. If social production is constituted through the exchange between private specialised producers, money is not neutral but essential. For Smith, real analysis is nevertheless meaningful in that he treats the spheres of exchange and production separately. By contrast, Marx exposes real analysis as commodity fetishism and stresses the mutually constitutive social relations between money, commodity exchange and capitalist production.

Keywords: monetary economy, division of labour, barter exchange, increasing returns to scale, specialisation

JEL classifications: B12, E00, P12

1. Introduction

One of the fundamental questions guiding both Adam Smith and Karl Marx is how social labour becomes proportional to the evolving needs of society, if social production is organised through exchange between interdependent producers. This question addresses two basic conditions of the modern capitalist economy. First, labour is socially divided and producers are specialised. Second, exchange is constitutive of social production.[1] The task of this paper is to show how both Smith and Marx argue that whenever these two conditions prevail, there must be money. In order to present our interpretation of Smith's and Marx's analysis, we would like to examine their distinct answers to the following question: *Can there be an economy in which labour is socially divided and social production is organised by exchange but in which there is no money?*

In this paper, an economy where both conditions hold (i.e. i) social division of labour and ii) exchange is constitutive of social production) is termed an exchange-constituted economy.[1] We make a minimal claim: Money is necessary in an exchange-constituted economy – albeit for critically different reasons and in distinct ways – both in Marx and Smith. The logic is that if this minimal claim can be established money is also necessary in these two theoretical outlooks when capitalism in all its aspects is to be considered. Only considering these two conditions abstracts from other constitutive aspects of capitalism, most notably capital and class relations. These two conditions are characteristic of what Marx calls simple commodity circulation and what Smith describes as a commercial society. We follow Campbell (2017) in her interpretation that simple commodity circulation is "unique to capitalism" even though it is an "abstract aspect" (p. 210). Thus, studying the necessity of money in relation to an exchange-constituted economy is *not* to consider money in general but in relation to capitalist

production (ibid.). The relationship between this minimal claim and a more comprehensive conception of capitalism will be discussed by contrasting Smith's and Marx's analyses. The nearly century-long interval between their times and their different political outlook result in contrasting pictures of capitalism: harmonious evolution and natural progress of wealth for Smith, and historical materialism and a concern with contradictions and social relations for Marx. It is remarkable that Smith and Marx nevertheless agree on the necessity of money despite fundamental differences in the way they conceptualise it.

Whether and in which ways money is necessary is intimately connected with an old debate over the nature of money.[3] The analysis of the necessity of money in an exchange-constituted economy in this paper challenges the treatment of Marx and Smith by credit theorists of money. Let us take Ingham (1996, 2001, 2004, 2012, 2018) in the pages of this journal and elsewhere as an example.[4] Following Schumpeter (1954), Ingham (2018, p. 837) juxtaposes commodity theories with credit theories of money. He praises Keynes and the Post-Keynesians for having a credit theory of money. In contrast, he lumps together a wide-range of other schools of thought as commodity theories of money: This lineage goes back to Aristotle and includes the classical economists, neoclassicals in general and general equilibrium theorists in particular, the Austrians, Marx and Marxist economists alike (Ingham, 2001, 305).[2] Ingham argues that in commodity theories money does not command a significant analytical status and follows Schumpeter in his attribution of *monetary neutrality*: so long as money "functions normally, it does not affect the economic process, which behaves in the same way as it would in a barter economy" (Schumpeter as in Ingham, 1996, p. 511; Ingham, 2002, p. 17). By the same token commodity theorists are seen to pursue *real analysis* which "proceeds from the principle that all essential phenomena of economic life are capable of being described

in terms of goods and services, of decisions about them, and of relations between them" (Schumpeter as in Ingham, 1996, p. 511; Ingham, 2004, p. 17).

In contrast to the credit theorists' stance, this paper shows that both Smith's and Marx's treatment of money in an exchange-constituted economy does not follow the logic of *monetary neutrality* nor that of *real analysis*. Ingham (2001) invokes Keynes as arguing "that there is a qualitative structural difference between barter exchange and market exchange" (p. 309; Keynes, 1930, p. 3). This paper utilises Keynes' insight to show that this structural difference between barter and a monetary economy is pronounced in Smith's and Marx's analyses. In this regard Smith and Marx are fundamentally different from Ricardo and the Ricardian tradition as well as from general equilibrium theory as the most advanced variety of neoclassical economics, which are all amalgamated into one strand of monetary theory in the account of credit theorists.

The critique by credit theorists of Marx's monetary theory has long been challenged on different grounds. Historians of economic thought challenge the lineage of commodity theories based on Marx's assessment of the Bullion and Currency Controversy (Arnon, 1984; De Brunhoff, 1976; Lapavitsas, 1994).[5] Using Marx's framework the claim that credit and commodity theories are mutually incompatible is deconstructed. For example, Lapavitsas (2005) critiques Ingham in the Zelitzer-Fine-Lapavitsas-Ingham debate (Fine and Lapavitsas, 2000; Ingham, 2001; Zelitzer, 2000) by arguing that the concepts of commodity and credit money are qualitatively different forms of Marx's universal equivalent.[6] Another long-standing line of defence is to show that Marx's monetary theory does not depend on money being a commodity at all (e.g. Arthur, 2004; Campbell, 2002, 2017; Foley 1982, 1983; Ganssmann, 2012; Moseley, 2011; Reuten, 2005; Wolfson, 1988). More recently, based on the theory of social positioning, Lawson (2016, 2018), too, overturns the general notion of two incompatible

theories of money as proposed by credit theorists in his exploration of the constitution and nature of money.[7]

The present paper shifts the focus from the nature of the stuff which is positioned as money within a community towards the social system, which requires for some stuff to be positioned as money – to use Lawson's terminology. We delineate the qualitative structural difference between a monetary and a non-monetary economy in Smith and Marx, contrast this with Ricardian and general equilibrium theory and draw implications for the (im-)possibility of real analysis in these theoretical perspectives. The paper thereby suggests a novel approach towards reconsidering the two strands in monetary theory. It argues that while the credit theorists are right in their critique of neoclassical and Ricardian theories of money, Smith and Marx do not fit with the credit theorists' characterisation of commodity theories.

To answer our guiding question whether from Smith's or Marx's perspective there can be an exchange-constituted economy without money, we first turn to Smith. We analyse what qualitatively different structural states of the economy can be logically derived from Smith's thought experiment (Gedankenexperiment) of an "early and rude state of society" and show that the rise of the social division of labour is conditioned on the emergence of money. In contrast, diversified production does not require exchange or money. This later state of diversification is shown to coincide with the barter world of general equilibrium.

The second part examines how Marx departs from Smith's analysis by reinterpreting the labour theory of value as a theory of the social regulation of production through exchange. The analysis of Marx will be focused on the Chapter on Money in the *Grundrisse* (Marx, 1993 [1939]). In the *Grundrisse*, Marx develops his theory of money in critical opposition to the proposal of a form of money that is denominated in labour-time as it was put forward by the Ricardian Socialists Gray, Bray and Proudhon (Foley, 2003, p. 2; Elson, 2015, p. 135). This

lens enables us to work out the difference between the Ricardian and Marx's conception of money.

The last section contrasts Smith's and Marx's arguments on the necessity of money in an economy of specialised producers where exchange is constitutive of social production and discusses important implications. The analysis in this paper shows that both Smith and Marx share our minimal claim on the necessity of money. At the same time, bringing in the broader tapestry of their theoretical frameworks reveals important discrepancies. In particular, how Smith's and Marx's different conceptions of the inseparability of production and exchange and the essential role of money result in distinct notions of monetary non-neutrality and the possibility of real analysis.

