On the Necessity of Money in Smith's Commercial Society and Marx's Commodity Producing Economy[1]

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Abstract

This paper argues that Smith and Marx find money necessary for the specialisation of individual producers and the regulation of social production by market exchange. Increasing returns to scale incentivise individual specialisation. However, specialisation is conditioned on the producers' ability to provide their needs by exchange. Specialisation under barter is highly unstable since exchange fails regularly. This unstable equilibrium tends to either collapse back into a stable diversified equilibrium or to give rise to a socially accepted representation of exchangeability, i.e. money. Money increases the strategic complementarity of specialisation by enhancing exchange certainty and a stable specialised equilibrium can emerge.

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

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1. Introduction

> *Every child knows, too, that the masses of products corresponding to the different needs require different quantitatively determined masses of the total labour of society. That this necessity of the distribution of social labour in definite proportions cannot possibly be done away with by a particular form of social production but can only change the form in which it appears, is self-evident.* (Marx 2000 [1868], Letter to Kugelmann)

One of the fundamental questions guiding both Smith and Marx is how the distribution of social labour becomes proportional to the needs of society, if social production is organised by the spontaneous exchange between independent producers. The task of this paper is to show how both Smith and Marx argue that if social production is organised by exchange, 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?*

We will first turn to Smith and discuss how he derives a potential failure of exchange among specialised producers in a situation of pure barter. Smith's emphasis is on why money is needed for the smooth operation of exchange, which in turn conditions the specialisation of individual producers and the social division of labour. Specialisation can be defined in Smith's words as "every man [applies] himself to a particular occupation" (1999: 120). It is a form of individual production in which only a "very small part of a man's wants (…) the produce of his own labour can supply" (ibid.), i.e. the number of kinds of goods wanted is greater than the number of kinds of goods produced. We understand *social* division of labour to refer to the social correlate of individual specialisation in production, i.e. to a form of social production in which distinct individual producers produce the different needs of society.[3] Social production without social division of labour would be a situation in which individual producers are not specialised and all producers produce all needs of society. Unless money arises to facilitate exchange under conditions of individual specialisation and social division of labour, the economy will collapse back into a state of individually diversified production where only the surplus over the producers' existential needs is exchanged. If, on the contrary, money arises under these conditions, individual producers will tend to specialise and social production will be facilitated by exchange.

There are only two possible stable states of the economy in Smith's thought experiment (Gedankenexperiment) of an "early and rude state of society": First, specialised individual production where the proportionality of social production is coordinated through spontaneous monetary exchange. Second, diversified individual production where producers exchange only their surplus by barter and the proportionality of social production results from the conscious production decisions of all individual producers. This shows that the production structure and the mode of exchange of a monetary economy are fundamentally different from a barter economy.

Smith's finding is contrasted with the neoclassical genealogy of money derived from a pure exchange economy. Neoclassicals locate the origin of money in the saving of transaction costs and overlook the qualitative change that comes along with the transition to a monetary economy. Money is conceptualised as neutral and described as a technical device to facilitate transactions. Money is understood to function normally if the economic process behaves in the same way as it would behave in a barter economy (Schumpeter 2006 [1954]: 264). In contrast, in Smith's framework money can never be neutral. Smith attributes a

[3] Smith is not very coherent in his use of the term "division of labor". He applies it to the micro level of a single firm – his famous pin factory – as well as to society as a whole.

qualitative change in the production structure and the mode of exchange to the rise of money.

The second part examines how Marx builds on Smith's analysis by employing the labour theory of value as a theory of the social regulation of production through exchange. Here the focus is on the emerging proportionality of production more than on the conditions of exchange. Unlike Smith, Marx departs in his analysis of money not from a situation of barter exchange but from 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: 2). The following three questions are "at the bottom the same question" (Marx 1992 [1887]: 97) and will guide our representation of Marx's analysis of money:

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.)

