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# Smith's "Perfect Liberty" and Marx's Equalized Rate of Surplus Value

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## Abstract

Situating Marx's theory of surplus value in the long-period method reveals that Marx's use of an equalized rate of surplus-value across sectors of production in *Capital* is not merely a convenient assumption. The equalization of the sectoral rate of surplus value is a central tendency of capitalism, and is elevated to the level of an economic law by Marx. The reasoning behind Marx's use of this equalized rate is the mobility of labor found in Adam Smith, and reveals that the rate of surplus value is subject to similar dynamics as the rate of profit.

**Keywords:** Karl Marx; Long-Period Method; Rate of Surplus Value; Mobility of Labor; Adam Smith.

**JEL Classification Numbers:** B14, B24, B51.

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# 1 Introduction

Karl Marx's theory of surplus value is a central aspect of his contributions to the theory of value found in the work of Adam Smith and David Ricardo. The basic argument of Marx's theory of surplus value is that capitalist society requires workers to work longer than necessary to reproduce themselves. The extra time worked produces surplus value that is appropriated by the capitalist class. The ratio of the surplus value appropriated by capitalists ( $s$ ) to the value workers receive for their own reproduction ( $v$ ) is the rate of surplus value ( $s/v$ ), which provides a summary of the conditions of labor in capitalist society.<sup>1</sup> Marx places the creation of surplus value at the heart of capitalist society, and emphasizes the role that surplus value plays in the overall dynamics and reproduction of the capitalist system. However, the importance of surplus value is not always immediately apparent, and is often overlooked in the existing literature.

The clearest context in which to consider Marx's theory of value and, specifically, the extent to which surplus value is central his analysis is the long-period method (Garegnani 1970, 1976, 1984). The key characteristic of the long-period method is its focus upon the 'self-organizing character' (Foley 2003: 1) of a society in which a sufficiently long period of time is considered, and labor and capital (the inputs of production) are mobile across spheres of production. These conditions are characterized by Smith as the conditions of 'perfect liberty,' and, for Marx, they are necessary conditions for the manifestation of his 'economic laws.' The key insights of the long-period method, and Marx's use of it, follow from this mobility and lead to consideration of the tendencies for the rate of profit and rate of surplus value to turbulently, and independently, tend toward equalization across sectors of production. However, the rates of profit and surplus value do not settle at their respective equalized rates. Instead, the upward and downward movements of the rates of profit and surplus value across sectors never cease, thus the equalized rates of surplus value and profit emerge as centers of gravity for these fluctuations.

The long-period method allows for important insights when considering Marx's use of an equalized rate of surplus value across sectors of production in volume three of *Capital*. Marx's treatment of the rate of surplus value in volume three of *Capital* is often taken to be an assumption that paves the way to his analysis of the equalization of the rate of profit across sectors and the formation of prices of production.<sup>2</sup> However, the equalized rate of

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<sup>1</sup>'The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the worker by the capitalist' (Marx 1976: 326).

<sup>2</sup>Robinson considers Marx's use of an equalized rate of surplus value as a case in which 'pure assertion is masquerading as argument, for we have nothing but Marx's bare word for it that the *value* generated per unit of labour is the same in each industry' (Robinson 1950:

surplus-value is much more than a convenient assumption. The turbulent equalization of sectoral rates of surplus-value is in fact one of the central tendencies of Marx's framework, and is elevated by Marx to the same level as other 'economic laws' (Marx 1981: 275).

Marx's use of an equalized rate of surplus value has been recognized in much of the literature concerning the theory of value and the transformation problem. However, its origin has not been fully traced out, and its importance is often glossed over.<sup>3</sup> Even recent contributions to the literature on Marx's theory of value and the transformation problem do not give due attention to this aspect of Marx's theory. Some approaches treat the rate of surplus value as being determined for the economy as a whole without focusing on its dynamics across sectors.<sup>4</sup> Other approaches do not deal with the status of the equalized rate of surplus value in Marx's theory of value, while acknowledging the difficulties in directly observing exploitation.<sup>5</sup> There are also those who see the independently equalized rates of surplus value and profit as symbolic of 'members of one class' being equal 'in their confrontation with members of their own class' (Lipietz 1982: 85). The focus of value theory debates on the formation of prices of production, equalization of the profit rate, and the tenability of conserving price magnitudes (as measured in money) and values (as measured in units of labor time) shifts attention away from the dynamics of the rate of surplus value. This leaves a gap in the literature which this paper aims to fill by tracing out the origins of Marx's use of an equalized rate of surplus value, and discussing its importance to Marx's theory of value.