2. Smith: Why do we need money for exchange in a commercial society?

The social division of labour plays a central role in Smith's (1999 [1776]) "The Wealth of Nations". He attributes to it the "greatest improvement in the productive powers of labour" (1999, p. 109). In this paper we ask whether an exchange-constituted economy which is characterized critically by the social division of labour can emerge without money in Smith's view. Smith explains the social division of labour as a result not of history but of human nature as such: It "is the *necessary*, though very slow and gradual consequence of a certain propensity in human nature (…) the propensity to truck, barter, and exchange one thing for another" (1999, p. 117). As individuals follow their natural propensity to exchange, Smith argues, they realise that they will gain from specialisation thanks to what economists later came to call increasing returns to scale. In this paper we analyse whether this necessary though very slow

and gradual process of specialisation that comes along with an increasing social division of labour necessitates the emergence of money.

2.1. Specialisation driven by increasing returns to scale

Smith (1999) refers to an "early and rude state of society" (p. 150) as a thought experiment (Gedankenexperiment) to show that specialisation is driven by what we now call increasing returns to scale. He imagines a tribe in which each member is an isolated, independent producer who faces the decision to either produce all her needs herself, i.e. to diversify her production, or to specialise in the production of one good and acquire all other goods through exchange (1999, p. 119). Even though a tribe of isolated, independent individuals is an oxymoron, let us interpret this reference to a tribal setting to mean that all members have equal access to land and natural resources, hence these are not privately owned. Further, it is supposed that everything, including the means of production, is produced by the producer's own labour.

The independent producer realises they will receive greater enjoyments if they specialise and exchanges their product with others, since their individual production efficiency will increase. This is due to the factors that Smith describes to improve productivity when labour is socially divided. These are first, greater dexterity and second, the time saved by continuously conducting the same task (Smith, 1999, p. 112). Specialisation from the perspective of an individual producer means extending the scale of production of one good while decreasing that of others. As their labour productivity grows with specialisation the average costs in terms of labour time fall with the increase in scale, i.e. they face increasing returns to scale.

But once the producer decides to specialise there arises an additional drive towards specialisation. As they specialise they start to invest labour time in the production of specialised

tools, which represent positive fixed costs.[8] If she faces positive fixed costs, average costs will further decrease with an increase in the scale of production. Hence, specialisation is a gradual yet self-enhancing process from the perspective of the cost structure in production. All producers in the tribe face the same decision. Therefore they all tend to specialise. What exact pattern of specialisation among the different producers results is not determined, and may be path-dependent.

2.2. Specialisation without Money?

As we have just shown, specialisation in Smith' framework is driven by increasing returns per unit of labour. But specialisation is also conditioned on the prospect of the individual producers to exchange that part of their product which is beyond their own need. In Smith's words: "[T]he *certainty of being able to exchange* all that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men's labour as he may have occasion for, encourages every man to apply himself to a particular occupation" (1999, pp. 119-20, emphasis added).[9]

The condition of prospects of exchange for specialisation causes a positive feedback effect in addition to the one described from the perspective of costs of production: As more producers specialise, the occasions for exchange multiplies, which encourages others to also specialise and gradually results in an increasing division of labour. Therefore Smith states that the "division of labour is limited by the extent of the market" where he equates the market with "the power of exchanging" (1999, p. 121). The division of labour is conditioned on the degree to which the propensity to exchange can be realised in actual exchange. The certainty of exchange is a necessary condition for advanced stages of specialisation and a social division of labour.

We can now restate our initial question regarding the necessity of money as: Can there be a "certainty of being able to exchange" without money? Which brings us to Smith's analysis of money. Smith starts his argument on the origin of money from a situation where *producers are specialised, labour is socially divided and social production is organised by exchange,* i.e. from an exchange-constituted economy: "When the division of labour has been once thoroughly established (…) [e]very man (…) lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a *commercial society*." (Smith 1999: 126, emphasis added)[10] Following this characterisation of the commercial society, Smith formulates the problem which Menger (2009 [1892]) takes as starting point in his book "On the Origin of Money"[11] and which, following Jevons (1875), is commonly referred to as the problem of the "double coincidence of wants" (Tobin, 2008):

> The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for. *No exchange can, in this case, be made between them*." (1999, p. 126, emphasis added)

Smith's example of failed barter, shows that the absence of money results in a lack of certainty of being able to exchange. Thus we have to answer our question in the negative, there cannot be certainty of being able to exchange without money.

But note that based on our analysis above the problem of the double coincidence of wants as posed in this example would never actually occur in Smith's framework. As shown, Smith argues that advanced stages of specialisation is conditioned by the "certainty of being able to exchange" and producers only become professionally specialised producers, brewers, bakers or butchers, as the result of what Smith describes as a necessary but slow process resulting

from the natural propensity to truck and barter. A barter economy with fully specialised producers would never emerge in Smith's own logic. Smith's example of the failed exchange between the butcher, brewer and baker must therefore be interpreted as a counterfactual case demonstrating the impossibility of specialisation without money due to the lack of the certainty of exchange.

We can identify two feasible alternative paths to the impossible situation of specialisation under pure barter exchange in Smith's argument: First, the gradual emergence of a system of specialised producers exchanging with the help of money. Second, no money emerges and production remains diversified with small-scale exchange facilitated by barter. Note that Smith's envisioning of only two possible paths, i.e. continuing diversified production without money, or the gradual co-evolution of specialised production, money and certainty of exchange, excludes any organisation of social division of labour other than monetary market exchange.[12] This is a result of Smith's analytical starting point in the thought experiment of the "early and rude state" which Marx's (1993) identifies as a Robinsonade of isolated individuals. Due to the isolated individual being his unit of analysis, Smith does not conceive of the possibility that the social division of labour could as a third possibility be sustained in some form of conscious social organisation.[12]

2.3. Rise of money under specialisation

Smith argues concerning the origin of money that "[i]n order to avoid the inconveniency of such situations" (ibid.), i.e. a situation of specialised production without money, "every prudent man in every period of society, after the first establishment of the division of labour, must naturally have endeavoured to manage his affairs in such a manner as to have at all times by him (…) a certain quantity of some one commodity or other, such as he imagined few

people would be likely to refuse in exchange for the produce of their industry." (ibid.) In other words, the double coincidence of wants problem would never actually emerge since as individuals first start to specialise they also begin holding a highly exchangeable product in hope of establishing the required "certainty of being able to exchange". This gradual process of specialisation results in different goods successively being established in Smith's language as "common instrument of commerce" (1999, p. 127). Eventually, according to Smith, a metal arises as money, the "universal instrument of commerce, by the intervention of which goods of all kinds are bought and sold, or exchanged for one another." (1999, p. 131)

The important point here is that money as universal instrument of exchange becomes the embodiment of the certainty of being able to exchange and thus enables the emergence of a commercial society where all live by specialised production and exchange. Since all goods are exchanged against money, the possession of money grants certainty of exchange.[13] The crucial part is *not* that money takes the concrete form of metal. In the logic of Smith's argument any practical form of money other than metal could also be established as "universal instrument of commerce".[14] The physical characteristics and the common acknowledgement of its value might have favoured metal historically. However, there is no reason why in Smith's framework any forms of debt certificates should not arise as "universal instrument of commerce".[15] Hence, in parallel to the argument referred to in the introduction that Marx's theory of money does not logically necessitate for money to be a commodity, the claim that Smith's theory of money is a commodity theory can be challenged.

Thus the following criterion developed by Lawson (2018) is decisive also in Smith's framework: "all that is required is the recognition that for a successful money, the kind of thing positioned as money possess the capacity to induce (…) a trust that others in the community will (…) be ready continually to accept it" (p. 857), i.e. it is generally exchangeable.