Three key findings arise from these questions. First, the practice of regular and general exchange translates concrete private labour embodied in distinct use values into abstract, social labour expressed in money as an externalised representation of value. Second, the social regulation of production through exchange relies on the possibility of deviation between value and market price. Third, money embodies the contradictions underlying commodity production but is not the source of these contradictions and hence not the ultimate cause of crisis.

The second finding is contrasted with the neoclassical concept of market clearing equilibrium. The state of market clearing in Marx occurs when market price and value coincide. But in this situation nothing would regulate the social distribution of labour across sectors. There would be no signals motivating profit-seeking producers to migrate between sectors. A settling down in a market clearing equilibrium is impossible.

The last section summarises Smith's and Marx's arguments on the necessity of money in an economy of specialised producers coordinated by exchange.

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

> *Smith's theory of the division of labour did him a great service: by starting out from a conception of society as a gigantic workshop with a division of labour, Smith arrived at the extremely valuable idea of society as a society of people who labour and who simultaneously exchange. The division of labour makes all participants in a single process of production. The products of labour of all members of society are 'brought, as it were, into a common stock, where every man may purchase whatever part of the product of other men's talents he has occasion for.' Each man becomes dependent on the labour of other people. (…) Each man acquires the produce of other people's labour, and they are thus united together into a single labouring society. Smith conceives of his labouring society strictly as an exchange society.* (Rubin 1979 [1929]: 183-4)

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: 109). Therefore we must ask what it is that causes the division of labour in Smith's view. Smith explains that the division of labour "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: 117). This propensity results from the pursuance of self-interest of all individuals. If all individuals tend to exchange they realise that they will gain from specialisation thanks to increasing returns to scale. Specialisation of all individuals results in the social division of labour.

2.1. Specialisation driven by increasing returns to scale

Smith refers to an "early and rude state of society" (1999: 150) as a thought experiment (Gedankenexperiment). Smith 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 commodity and acquire all other commodities through exchange (1999: 119). We interpret the reference to a tribe 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 she will receive greater enjoyments if she specialises and exchanges her product with others, since her 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, i.e. the time not wasted by moving from one task to another (Smith 1999: 112). Specialisation from the perspective of an individual producer means extending the scale of production of one good while decreasing that of others. As her labour productivity grows with specialisation the average costs in terms of labour time fall with the increase in scale, i.e. she faces increasing returns to scale.

But once the producer decides to specialise there arises an additional drive towards specialisation. As she specialises she starts to invest labour time in the production of specialised tools, which represent positive fixed costs. If she faces positive fixed costs, average costs will further decrease with an increase in the scale of production. Hence, specialisation is a self-enhancing process from the perspective of the cost structure in production. All producers in the tribe face the same decision. Therefore they tend to specialise. What exact pattern of specialisation among the different producers results is not determined, and may be path-dependent.

2.2. Unstable state of specialisation Without Money

Specialisation is driven by increasing returns per unit of labour but is 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: 119-20, emphasis added). We interpret this "certainty of being able to exchange" *not* in an absolute sense as saying that no matter in which trade an individual producer specialises she will always be certain to exchange her surplus product. Instead we understand it to mean that the "certainty of being able to exchange" describes the certainty of the abstract possibility of exchange.

Note that there is a positive feedback effect in addition to the one described from the perspective of costs of production. We can call this a strategic complementarity in the language of social interaction models. A strategic complementarity is defined as a social interaction in which the choice of an action by one participant strengthens the incentives of other participants to chose the same (Bowles 2004: 159-60). As some producers specialise, the occasions for exchange increase, which encourages others to also specialise and ultimately results in the social division of labour. Therefore Smith states that the "division of labour is limited by the extent of the market" (1999: 121) where he equates the market with "the power of exchanging" (ibid.). 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 of specialisation. As noted before the social division of labour implies specialisation by all individual producers. This relationship is representable by logical operators:

Certainty of Exchange <= Specialisation <= Division of Labour

But can there be a "certainty of being able to exchange" without money?