Just like for Lawson's account, it can be argued that in Smith the exchangeability would be aided if money had prior value in the form of some physical good, but this is not strictly speaking a requirement. Hence, it is misleading to categorise Smith as a commodity theorist of money.

We can now summarise the relationship between the division of labour, specialisation, certainty of exchange and money in Smith as follows:

Money <= Certainty of Exchange <= Specialisation <= Division of Labour

We have seen that under the conditions of Smith's thought experiment it is impossible for specialisation and social division of labour to emerge from exchange without the co-evolution of money as "common instrument of commerce" of some form. We will now show that conversely, if there is no money there would be no specialisation but individually diversified production.

2.4. No money, no specialisation but diversification

Smith (1999) writes: "When the market is very small, no person can have any encouragement to dedicate himself entirely to one employment, for want of the power to exchange all that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men's labour as he has occasion for." (p. 121) Thus it is clear that if the power of exchange is too limited producers would not specialise but diversify. We have seen that the power of exchange is not only limited by the extent of the market but also depends on the certainty of exchange which is achieved by money.

If the independent producers diversify, they tend to produce with hardly specialised tools. Therefore they have negligible fixed costs in each line of their production and face non-

increasing returns to scale. Non-increasing returns to scale can in turn create additional incentives to diversification. So similarly to specialisation, there is a potential positive feedback effect from the production cost perspective. But there is also a second reinforcing dynamic analogue to that of specialisation. As one producer diversifies the incentive for all others to also diversify increases since the extent of the market decreases.

Diversified producers might still exchange, but only the surplus over and above their own use. Since they have already produced all the goods needed for living, this surplus is different from the surplus of the specialised producer. It is a surplus that they can exchange truly at their free will since they do not depend on exchange for their own reproduction. By the same token, production is not targeted at exchange but at the producer's own necessities. Production is therefore not guided by the prospects of exchange. Exchange only happens by chance. Exchange and production are independent processes.

2.5. Excursus: The Neoclassical Perspective on the Origin of Money and General Equilibrium

It is beyond the scope of this paper to reconsider money in a variety of neoclassical theories in a thorough manner. Nevertheless, three observations resulting from our analysis of Smith emerge that concern monetary neutrality and the status of real analysis in versions of neoclassical theory.

First, let us contrast the necessity of money in Smith with the neoclassical transaction cost theory of money. According to one of the foremost neoclassical theorists of money of the 20th century, John Hicks, "[t]here is the same incentive to find ways of reducing transaction costs as of reducing other costs" (1967, p. 7). Therefore, in the tradition of Menger, Hicks argues that it is transaction costs that give rise to money: "one way of looking at monetary evolution is to regard it as the development of ever more sophisticated ways of reducing transaction costs." (1967, p. 7) From this perspective, the use of money does not alter the role of exchange

in the organization of social production. Production is what it is and exchange is what it is independent of whether there is money. Money is merely something that renders exchange that would have happened without it less costly.

What is considered in this neoclassical perspective on money, is the "working of a market, on which a number of traders meet to exchange a variety of goods: a market which is only to be open on a particular 'day', so that it can be studied (as Walras studies it in his theory of exchange) in complete isolation from what went before and what is to come after" (Hicks 1967, p. 3). It is a "theory of exchange" that considers exchange independently of production or introduces production only in a secondary step into an exchange economy.[16] Consider neoclassical general equilibrium models. Exchangers can decide the ratios of their exchange according to their subjective values, i.e. their utility. Prices are determined by supply and demand since exchange is independent of production. Initial endowments are independent of production. Inactivity of producers is possible, i.e. zero is included in all individual production sets, and exchange can still take place (e.g. Debreu 1959, p. 84). If all producers maximize their profit by inactivity, the "private ownership economy" (Debreu 1959, p. 83) is reduced to a simple exchange economy without production.

By separating the analysis of exchange from the analysis of production, the qualitative shift from diversified to specialized production that emerges in Smith's theory as exchange generalizes and money arises, is not considered. It is this analytical separation of production and exchange rather than the origin of money in a physical good – as the credit theorists suggest – which results in monetary neutrality in the sense that the monetary exchange is considered structurally comparable to a barter economy. By the same token, as exchange is considered in isolation from production it is conceptualized as the exchange between a given set of things and can as such be examined with real analysis in Schumpeter's definition.

Second, the standard neoclassical general equilibrium models not only adhere to monetary neutrality but fail altogether to incorporate money in a meaningful way into their models. One of the pioneers of general equilibrium models, Frank Hahn, notes:

The most serious challenge that the existence of money poses to the theorist is this: the best developed model of the economy cannot find room for it. The best developed model is, of course, the Arrow-Debreu version of a Walrasian general equilibrium. A world in which all conceivable contingent future contracts are possible neither needs nor wants intrinsically worthless money.
(Hahn, 1981, p. 1)

Against the background of our analysis of the relation between the certainty of exchange and money in Smith it is interesting to note that this very uncertainty is assumed away in general equilibrium models. "A world in which all conceivable contingent future contracts are possible" does not know the uncertainty of exchange which in Smith's framework necessitates money. Money thus only enters as a computing device in the form of the numéraire but not as Smith's "universal instrument of commerce" against which goods must actually and necessarily be exchanged. By the same token, all that matters from this perspective is real analysis in its most basic sense, i.e. relative prices.

Third, not only money but also increasing returns to scale cannot be integrated into general equilibrium models. The "basic incompatibility of perfect competition and increasing returns to scale" has long been a great challenge to general equilibrium theorists and standard models continue to assume individual convexity (Vassilakis, 1987, p. 1).[17] Generally assumed strictly convex production possibility sets imply decreasing returns to scale. As such the optimal production choice is to diversify and produce some combination of all goods rather than to specialize in the production of one good only. Thus to the extent that production is considered, it enters the picture in the form of Smith's diversified isolated producer producing for subsistence. The ever-greater specialization and social division of labour, in Smith's analysis

the greatest driver of wealth enhanced by extending the power of exchange, is not captured in general equilibrium models.

If we consider the second and third observation together, it becomes clear that from the perspective of our analysis of Smith, the subject of general equilibrium models is the state of "*no money, no specialisation but diversification"* as discussed under this title in the previous section. This state cannot be considered a market economy with social division of labour in Smith's thought experiment on the "rude and early state". Instead it refers to isolated individuals producing for subsistence. As such, neoclassical general equilibrium models fail to grasp the most elementary characteristics of a commercial society from the viewpoint of Smith's analysis.

2.6. Money, no diversification but specialisation: The collapse of the barter analogy and real analysis

Let us summarise our interpretation of Smith's answer to the initial question: *Can there be an economy in which labour is socially divided and social production is organised by exchange but in which there is no money?* No, says Smith and gives us the example of the trouble of the double coincidence of wants that the brewer, the baker and butcher face to illustrate that they could not live by specialised production and exchange. Hence, a commercial society requires money. This leads us to the conclusion that from the point of view of Smith, the neutrality of money is a fundamental fallacy. Barter cannot be the system of exchange if producers are specialised and can at best facilitate exchange among diversified producers. In Smith's framework, a monetary economy is qualitatively different from a barter economy of diversified, self-sustaining individual producers both in its production structure and in the way the reproduction of individual producers is conditioned on exchange.

Smith's analytical foundation in the thought experiment on the "rude and early state" has implications for the feasibility of real analysis. Money is necessary for the exchange-regulated social division of labour. This money is not simply a numéraire established for computational purposes to determine relative prices. Instead, this money must be actual money, against which all goods are exchangeable in practice, which stores value, has a unit of account and functions as a means of payment. Due to this, Smith's framework in our reading necessitates monetary analysis as opposed to a mere concern with relative prices. Nevertheless, Smith's indifference towards historically determined social relations in his thought experiment results in real analysis in the sense that the subject of study is socially undetermined wealth or things. Furthermore, the mechanical relationship between production decisions and the organisation of exchange in Smith simply juxtaposes the two spheres. In Smith's analysis, the structure of the organisation of production has to be in accordance with the form of exchange. Yet, his framework allows him to analyse production and exchange separately. As such Smith can serve as the point of departure for a primacy of real analysis.

3. Marx: Why do we need money for the social distribution of labour in a commodity producing economy?

> *[I]n the commodity-capitalist economy … the point of departure for research is not value but labour, not the transactions of market exchange as such, but the production structure of the commodity society, the totality of production relations among people.* (Rubin, 2008 [1928], p. 62)

Marx's emphasis on the necessary coevolution of exchange, division and specialisation of labour and money is more explicit and determined than Smith's. Marx's answer to our question

whether there can be an exchange-constituted economy in which there is no money, is clearly no. It is based on his logical analysis of the rise of a commodity economy which necessitates the co-evolution of money:

> *To the degree that production is shaped in such a way that every producer becomes dependent on the exchange value of his commodity, i.e. as the product increasingly becomes an exchange value in reality, and exchange value becomes the immediate object of production – to the same degree must money relations develop, together with the contradictions immanent in the money relation, in the relation of the product to itself as money.* (Marx, 1993, p. 146)

Whereas Smith disregards the question of value in his analysis of the relation between division of labour, exchange and money, the necessary expression of abstract labour as value in money in a commodity economy is at the heart of Marx's theory of money.[18] Note that what is objectified in money is not simply labour in general, but abstract labour as a form characteristic to capitalism.[19] Marx builds on Smith in regarding value as the property of exchangeability (Foley, 1983, p. 5). But Marx at the same time breaks out of Smith's framework when he sees money as a necessary form of value and a constitutive element of the capitalist mode of production. As such, money cannot be removed or introduced in some counterfactual thought experiment be it Smithian or Ricardian Socialist. Instead, money can only be analysed in conjunction with production and exchange relations as mutually constitutive.

According to Marx a situation without money in which social production is organised by exchange and labour is socially divided, can only be forced upon an economy politically. But it can never persist. This situation is precisely what the Ricardian Socialists Gray, Bray and later Proudhon want to establish when they suggest introducing a labour money, i.e. a paper money denominated in labour time. And this is the subject of Marx's criticism in the *Grundrisse*

(1993), the *Contribution to the Critique of Political Economy* (1904) and Part One of *Capital Volume One* (1992).

The goal of this section is to understand why in Marx's theoretical framework specialized production for exchange can only arise together with money. The analysis is structured around three central questions posed by Marx in the *Grundrisse* (Marx, 1993, p. 97):

1. "[W]hy cannot private labour – labour for the account of private individuals – be treated as its opposite, immediate social labour?" (ibid.)
2. "[W]hy does not money directly represent labour-time?" (ibid.)
3. "[W]hy given the production of commodities, must products take the form of commodities?" (ibid.); Or to re-phrase: Why must products take the form of commodities if production is for exchange?

In answering these questions, Marx prefigures the conclusion at which Keynes arrives in his *General Theory* (ibid.). "Abolish money and don't abolish money!" exclaims Marx (1993, p. 127). "We cannot get rid of money even by abolishing gold and silver and legal tender instruments" finds Keynes (1997, p. 294). Marx's subject is "the economic basis for the existence of money" which does not depend on the "'particular kind of money' used" such as metallic money, convertible paper, inconvertible paper, time chits etc. (de Brunhoff, 1973, p. xv). Marx argues that if the relations of production involve specialisation, division of labour and general exchange money must necessarily exist and the abolition of money will only cause the rise of money anew.

3.1. *Why cannot private labour – labour for the account of private individuals – be treated as its opposite, immediate social labour?*

In his discussion of why private labour cannot be treated as immediately social labour, Marx focuses on the contradiction between use value and value. "[T]he labour that produces value is *abstract* rather than concrete, *simple* rather than compound, *social* rather than private and *necessary* rather than wasted." (Foley, 1986, p. 15) Money is the necessary form of appearance of value, and money and value are thus not independent. But labour time exists only in the form of concrete labour. "A particular expenditure of labour time becomes objectified in a definite particular commodity with particular properties and a particular relationship to needs" (Marx, 1993, p. 167), hence as use value. The question why private labour cannot be treated as immediate social labour therefore comes down to the question why use values cannot be immediately treated as value. And this is because the value of concrete commodities has to be realised in exchange. In a commodity producing economy, production is private production for exchange, and only by realising the value of commodities in exchange against money does the concrete labour become social labour. Concrete commodities can only be exchanged if they are of use to someone who is willing to buy them. But money expresses the "general exchangeability" (ibid.) of commodities: "Money is labour time in the form of a general object, or the objectification of general labour time, labour time as a general commodity" (Marx, 1993, p. 168).

Heterogeneous and physically defined concrete, private labour is transformed into homogenous, social, simple, necessary, abstract labour expressed in money through the practice of regular exchange. This is what Marx calls "qualitative transformation" or "metamorphosis" (Backhaus, 1997, p. 350). The money commodity becomes indifferent to its

own concrete use value and can be metamorphosed into the same abstract labour time objectified in another commodity. This is "possible only (…) because the exchange values of commodities become identified with a particular commodity different from all others" (Marx 1993, p. 168). Note that the important point is *not* that the exchange values become identified with *a commodity*, i.e. that money is a commodity, but that the exchange values become identified with money as something distinct from all other commodities. Hence, Marx (1904) remarks that it would be wrong to treat money as a mere commodity (p. 232). The defining aspect of money is its positioning as the identifier of the exchange value of all commodities, not its commodity character.

The following two aspects regarding the role of money in the metamorphosis of commodities underlie persistent misunderstandings: First, according to Marx, "[t]here is no general ex ante method of measuring the abstract, social, necessary labour expended in producing commodities independent from the whole process of exchange of commodities mediated by money" (Foley, 2003, p. 3). The practice of monetary exchange is itself the method of measuring the content of "abstract, social, necessary labour". However, reaching back to Smith, "economists frequently thought the task of economic theory was to find a *standard* of value which would make it *possible in practice* to compare and measure the quantity of various products in the act of market-exchange" (Rubin, 2008, p. 125) and Marx is frequently misunderstood as belonging to this group. For example, Orléan (2014) mistakes Marx as suggesting that "the relevant magnitudes of value for these substances [price determining value substances] can be calculated without reference to actual transactions" (p. 15). But in Marx's view, as Rubin (2008) observes "[i]t is not necessary for us to seek a practical standard of value … . This equalisation takes place *in reality* every day in the process of market

exchange. In this process, spontaneously, a standard of value is worked out, *namely money*, which is indispensable for this equalisation" (p. 125, last emphasis added).