Smith starts his analysis of the origin of money from a situation, where *producers are specialised, labour is socially divided and social production is organised by exchange*. "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) Smith then formulates the problem which Menger (2009 [1892]) takes as starting point in his book "On the Origin of Money"[4] and which is commonly referred to as the problem of the "double coincidence of wants":

> 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: 126, emphasis added)

In the context of Smith's own argument, this way of posing the problem is based on a logical inconsistency. As shown above Smith argues that specialisation is conditioned by the "certainty of being able to exchange". Therefore producers can only become fully specialised producers, brewers, bakers or butchers, if they expect to be able to exchange their products. But if they face the trouble of the double coincidence of wants, it is very uncertain whether they will be able to exchange under conditions of pure barter where everyone only offers her concrete produce for exchange. Hence, the barter economy with fully specialised producers is not only an ahistorical fiction but also logically contradictory on Smith's own ground. The certainty of being able to exchange, which conditions specialisation, is substantially

[4] Menger (2009: 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." (17-18)

undermined if money is absent. Hence, specialisation under barter exchange is highly unstable if it was to arise at all.

We can identify two paths out of the unstable situation of specialisation and barter exchange consistent with Smith's argument: First, the system can relax into a system of specialised producers exchanging with the help of money. Second, the system can collapse back into diversified production with small-scale exchange facilitated by barter. In short, the mode of production has to be brought into accordance with the mode of circulation in either direction in order for the system to settle in a state of greater stability.

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, besides the peculiar produce of his own industry, 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.)

Suppose the baker and the brewer realise that they cannot receive meat in exchange and the butcher realises that he has produced meat which is of no use to him and which he cannot exchange against other products that would give him enjoyment. Then one way out is to start holding a highly exchangeable product in hope of establishing the "certainty of being able to exchange" which they require to survive and reproduce as specialised producers.[5] This results in different goods successively being established in Smith's language as

[5] Note that in a state of pure barter, a change in the trade of specialisation by the producer that fails to exchange cannot solve the problem, since exchange remains constrained by the wants of the immediate trading partners.

"common instrument of commerce" (1999: 127), as a rudimentary form of money. Finally, Smith describes how at some point a metal arises as money and characterises this as the "universal instrument of commerce, by the intervention of which goods of all kinds are bought and sold, or exchanged for one another." (1999: 131) The crucial part is the emergence of a "universal instrument of commerce" not that this instrument 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".[6] The physical characteristics of divisibility and homogeneity might have favoured metal historically. However, there is no reason why in Smith's framework paper notes or any other instrument of commerce should not arise as "universal instrument of commerce".

The important point is that money as universal instrument of exchange becomes the embodiment of the certainty of being able to exchange. Since all goods are exchanged against money the possession of money grants certainty of exchange. From the perspective of the specialised producer in Smith's thought experiment, she can now be certain to be able to exchange as long as she succeeded in exchanging her product against money in the past. The sale of her product in any concrete situation remains subject to uncertainty. But the ability to purchase is guaranteed by the possession of money.

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

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

Whereas the situation of specialisation without money supposed in the double coincidence of wants problem is strictly speaking impossible to arise, Smith interprets it as a situation that we might today grasp by the concept of a strategically unstable equilibrium. It

[6] I would like to thank Duncan Foley for pointing me to this insight.

is impossible for the economy to rest in a state of specialisation without money under the conditions of Smith's thought experiment. We have just described how the necessary certainty of the abstract possibility of exchange can be established by the emergence of money as universal instrument of commerce. An alternative path out of a state of specialisation without money can be a return to diversified production.

2.4. No money, no specialisation but diversification

In the hypothetical situation of specialised production without money, "the power of exchanging must frequently have been very much clogged and embarrassed in its operations" (Smith 1999: 126). Unless money arises the specialised producers, who depend on exchange for their living but experience a lack of certainty of being able to exchange, will tend to move back to diversified production to provide for their needs. 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 decreasing returns to scale. Decreasing returns to scale will in turn create additional incentives to diversification. So similarly to specialisation there is a positive feedback effect from the production cost perspective. But there is also a strategic complementarity analogue to that of specialisation. As one producer decides to diversify the incentive for all others to also diversify increases since the extent of the market decreases.