In giving up on a standard of value but instead relocating the measurement of value in the process of realisation itself, Marx radically parts with Ricardo. The search for an invariable standard of value was at the core of Ricardo's theoretical endeavour and his embodied labour theory of value seemed to deliver an approximate solution (Kurz and Salvadori, 1993; Sraffa, 1951). Ricardo measures the relative value of a commodity in terms of the quantity of labour *embodied* in its production. For him expressing these relative values in money terms is merely a formal transformation and as such he considers labour embodied as immediately social and ignores labour's social form. In order for the measurement of labour embodied to be free of any monetary distortions, Ricardo (1951) supposes for the value of money to be "invariable, and therefore all alterations in price to be occasioned by some alteration in the value of the commodity of which I [he] may be speaking" (p. 46). As a result, Ricardo's analysis is in real terms and money is neutralised (Deane, 1978, p. 67). By conceptualising value as something embodied in commodities, Ricardo assumes away the problem of realisation and fails to recognize the specific character of social labour in a commodity producing economy and its difference with private labour. Hence, Campbell finds:

> *From Marx's perspective, Ricardo's theory is fundamentally inconsistent: On the one hand, it claims to explain value (or at least the quantitative determination of value); on the other, it denies the basis for value's existence, namely, the private and independent character of social production (this Ricardo denies implicitly rather than explicitly, for example, by attributing no necessity to exchange or money …).* (Campbell, 1997, p. 73)

Ricardo treats the labour theory of value essentially as a theory of price determination where the value is determined solely in the production process and is seen as the underlying

cause of prices.[20] Ricardo's method conceptualises production and circulation as distinct spheres and overlooks the mutually constitutive relation between them stressed by Marx.

A second aspect often misinterpreted is the relation between money and the commensurability of commodities. Already Aristotle was concerned with the problem of commensurability. He suggested that money, as a common measure of everything, would make things commensurable (Backhaus, 1997, p. 351). This is, however, a fallacy from Marx's viewpoint. Monetary exchange is the method of *measuring value*. Commodities are commensurable in their existence *as value*. As products of private production for exchange, they have a qualitative commonality in that the wage labour exhausted on them was not expanded to create use values for the immediate producers, but to realize their value in exchange such as to extract a profit for the capitalist. In this process, private labour is transformed into abstract social labour. Money is the means to express their quantitative relation regarding this common qualitative dimension (Marx, 1992, p. 97). Backhaus' metaphor is illuminating: "no physicist would ever make the absurd claim that the Parisian *mètre des archives* or any other measure of length has the 'function' to make what is to be measured commensurable. The dimension of size is a priori common to heterogeneous things. The dimension of size is the precondition, not the result of measuring."[21] (ibid.)

Having clarified these two common misconceptions let us return to the question whether concrete labour can be immediately social labour. It is important to recognize that in Marx's view the answer to this question depends on the prevailing relations of production. This critical point is overlooked by Smith and Ricardo because, according to Marx, they take the Robinsonade of individuals in isolation as their starting point. In contrast, Marx elaborates

how in the pre-capitalist age, when relations of direct order and personal dependence ruled, concrete labour was immediately social and use value dominated:

> *Let us now transport ourselves from Robinson's island bathed in light to the European middle ages shrouded in darkness.* (…) *Personal dependence here characterises the social relations of production* (…). *But for the very reason that personal dependence forms the ground-work of society, there is no necessity for labour and its products to assume a fantastic form different from their reality. They take the shape, in the transactions of society, of services in kind and payments in kind. Here the particular and natural form of labour, and not, as in a society based on production of commodities, its general abstract form is the immediate social form of labour. (Marx, 1992, p. 81)*

Marx not only challenges Smith's and Ricardo's projection of the social relations of commodity production into the pre-capitalist past but also prefigures a future in which concrete labour could be immediately social. He transcends beyond the commodity economy by envisioning a society in which a high degree of social division of labour would be organised consciously in a communal way rather than through the market mechanism connecting isolated private producers. Yet, his vision is critically distinct from the Ricardian Socialists, whom he blames for failing to acknowledge the mutually constitutive relation between production and circulation. If – as they suggest – money was abolished and replaced with labour time certificates, this must either result in the re-emergence of money as long as the relations of production remained unaltered (as discussed in the next section); or the bank administering the labour time certificates must directly organise the social production and distribution under conditions of common property. The latter would amount to a revolution in the relations of production. In such an economy, the bank would organise social production consciously for the society as a whole and as a result of this, individual labour would immediately enter production as social, general labour and money would become superfluous.

Under these relations of production labour time embodied would be subject to direct estimation (Marx, 1993, pp. 171-3).[22]

In contrast, as long as social production is organised by exchange between independent individuals, the exchange of products is the medium through which the participation of the individual in general production is mediated. Concrete labour time objectified in a particular commodity must be exchanged against money, which expresses no more than its quantity of abstract labour time to become social. This is why private labour cannot be treated immediately as social labour in Mar's analysis. How social production is mediated in monetary exchange is the subject of the subsequent section.

3.2. *Why does money not directly represent labour-time?*

> *Because price is not equal to value, therefore the value-determining element – labour time – cannot be the element in which prices are expressed, because labour time would then have to express itself simultaneously as the determining and the non-determining element, as the equivalent and non-equivalent of itself.* (Marx, 1993, p. 139)

We have already learned from the answer to our first question that labour time cannot directly be money, since labour in a commodity producing economy is always concrete private labour and can only be transformed into abstract social labour through monetary exchange. We have also seen that money as the general equivalent against which all commodities are exchanged, "comes to stand in opposition to particular commodities" (Foley, 1983, p. 7). The next step in our analysis is to develop the critical distinction between price and value. "Price is the amount of money that a commodity commands in a particular situation" (ibid.). Value is the amount of abstract labour which is required on average for the production of this particular commodity under the prevailing forces of production. As we have seen, this value

is not directly measurable but it is realised in exchange. Nevertheless, the regulation of social production through exchange requires the possibility of deviation between any particular value and price. This is a second reason why money cannot directly represent labour time.

Marx observes: "Adam Smith says that labour (labour time) is the original money with which all commodities are purchased" (1993, p. 167).[23] Marx goes on to explicate an important restriction: "As regards the act of production, this always remains true (…). In production, every commodity is continuously exchanged for labour time" (ibid.). However, the characteristic of an economy with specialised producers and division of labour is precisely that labour time is not consciously allocated between different branches of production, but that the distribution of social labour time occurs "behind the backs of the producers" through their spontaneous exchange (Rubin, 2008, p. 77).[24]

From the perspective of Smith's producer in the "rude and early state", all her products are immediately "bought" by her own labour time. But for Marx, even when abstracting from a systematic analysis of capital – as he does in the Chapter On Money in the *Grundrisse* – the distribution of social labour over the different industrial branches requires the possibility of a deviation between value and money price. As Rubin (2008) points out, only "[t]he state of equilibrium between two branches of production corresponds to the exchange of products on the basis of their values" (p. 78). Marx elaborates further: "If the preconditions under which the price of commodities = their exchange value are fulfilled and given; balance of demand and supply; balance of production and consumption; and what this amounts to in the last analysis, proportionate production (…), then the money question becomes entirely secondary" (Marx, 1993, p. 153). This is because if production is given as proportionate, i.e. if social labour is assumed to be immediately distributed to meet the demands of society, the question what regulates the proportionality of the allocation of labour is redundant.

But if we want to understand how monetary exchange regulates the distribution of social labour, we must consider two sources of deviation between value and price. In the abstraction of a commodity economy this is founded on the difference between labour time and money. "[E]very deviation of production", summarises Rubin, provokes forces of competition "which put a stop to the deviation in the given direction, and give birth to movements in the opposite direction. Excessive expansion of production [in one sector] leads to a fall of prices on the market. This leads to a reduction of production, even below the necessary level. The further reduction of production stops the fall of prices" (2008, pp. 77-8). It is this regulation through the deviation between price and value exploited in the competition between producers that leads to an approximate proportionality of social production in a commodity economy.