Whereas exchange is a necessary condition for specialised production, specialised production is not a necessary condition for exchange. 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

The situation described in the last section underlies neoclassical economics. Generally assumed convex production sets imply decreasing returns to scale. 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.

What is considered 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: 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. 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: 84). If all producers maximise their profit by inactivity, the "private ownership economy" (Debreu 1959: 83) is reduced to a simple exchange economy without production.

The guiding question is fundamentally different from the one posed by Smith and Marx. The latter ask how the spontaneous interaction by independent producers results in proportionate social production facilitated through exchange. Instead, neoclassicals start from the question how a Walrasian equilibrium can result from the exchange between independent individuals that bring their endowments to the market. That is, how can a market with given products clear such as to bring the greatest satisfaction to all traders.

Already Menger demonstrates that pure direct barter will not exhaust the opportunities for advantageous trade. "Even in the relatively simple and so often recurring case," he writes "where an economic unit, A, requires a commodity possessed by B, and B requires one possessed by C, while C wants one that is owned by A—even here, under a rule of mere barter [i.e. direct barter], the exchange of the goods in question would as a rule be of necessity left undone." (Menger 2009: 20) However, "indirect barter completed by arbitrage" even though being a "cumbrous type of organisation" can result in a Walrasian equilibrium with "tax" (Hicks 1967: 5-6).

But "[t]here is the same incentive to find ways of reducing transaction costs as of reducing other costs." (Hicks 1967: 7) Therefore, in the tradition of Menger, Hicks, too, 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: 7) The use of money does not alter the role of exchange in the organisation of social production. Money is merely something that renders exchange that would have happened anyway less costly. By separating the analysis of exchange from the analysis of production, the qualitative shift from diversified to specialised production that emerges as exchange generalises and money arises is entirely overlooked.

Money appears to be neutral and the qualitative difference between a barter and a monetary economy is entirely dismissed. As Schumpeter summarises:

> *Money enters the picture only in the modest role of a technical device that has been adopted in order to facilitate transactions…so long as it functions normally, it does not affect the economic process, which behaves in the same way as it would in a barter economy: this is essentially what the concept of Neutral Money implies. Thus money has been called a 'garb' or 'veil' of the things that really matter…Not only can it be discarded whenever we are analyzing the fundamental features of the economic process but it must be discarded just as a veil must be drawn aside if we are to see the face behind it.* (Schumpeter 2006 [1954]: 264)

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

From the point of view of the framework derived from Smith, the neutrality of money is a fundamental fallacy. If money were to arise in a situation of diversified production it would create sufficient "certainty of being able to exchange". And this would in turn result in specialisation due to the higher productivity and ultimately higher enjoyments of specialised producers. Therefore, the barter metaphor collapses. Barter cannot be the system of exchange if producers are specialised. Barter can only be the system of exchange among diversified producers. In such a situation, if one product functions as money and monopolises exchange, producers will tend to specialise due to self-enhancing increasing returns to scale. Hence, money can never be neutral. A monetary economy is fundamentally 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.

However, this finding relies on Smith's assumption that every producer is independent and free to decide whether to specialise or to diversify. This is subject to Marx's critique. He writes in his introduction to the Grundrisse: "The individual and isolated hunter or fisherman, with whom Smith and Ricardo begin, belongs among the unimaginative conceits of the eighteenth-century Robinsonades." Instead "[i]ndividuals producing in society – hence socially determined individual production – is, of course, the point of departure." (1993 [1939]: 83)

If we allow for this shift in perspective, specialisation is conditioned not only on Smith's requirement of certainty of exchange but also on "the dissolution of all fixed personal (historic) relations of dependence in production. (…) Prices are old; exchange also; but the increasing determination of the former by costs of production, as well as the increasing dominance of the latter over all relations of production, only develop fully, and continue to develop ever more completely, in bourgeois society, the society of free competition." (Marx 1993: 156)