Marx (1998 [1894]) identifies a second source for the deviation between price and value for the fully developed capitalist economy in chapter ten of the third volume of *Das Kapital*. Here he expands his analysis to consider not only the role of capital and wage labour but also the heterogeneous organic composition of capitals across and within sectors at any given point in time. Marx's discussion of the transformation of values into prices is complex and has been the subject of great and long-lasting controversy. It is beyond the scope of this paper to re-assess this debate.[25] The point here is simply to identify this second source for the deviation between value and price which necessitates money.

Marx argues that, despite unequal organic compositions of capital, the actual process of competition between capitals equalises the profit rate across sectors such as to gravitate around the profit rate in the sector with an average composition of capital. This also implies that prices are tethered to the prices of production, not to values. Hence, if prices were forced to be equal to values for example by enforcing a strict time chit regime where time certificates could only undergo equal exchange, those sectors where the price of production is lower than the value

would reap an extra profit, while those with a higher price of production would lose out. The proportionality between social production and the ever changing social needs would not be approximated. The deviation between values and prices of production and the gravitation of prices in the market to the latter rather than the earlier thus also necessitates money.

While the two sources of deviation and the intermediation by money enables proportionality of social needs to social production, this is through constant disproportionality. The economy will never settle down in a state of equal profits where price, value and price of production as well as production and demand coincide permanently. The equalisation of the rate of profit can only be achieved through the deviation from the average rate. The proportionality of production and social needs can only be established through disproportionality.

Because the two deviations are the regulators of the social distribution of labour by independent exchange they must prevail, according to Marx, as a potentiality in an exchange-constituted economy. By contrast, Ricardo posits "a tendency toward equilibrium, in the sense of proportional production" (Campbell, 1997, p. 73), which he does not conceive of as mediated by exchange and money. Thus, his Socialist followers believe that money can be simply abolished. However, Marx argues that even if a form of money was introduced which is denominated in labour time as Gray, Bray and Proudhon suggest, "[t]he time-chit, representing *average labour time*, would never correspond to or be convertible into *actual labour time*; i.e. the amount of labour time objectified in a commodity would never command a quantity of labour time equal to itself, and vice versa, but would command, rather, either more or less" (Marx, 1993, p. 139).

Marx debunks the hope that the abolition of money and its replacement by time-chits would overcome the contractions and crises in commodity production. "The first basic illusion

of the time-chitters consists in this, that by annulling the *nominal* difference between real value and market value, between exchange value and price – that is, by expressing value in units of labour time itself instead of in a given objectification of labour time, say gold and silver – that in so doing they also remove the *real* difference and contradiction between price and value" (Marx, 1993, p. 138, emphasis added).

If the contradiction between price and value could be removed by the substitution of money with time chits, a capitalist economy would constantly be in equilibrium without the possibility of disturbances or crisis. However, such an equilibrium is highly unstable as long as exchange functions as the mechanism of distributing social labour. The state of forced equation of value and market price by means of denominating money in labour time is analogous to the state of division of labour and specialised production under barter exchange as discussed with regard to Smith. But now the instability is derived from the proportionality of production rather than the certainty of exchange. Either the dynamics of competition and the profit-seeking migration of producers between sectors will generate the necessary deviations independent of the nomination of the monetary unit and thereby break the forced equation of value and price.[26] Or, for example, legal constraints prevent the deviations by forbidding prices to differ from the nominal price on the time chits. In this case there will be no regulator to establish proportionality of social production. Unless some direct social organisation of production is established, the social division of labour becomes precarious.

Therefore Rubin comes to the conclusion: "Total agreement between market price and value [and we can add price of production] would mean the elimination of the unique regulator which prevents branches of the social economy from moving in opposite directions. This would lead to a breakdown of the economy" (2008, p. 78). It is the deviation between price, value and price of production that "adapts the price-form to a mode of production" (Marx,

1992, p. 104). This is why if social production is regulated by exchange, there must be a form of money that is different from labour time. In sharp contrast to Marx, the concern of neoclassical general equilibrium analysis is whether a state of general equilibrium exists, not how the spontaneous interaction of independent producers results in this state. There is no conceptual space for the specific social forms of production nor do general equilibrium theorists ask how such a social form could be sustained. Marx tells us, that the commodity economy only enters the state which is the exclusive concern of general equilibrium theories by accident in passing, but never settles.

3.3. Why must products take the form of commodities if production is for exchange?

As we have seen, in Marx a potential deviation between value, price of prodcution and price must persist for money to facilitate the regulation of social production through exchange and to signal the need for the reconstitution of social labour. At the same time, the contradiction of use value and exchange value comes to the fore if we consider money as the facilitator of exchange emphasised in our interpretation of Smith. But Marx parts from Smith in linking this process to the evolution of the commodity form. Marx notes: "The historical progress and extension of exchanges develops the contrast, latent in commodities, between use-value and value. The necessity for giving an external expression to this contrast for the purposes of commercial intercourse, urges on the establishment of an independent form of value, and finds no rest until it is once for all satisfied by the differentiation of commodities into commodities and money" (Marx, 1992, p. 90). The latest state of the differentiation between commodities and money is bank money. Money ceases to be a commodity. The only

use value of money is now its exchangeability, i.e. its exchange value. Bank money derives its value not from production but through the regular practice of its valorisation in exchange.

As much as money as socially accepted general equivalent generalises exchange, the product of each individual producer is "torn out of its local, natural and individual boundaries" (Marx, 1993 [1939], p. 150). Exchange is no longer conditioned by the wants of the immediate trading partners, as in Smith's example of the baker, butcher and brewer. However, to the degree that exchange is liberated from these local constraints it also "becomes dependent on the state of general commerce" (ibid.). The potentiality of non-realisation of value in exchange is inherent in the commodity form:

> *The need for exchange and for the transformation of the product into a pure exchange value progresses in step with the division of labour, i.e. with the increasingly social character of production. But as the latter grows, so grows the power of money, i.e. the exchange relation establishes itself as a power external to and independent of the producers.* (Marx, 1993, p. 146)

In *Capital* Volume I Marx articulates this externalisation of the relation between people into money relations between things as the fetish character of commodities. The externality of the exchange relations manifested in money might make it appear as if the contradiction between use value and exchange value, between the useful concrete qualities of products and their aspect of embodiments of abstract value arises from money. This is the illusion underlying the idea that labour time money could do away with crisis, which was discussed above. A similar illusion underlies other theories that seek to explain crisis purely from monetary relations.

For example, Hayek (1932) in his *Monetary Theory and the Trade Cycle* aims for a purely monetary theory of the business cycle. He suggests that "only the assumption of primary monetary changes[27] can fulfill the fundamentally necessary condition of any theoretical

explanation of cyclical fluctuations" (1932, p. 95). In *Prices and Production* Hayek (1931) elaborates his cure of the business cycle: a policy of neutral money. This is a monetary policy that "leave(s) production and the relative prices of goods (…) 'undisturbed,' exactly as they would be if there were no money at all" (Sraffa 1932, p. 42). In Hayek's vision, the market economy would evolve entirely smoothly and free of crisis as long as the monetary policy was such as to perfectly imitate the natural state of affairs, that is the absence of money.

However, the opposite is true in Marx's perspective. Money is not the origin of contradictions and crisis. They arise instead from the nature of the commodity. The "contradiction between the commodity's particular natural qualities and its general social qualities contains from the beginning the possibility that these two separated forms in which the commodity exists are not convertible into one another" (Marx 1993, p. 147). It is this possibility of non-convertibility that gives rise to money instead of money causing the possibility of non-convertibility. Since money evolves together with the commodity economy, in Marx vision, any reference to a neutral money of Hayek's type is useless to understanding the commodity economy. Neutrality of money and a primacy of real as opposed to monetary analysis as defined by Schumpeter (2006 [1954]) are incompatible with Marx's theory of a commodity-producing economy. Money and its effects are an expression of the nature of the commodity economy, it cannot be 'switched off', since it constitutes an inherent part of it.