As long as social status directly assigns individuals their position in the diversified production of the social community, money may be confined to facilitating exchange at the edges with other communities without a shift towards specialisation. Social and legal constraints prevent this change in the mode of production. Money is being *neutralised* by the norms and practices of pre-capitalist society. Therefore, money can only be "neutral" as long as the neoclassical core assumption of independent individuals is not fulfilled, as long as individuals have not yet been "liberated" from their traditional ties in society.

The neoclassical paradigm of the neutrality of money collapses from a Smithian perspective, once we do not separate exchange from production. From Marx's point of view, the idea of monetary neutrality might – if at all – apply to a pre-capitalist, feudal society.

2.7. Summing up Smith

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?* Yes, says Smith, but it is a highly unstable situation that must either lead back to diversification or to a monetary economy with specialised producers.

The state of diversification is stable as long as exchange is "clogged and embarrassed in its operation" (Smith 1999: 126) by the absence of money (or – as Marx adds – by social convention). If this is the case producers will diversify whereas diversification will be self-enhancing due to two factors. First, in the sphere of production fixed costs are negligible as a result of diversification and returns to scale are decreasing which intensifies the drive towards diversification. Second, in the sphere of exchange, as other producers decide to diversify, the extent of the market becomes limited and exchange even more uncertain. This adds to the incentive to diversify.

If however, in a situation of diversified production, money arises as common instrument of commerce and social conventions limiting the independence of exchange and production deteriorate, the diversified producers tend to specialise. Specialisation is in the same way self-reinforcing as diversification. Specialisation gives rise to positive fixed costs and increasing returns, which add to the incentive to specialise from the perspective of production. Specialisation of some producers again increases the extent of the market for all others, which increases the certainty of exchange. Specialised production persists as a stable state as long as exchange is smooth thanks to money functioning as a universal mean of commerce.

Overall, costs of production provide an incentive towards specialisation, since specialisation increases productivity. The need of reproduction, on the contrary, triggers a return to diversification if exchange tends to fail. Once the economy has moved either towards money and specialisation or barter and diversification there will be a strong tendency to continue on the respective paths due to strategic complementarities.

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

> *[I]n the commodity-capitalist economy, production-work relations among people necessarily acquire the form of the value of things, and can appear only in this material form; social labour can only be expressed in value. Here 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. The transactions of market exchange are then the necessary consequences of the internal structure of the society; they are one of the aspects of the social process of production.* (Rubin 2008 [1928]: 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 economy in which labour is socially divided and social production is organised by exchange but in which there is no money, is clearly no. It is based on his logical analysis of the rise of a commodity economy. He also avoids the contradiction that we found in Smith. In Marx's view, there cannot be a moneyless commodity economy, whereas commodity economy is defined as an economy that organises social production by exchange:

> *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: 146)

Whereas Smith abstracts from the question of value in his analysis of the relation between division of labour, exchange and money, the objectification of labour as value in money is at the heart of Marx's theory of money.[7] Marx brings together Smith's concept of value and Smith's theory of the origin of money. As Foley (1983: 5) remarks, "Marx follows Smith in regarding value as the property of exchangeability." But Marx goes beyond Smith in his theory of money when he establishes that "money is a form of value" (ibid.).

Our representation of Marx's theory of money is guided by his answers to the three questions cited in the introduction. We show how Marx demonstrates first, why in his view private labour – labour for the account of private individuals – cannot be treated as its opposite, immediate social labour; second, why, given the production of commodities, products must take the form of commodities, and third, why money does not directly

[7] 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: 293)

represent labour-time (Marx 1992: 97). The goal is to understand why in Marx's theoretical framework commodity production can only arise together with money.