4. Conclusion

We have seen that in both Smith and Marx the monetary economy is qualitatively and structurally different from a moneyless economy. Smith's and Marx's answers to our question as derived in this paper demonstrate that for both money is indispensable in an exchange-

constituted economy. The notion of the neutrality of money as articulated by Schumpeter collapses from a Smithian and a Marxian perspective, once we do *not separate exchange from production*. There can be no barter economy comparable to a monetary economy. The barter metaphor is void unless social production is directly regulated either by individual subsistence production (Smith) or consciously by society as a whole (Marx) – which is precisely *not* the case of a capitalist economy. Yet, to achieve a nuanced disentanglement of the monetary theories all simply subsumed under the broad category of commodity theories by credit theorists, we have to recapitulate the critical differences between Smith and Marx derived in this paper.

For Smith money is necessary to provide sufficient certainty of exchange such that independent producers can specialise their production and depend on the market for their livelihood. If there was no money, the producers would revert back to diversification. Smith's ahistorical metaphor of individual producers that either specialise or diversify their production shows that in his framework production and exchange are inseparable only in a mechanical sense – like the boxcar is inseparable from the locomotive for the train to move.

By contrast, for Marx the relationship between production and exchange is not about the sum of the individual production decisions of independent producers. Nor is it about the distribution of labour independent of its social form over some pre-given structure of tasks derived from some set of ahistorical needs.[28] He therefore rejects Smith's independent producer of some fictional "rude and early state". Such an individual, from Marx's point of view, is a projection of the universalisation of competition under capitalism into some imagined past. Pre-capitalist modes of production have instead to be examined in relation to their specific conditions. For Marx production is always social and historically determined. At the same time, the so-called relations of distribution are themselves relations of production.

Thus for Marx, production and exchange are inseparable in a phenomenological sense – like the colour of the sky is inseparable from the sky itself – and can only be understood as a historical mode of production.

Under capitalism wealth takes the form of commodities. Commodity production, the universalisation of exchange and an increasing dominance of abstract labour as wage labour are mutually constitutive with money relations in Marx's analysis. As the capitalist mode of production takes hold, production becomes production for exchange value and the products take the form of commodities, which necessarily have to express their value in money. Money is essential in Smith for the coordination of an exchange economy whereas for Marx money is essential as a constitutive element of the capitalist mode of production.

Smith's silence on specific historic relations of production in his thought experiment on the "rude and early state" is manifested in the isolated, self-interest hunter and fisherman and is related to his explanations in terms of natural and as such ahistorical human propensities. For him social division of labour is the result of a tendency to truck and barter which he attributes to human nature as such. From Marx's point of view this tendency to exchange is not at all natural, but instead an expression of capitalist social relations. In a similar vein, Smith is concerned with the quantitative expansion of wealth independent of its specific social form and the social division of labour is seen as its natural driver. According to Marx, the massive expansion of wealth at Smith's time is an expression of ever greater accumulation specific to the capitalist mode of production and so is the obsession with increasing productivity in terms of output per labour unit. Marx points out that in previous modes of production, specialisation was not about the increase in the quantity of output but about the refinement of the quality of goods.

The difference between Smith and Marx is rooted in Smith's projection of capitalist conditions into the past and present, which prevents him from looking beyond this mode of production. Smith sees no other form of social organisation of the social division of labour than market exchange. By contrast, Marx acknowledges that pre-capitalist societies did have a certain degree of social division of labour regulated by direct personal relations of hierarchy and envisions a future form of division directly organised by the community. Accordingly, money is a universal necessity for Smith whereas it is a constitutive element of capitalism in Marx, that might become less essential or even redundant in some future mode of production.

Against the background of this distinction between Smith and Marx, we can also further develop the relationship between the neutrality of money and real analysis that we took as starting point in the introduction to this paper. For Smith, money is necessary and monetary exchange enables the social division of labour. Nevertheless, due to Smith's mechanical relationship between exchange and production and his concern with wealth independent of its social relations, the social division of labour, exchange and production can be analysed separately from money. Thus Smith's analysis can serve as point of departure for neoclassical theories which separate exchange and production, suppose monetary neutrality and pursue a primacy of real analysis.

By contrast, monetary neutrality and real analysis are incompatible with Marx. For Marx "[t]he capitalist process of production taken as a whole represents a synthesis of the processes of production and circulation" (Rubin, 2008, p. 9). Money as representation of value is the indispensable synthesising element between production and circulation. As such money is not the source of crisis, but the expression of the contradictions inherent in the commodity form. In Smith it appears as if money could overcome the uncertainty of exchange, whereas in Marx this uncertainty is just elevated to another level in a monetary economy. In Marx the

basic contradiction is that the production of use values and the fulfilment of social needs becomes itself a side product of a mode of production driven by something entirely different, i.e. profit and the accumulation of capital. In Smith real analysis makes sense to the degree that he is concerned with use values as such. For Smith's independent producer use value and exchange value are ultimately the same thing since even though he produces for exchange the purpose is to fulfil his own needs.

Marx's critique of political economy calls the very idea of real analysis into question. For Marx describing "all essential phenomena of economic life (…) in terms of goods and services, of decisions about them, and of relations between them" – as Schumpeter summarizes real analysis – is anything but real. It amounts instead to being trapped in commodity fetishism, i.e. mistaking social relations for attributes of things.

Ingham (2004, 1996) and other credit theorists place Smith and Marx in one strand of monetary thinking with Ricardo and Walras' general equilibrium analysis under the broad category of commodity theories. In contrast, this paper demonstrates fundamental differences across the monetary theories of this diverse set of thinkers. In particular, it shows that in Smith and Marx money is indispensable, unlike in Ricardo or general equilibrium models. In fact, the latter fail altogether to incorporate money in a meaningful way. In contrast, in Smith and Marx, if we removed money, we would end up with economies structured in a fundamentally different way. The core of Smith's and Marx's theory of money is not that money is a physical and produced good or is of any other specific substance. The core is that money is a universal instrument of commerce or the general commodity in terms of general exchangeability. This has been developed by stressing the synthesising role of money in relation to production and to exchange.

Therefore, we suggest to reconsider whether the categorisation of theories of money in terms of the qualities of the thing that is positioned as money is effective for grasping their critical differences. This is broadly consistent with Lawson's (2016, 2018) intervention based on the social positioning theory. But unlike in Lawson's analysis, the constitution of the social totality within which money is positioned matters. We would like to propose as a question for further research, whether the difference in the nature of money in various economic theories might be better captured by considering the ways in which these theories conceive the relation between money, production and exchange. For the cases considered in this paper this criterion works effectively.

As we have seen, the way the relation between production and exchange is conceptualised is vital to capture both the common indispensable role of money in Smith's commercial society and Marx's commodity-producing economy, as well as to distinguish their respective theories. Similarly, this criterion can serve to distinguish Marx from Ricardian theories. In a Ricardian mode of analysis, the focus is on production as the ultimate determinant and labour embodied is directly taken as value without the mediation of monetary exchange. As a result of the failure to acknowledge the mutually constitutive relation between production and circulation real analysis is combined with a neutralisation of money. For neoclassical general equilibrium models a strict separation between exchange and production coincides with the failure to integrate money other than as a numéraire, and real analysis is in terms of relative prices.