According to Marx a situation in which social production is organised by exchange and labour is socially divided, but where there is no money, can only be forced upon an economy politically. But it can never persist. This situation is precisely what 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, when he discusses his three questions in the *Grundrisse* (1993 [1939]), the *Contribution to the Critique of Political Economy* (1904) and the First Part of *Capital Volume One* (1992 [1887]).

For Smith, a barter economy is the point of comparison, a system with division of labour, specialisation and exchange but without money. In contrast, the attempt to abolish money and introduce time chits provides the context for Marx's thought experiment. What Marx intends to explain 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: xv). Marx prefigures the conclusion at which Keynes arrives in his *General Theory* (ibid.). "Abolish money and don't abolish money!" exclaims Marx (1993: 127). "We cannot get rid of money even by abolishing gold and silver and legal tender instruments" finds Keynes (1997: 294). Marx argues that if the relations of production, i.e. specialisation, division of labour and general exchange, remain unchanged, the abolition of money will only cause the rise of money anew. Hence the barter situation will be an unstable equilibrium as in Smith.

3.1. What goes on behind the backs of the producers?

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

"The different proportions in which different sorts of labour are reduced to unskilled labour as their standard, are established by a social process that goes on behind the backs of the producers." (Marx 1992: 51-2)

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: 15) Money represents value. 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: 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. 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: 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: 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: 168)

The following two aspects regarding the role of money in the metamorphosis of commodities underlie persistent misunderstandings: First, "[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: 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: 125). But "[i]t is not necessary for us to seek a practical standard of value which would make *possible* the equalisation of the products of labour on the market. 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." (ibid.)

The second aspect 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: 351). This is, however, a fundamental fallacy. Monetary exchange is the method of *measuring value*. But commodities are commensurable because they *have value*. As products of social labour commodities have a qualitative commonality. Money is the means to express their quantitative relation regarding this common qualitative dimension (Marx 1992: 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 sise is a priori common to heterogeneous things. The dimension of sise is the precondition, not the result of measuring."[8] (ibid.)

Only in an economy, where the community organises social production consciously as a whole individual labour would immediately enter production as social, general labour and money would become superfluous (Marx 1993: 171-3). But if 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 as a commodity, 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. How social production is mediated in monetary exchange is the subject of the subsequent section.

3.2. Proportionality through disproportionality

Why does not money 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: 139)

From the answer to our first question we have already learned that labour time cannot directly be money, since labour is always concrete private labour and can only be transformed into abstract social labour through monetary exchange. We have also seen that "money comes to stand in opposition to particular commodities" (Foley 1983: 7). Therefore,

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

"we can conceive of a difference between value and price. Price is the amount of money that a commodity commands in a particular situation. Value is the amount of labour time embodied in a particular commodity." (ibid.) The regulation of social production through exchange requires the possibility of deviation between value and price. This is a second reason why money cannot directly represent labour time.

"Adam Smith says that labour (labour time) is the original money with which all commodities are purchased."[9] Marx explicates an important restriction: "As regards the act of production, this always remains true (…). In production, every commodity is continuously exchanged for labour time." (Marx 1993: 167) 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: 77).

From the perspective of Smith's isolated individual producer all her products are immediately "bought" by her own labour time. But even in this "early and rude state" of the simple commodity economy the distribution of social labour over the different industrial branches requires the possibility of a deviation between value and money price. Only "[t]he state of equilibrium between two branches of production corresponds to the exchange of products on the basis of their values" (Rubin 2008: 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

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

becomes entirely secondary" (Marx 1993: 153). This is because if production is given as proportionate, i.e. if social labour is assumed to be 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 the deviation between value and price, which is founded on the difference between labour time and money. "[E]very deviation of production", summarises Rubin, "provokes forces which put a stop to the deviation in the given direction, and give birth to movements in the opposite direction. Excessive expansion of production 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: 77-8) It is this regulation through deviation that leads to an approximate proportionality of social production.

The underlying process is equalisation of profits to be distinguished from the state of equal profits. For the sake of simplicity let us stay in the realm of the simple commodity economy where independent producers seek the highest reward to their labour abstracting from different organic compositions of capital.[10] The value of a commodity would hence be equal to the labour time required in production. If the market price is above the value in a certain sector, i.e. demand for this particular commodity is above supply, producers will generate an excess profit above the average profit rate. This will attract producers from sectors where the market price is below or equal to the value to migrate into the sector where excess profits can be generated. The consequent increase in supply and competition in

[10] Note that the argument can be extended to different organic compositions if we replace values by prices of production.

the latter sector will bring down the market prices, potentially even below the value. The opposite will happen in the sector in which market prices where initially below the value.

However, the economy will never settle down in a state of equal profits where market price and value coincide permanently. "Since individual commodity producers are autonomous in the management of production, the exact repetition and reproduction of an already given process of social production is completely impossible. Since the actions of the separate commodity producers are not connected or constant, daily deviations in the direction of excessive expansion or contraction of production are inevitable." (Rubin 2008: 77) The equalisation of profits can only be achieved through deviation of profits from the average rate. Proportionality can only be established on average through disproportionality. As Marx puts it in the Grundrisse: "Market value equates itself with real value by means of its constant oscillations, never by means of an equation with real value as if the latter were a third party, but rather by means of constant non-equation of itself". (1993: 137)

Therefore Rubin comes to the conclusion: "Total agreement between market price and value 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: 78) It is this deviation between market price and magnitude of value that "adapts the price-form to a mode of production" (Marx 1992: 104). This is why if social production is regulated by exchange, there must be a form of money that is different from labour time to make the deviation between market price and value possible.

Because the deviation between value and market price is the regulator of the social distribution of labour by independent exchange this deviation must prevail as a potentiality as long as labour is divided and social production is organised this way. Therefore, 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: 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: 138, emphasis added)

If the contradiction between price and value could be removed by the substitution of money with time chits, a commodity economy would constantly be in equilibrium without the possibility of disturbances or crisis. However, such an equilibrium is strategically 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 analogue 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 deviation independent of the nomination of the monetary unit and thereby break the forced equation of value and price.[11] Or, for example legal constraints prevent the

[11] 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

deviation 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 any direct social organisation of production is established, specialised producers who cannot satisfy their needs on the market will start to diversify their production and the commodity producing economy collapses.

3.3. Excursus: Neoclassical market clearing equilibrium as point of breakdown

From this perspective, the neoclassical market clearing equilibrium is a state that would lead to the breakdown of the market economy. This state corresponds to Keynes' characterisation of the special case of neoclassical economics, against which he advances his "General Theory" intended for the *general* case (1997 [1936]: 3). Keynes argues "that the postulates of the classical theory are applicable to a *special* case only and not to the general case, the situation which it assumes being a limiting point of the possible positions of equilibrium." (ibid., emphasis added) In contrast, in the context of Marx's theory, the economy can never settle in a state of market clearing equilibrium.

Keynes finds the classical economists (which in his definition includes neoclassicals) "primarily concerned with the *distribution* of a *given* volume of employed resources between different uses" (1997: 4). As we have seen in our discussion of the neoclassical interpretation of the origin of money, the primary focus on exchange does limit the analysis to a *given* volume of resources. However, the state of equilibrium corresponds to a state without regulating price signals to the profit-seeking producers. The assumption of zero economic profit in marginalist analysis can be translated as zero excess profits of all individual

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: 139) This might allow some conclusions on his thinking about non-material money other than the frequently cited passages pointing to the possibility of paper money since gold – or any other money commodity – does not need to be physically present to deliver the material expression of exchange value.

producers in the language employed above. The accounting profit in turn corresponds to the average profit. All producers maximise their profit and receive zero economic profit regardless of the sector of production.