Finally, by analysing money, exchange and production in conjunction, this paper has generated two observations regarding the nature of neoclassical general equilibrium models from the viewpoints of Smith's and Marx's frameworks. In addition to the properties just mentioned, neoclassical general equilibrium models usually assume convex production possibility sets which imply non-increasing returns to scale and hence individually diversified

producers. The three properties, diversified production, relative independence between exchange and production and dispensability of money turn out to be the key characteristics of Smith's economy without social division of labour. This is a state without coordination of production by exchange. Hence, it is not considered an exchange-constituted economy in Smith's framework, and money is dispensable. From Marx's perspective, if all prices were in equilibrium no deviation between values and prices could occur and there would be no need for money. But in equilibrium, supply and demand cease to exercise any regulating power. As such, from Marx's perspective, a general equilibrium model fails to capture even the most basic elements of a market-constituted let alone a full-fledged capitalist economy.

Footnotes

[1] Exchange is here conceived as a transaction where the relation between producers becomes the relation between their product, i.e. an external relation between things. Marx illuminates this by starting his analysis with the commodity form and by uncovering the commodity fetish. In Smith, this becomes apparent only implicitly by the way he conceptualises producers as isolated and independent in his thought experiment on the "rude and early state".

[2] Note that the notion of an exchange-constituted economy developed in this paper is different from the microeconomic conception of an exchange economy. In the latter case, exchange only determines the allocation of given endowments conditioned by given preferences and production possibilities: exchange decides the outcome of the economy but does not define its basic characteristics.

[3] Ingham (2018, 837) stresses the *Methodenstreit* in this regard but points out that the antinomy is much older. He refers to von Glahn (1996) to argue that the two theories of

money have competed in China since the Warring State period. In the eyes of the present author, it is debatable whether von Glahn projects 20th century notions of monetary theory on millennia of Chinese history or whether there actually has been such a complete congruence in the two poles of conceptualising money.

[4] Another example is Orléan (2013, 2014). He arrives at the same classification as Ingham despite a refinement in the criteria for distinguishing theories of money by introducing the notion of substance theories of money. Orléan (2014) groups both "utility and labor theories" together and argues that they both "conceive of value (…) as the consequence of a substance, or quality, that is peculiar to exchangeable commodities" (11-12).

[5] Lapavitsas (1994) also points to several Japanese contributions illuminating the influence of the Banking School on Marx.

[6] See also Lapavitsas (2000) contrasting his reading of Marx with that of scholars who think money must not be a commodity.

[7] See Peacock, 2017 for an appraisal of Lawson's contribution and Ingham (2017) for a critique suggesting that Lawson pursues a substance theory of money along the lines discussed above.

[8] Note that the price of these fixed costs would in the "rude and early state" as conceptualised by Smith be measured in terms of labour time exhausted by the individual producer in the production of the tools for their own use.

[9] Note that the producers here are the isolated members of Smith's imagined tribe who in contrast to wage labourers own the whole of their product.

[10] Note that as a consequence of starting his analysis from the isolated individual producers, Smith is silent on the social form of labour. As if the commercial society was classless, everyone appears equal as merchants.

[11] Menger (2009, p. 20) poses the problem in a very similar way to Smith by supposing three agents that fail to exchange by pure barter with the addition, however, that indirect barter provides a solution. Despite clear parallels Menger does not give any credit to Smith and instead finds: "Nor even do the theorists above mentioned [including Smith] honestly face the problem that is to be solved, to wit, the explaining how it has come to pass that certain commodities (the precious metals at certain stages of culture) should be promoted amongst the mass of all other commodities, and accepted as the generally acknowledged media of exchange" (pp. 17-18).

[12] By seeing the division of labour as the "greatest improvement in the productive power of labour" (Smith, 1999, p. 109) and hence of wealth, and establishing monetary market exchange as the only form of its organisation, Smith lays the ground for later interpretations that see him as an apologist for the free market economy.

[13] Note that the uncertainty Smith is concerned with is that of the independent producer who is unsure whether she can secure her livelihood by exchanging her specialised product. This is an uncertainty from the perspective of obtaining use values and critically different from Marx's uncertainty of the wage labourer, the realisation of value and the valorisation of capital.

[14] I would like to thank Anonymised for pointing me to this insight.

[15] Note that Smith's notion of money understood in this way is also compatible with that of Lawson (2016). Lawson shows that "(m)oney is just a positioned individual form of value, one that community participants accept as a general form" (p. 969). This general acceptance by the community is required in Smith, too, for some stuff to become the universal instrument of commerce. The stuff positioned as money, in Lawson's analysis, must already have the capacity of being a reliable store of value. The same can be inferred from Smith's long list of items which have historically served as common instrument of commerce (1999, p. 127). They have

all in common that they are durable goods and they all have an intrinsic value, as such they are reliable stores of value.

[16] The separation of exchange from production is also evident in the way general equilibrium theory is taught: first a pure exchange economy in the Edgeworth Box is discussed, and only in a next step is production introduced (see e.g. Mas-Colell et al. 1995).

[17] For example, the following seminal contributions present attempts to integrate individual non-convexity or discussions thereof: Bator (1961a, 1961b), Farrel (1959, 1961a, 1961b), Khan 1987, Koopmans (1961), and Rothenberg (1960, 1961).

[18] Interestingly, Keynes, too, in his General Theory attempts to reconcile the theory of value with the theory of money: "One of the objects of the foregoing chapters has been to escape from this double life and to bring the theory of prices as a whole back to close contact with the theory of value. The division of Economics between the Theory of Value and distribution on the one hand and the Theory of Money on the other hand is, I think a false division." (1997, p. 293)

[19] As Fine and Lapavitsas (2000) expound, in contrast to feudalism "advanced capitalism, characterized by independent competing enterprises and by the existence of a working class for which the choice of employment is largely determined by monetary reward, requires reference to abstract labour" (p. 363). See Elson (2015, pp. 122-123) for a concise discussion of how differentiating abstract labour from labour in general is one important distinction between Marx's and Ricardo's value theories. Also see Murray (2000) for an elaboration why abstract labour is not simply the exertion of human effort as such which occurs under any social form, but instead refers to "practically abstract labour" which is a form of labour validated by the process of practical abstraction in the market.

[20] Elson (2015, pp. 116-23) develops a critique of the labour theory of value as a theory of price along these lines in relation to the treatment of Marx in the Anglo-Saxon tradition of economics (e.g. Dobb, Meek, Sweezy).

[21] The original source is in German. This is the author's translation.

[22] In this setting, the bank would essentially take on the role of a central planner. Against the background of the 20th century experience of 'really existing socialism', it is interesting to see that Marx (1993) critically describes the central planning bank as "a despotic ruler of production" (p. 155).

[23] The full statement is: "Labor was the first price, the original purchase money that was paid for all things." (Smith, 1999, p. 133)

[24] Note that from the discussion in the previous section, it is clear that the theory of value cannot be reduced to a theory of the distribution of social labour but is instead concerned with the social determination of labour under specific relations of production (see Elson, 2015, for a detailed discussion of this point). Yet, at the same time the distribution of social labour is one important aspect of the theory of value in a commodity economy.

[25] For a recent comprehensive review of the different interpretations of the transformation problem see Moseley (2016, Part II).

[26] Interestingly, Marx does not suggest that any particular commodity will arise as general equivalent and monopolise exchange instead of the time chits. "The medium with which commodities (…) are compared would not be a third commodity but would be rather their own measure of value, labour time itself; as a result, the confusion would reach a new height altogether. Commodity A, the objectification of 3 hours' labour time, is = 2-hour-chits; commodity B, the objectification, similarly, of 3 hours' labour, is = 4 labour-hour-chits." (Marx, 1993, p. 139)

[27] This refers to a change in the quantity of money.

[28] See Elson (2015 [1979], pp. 115-30) for a critical discussion of interpretations of Marx's theory of value as either a theory of price or a theory of the social distribution of labour over pre-given tasks.

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