There will be *no* signals to regulate the *distribution* of resources between different uses. Therefore there is no process of social distribution of resources among sectors. For all producers to receive the same profit the distribution must already be socially optimal. The concern of neoclassical analysis is whether such a state exists, not how the spontaneous interaction of independent producers results in this state. Marx tells us, that the commodity economy only enters this state by accident in passing. If the commodity producing economy would settle in such a state without regulating deviations, it would break down.

3.4. Money as manifestation not as source of the contradiction between use and exchange value

Why given the production of commodities, must products take the form of commodities?

> *No one can sell unless some one else purchases. But no one is forthwith bound to purchase, because he has just sold. Circulation bursts through all restrictions as to time, place, and individuals, imposed by direct barter, and this it effects by splitting up, into the antithesis of a sale and a purchase, the direct identity that in barter does exist between the alienation of one's own and the acquisition of some other man's product. (…) The antithesis, use-value and value; the contradictions that private labour is bound to manifest itself as direct social labour, that a particularised concrete kind of labour has to pass for abstract human labour; (…) all these antitheses and contradictions, which are immanent in commodities, assert themselves, and develop their modes of motion, in the antithetical phases of the metamorphosis of a commodity.* (Marx 1992: 115)

The necessity of money in a commodity economy touches upon the relation of social division of labour and exchange as discussed with regard to Smith. As we have seen, a potential deviation between exchange value and market price must persist for money to facilitate the regulation of social production through exchange and to signal the need for reallocation of labour. At the same time, the contradiction of use value and exchange value comes to the front if we consider money as the facilitator of exchange emphasised in our interpretation of Smith.

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]: 150) and 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: 146)

This externality of the exchange relation 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. The same illusion underlies other theories that seek to explain crisis purely from monetary relations.

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: 147) It is this possibility of non-convertibility that gives rise to money instead of money causing the possibility of non-convertibility.

4. Conclusion

We have seen that both in Smith and in Marx the monetary economy is fundamentally different from a moneyless economy. Our reading of Marx's labour theory of value based on Rubin and Foley suggests that it is primarily a theory of the regulation of social production. Value is the central regulator. Money represents value in exchange and facilitates the social regulation of production. If there is no money, the proportionality of production must be directly regulated. One way is that individual producers or production units diversify their production and provide for their own needs. In this case, exchange plays only an ancillary role and is irrelevant for the coordination of social production. Producers only exchange what is left over after they have satisfied their needs. Prices are determined by scarcity and desire rather than by the costs of production. This corresponds to the set up of the neoclassical exchange economy. Another way is that some form of government entity directly regulates the proportionality of production on the social level. In this case, too, money loses its regulating function and is reduced to a unit of account.

But if we are in an economy without direct control over social production the spontaneous interaction of specialised producers must be regulated by monetary exchange. Rubin writes "[t]he exchange of goods influences the working activity of people; production and exchange represent inseparably linked, although specific, components of reproduction." He continues by quoting Marx as saying "[t]he capitalist process of production taken as a whole represents a synthesis of the processes of production and circulation." (2008: 9) We can add that money as representation of value is the synthesising element between production and circulation. Vast parts of 20th century literature in Marxian and classical economics is primarily focused on production and interprets the labour theory of value as a production cost theory of prices. The marginalist tradition on the other hand, has been focused on exchange and a subjective theory of value. Both tend to treat the theory of value and the theory of money as distinct subjects and end up overlooking the regulating function of money (Backhaus 1997: 347-8).

The core of Marx's commodity theory of money is not that money is a physical and produced good. The core is that money represents the general commodity in terms of general exchangeability. The task of a theory of money is to understand its dual role in relation to production and to exchange. "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: 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 practice of exchange. By being generally accepted in exchange, all commodities identify their value with money.

Money is the "Aufhebung" in the Hegelian sense of the contraction between use value and exchange value. Money must both cancel and maintain this contraction in order to be money. It is the constant deviation between price and value which regulates social production through monetary exchange. Proportionality can only be established on average through disproportionality. Money must be externalised value in order to confront commodities with their exchangeability and to transform the labour expanded in their production into abstract, social labour.

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