Much of the reasoning for Marx's use of an equalized rate of surplus value and its elevation to the level of an economic law can be traced to his acceptance of the mobility of producers (for Marx, workers) inherent in Smith's 'early and rude state of society.' Treating this equalized rate as one of capitalism's central tendencies, and recognizing the influence of Smith in

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360). In Seton's mind the 'assumption of equal "rates of exploitation" in all departments has never to [his] knowledge been justified' (Seton 1957: 160). Bowles and Gintis put forth a view that claims there is no need for rates of surplus value to equalize across sectors, and that it is 'in no way required by historical materialism' (Bowles and Gintis 1977: 176). Samuelson goes so far as to assert that Marx's use of an equalized rate of surplus value is 'like a made-up nursery tale, of no particular relevance to the ascertainable facts of the simple competitive model' (Samuelson 1957: 890), a 'bizarre empirical hypothesis' (Samuelson 1971: 419), and that the focus on surplus value and value in general is an unnecessary detour (Samuelson 1974: 63).

<sup>3</sup>Morishima (1973), for example, is a major contribution to the discourse on Marx's theory of value, which recognizes the equalization of the rate of surplus value in Marx's work, but does not fully trace out its origins or significance (Morishima 1973: 51-52). Baumol also recognizes the role of the equalized rate of surplus value in Marx's work, but only briefly treats how it manifests through the movement of laborers across industries (Baumol 1974: 55).

<sup>4</sup>Examples of this type of approach can be found in Moseley (2000) and Weeks (2010).

<sup>5</sup>See Mohun (1993, 2004).

its development, holds ramifications for issues of complex labor, treatment of the transformation problem, and Marx's theory of value in general. These ramifications become clear when Marx is read as a long-period theorist with a nuanced understanding of his Classical predecessors, and when the sectoral rate of surplus value is seen as being subject to the same turbulent dynamics and equalization process as the rate of profit. Furthermore, the equalization process of the rate of surplus-value across sectors needs to be held as equally important as the equalization of sectoral profit rates in order to properly apply Marx's vision.

These arguments are built and presented as follows. Section 2 of this paper discusses how the long-period method's use of perfectly mobile labor and capital provides the necessary tools to demonstrate the logic behind Marx's elevation of the equalized sectoral rate of surplus-value to the level of an economic law. This section also shows how Marx's adoption of the mobility of labor across sectors has its roots in the work of Adam Smith. Section 3 highlights the perfect mobility of labor in Marx's theory of value and his long-period method, and properly places the turbulently equalizing rate of surplus-value at the highest order of abstraction in Marx's framework. Section 4 discusses Marx's adoption of the mobility of labor from Smith and supports the argument that Marx fully adopts Smith's vision of mobile labor found in the abstraction of the 'early and rude state of society.' Section 5 shows how taking the developments in the previous sections into consideration with the 'New Interpretation' of Duménil (1980, 1983) and Foley (1982, 1986) leads to a different perspective on the transformation problem and possible computations of value and surplus value production at the sectoral level. Section 6 provides concluding remarks.

## 2 Marx's Long-Period Method

### 2.1 Structure of Marx's LPM

The long-period method's use of mobile labor and capital abstracts from any impedances or market frictions that may exist in reality in order to best represent what Marx considers capitalism's pure, or ideal, form in which the inner laws and tendencies of capitalism can be revealed and considered independent of surface appearances and everyday movements (Marx 1981: 291):

The real inner laws of capitalist production clearly cannot be explained in terms of the interaction of demand and supply (not to mention the deeper analysis of these two social driving forces which we do not intend to give here), since these laws are realized in their pure form only when demand and supply cease to operate, i.e. when they coincide.

In actual fact, demand and supply never coincide, or, if they do so, it is only by chance and not to be taken into account for scientific purposes; it should be considered as not having happened. Why then does political economy assume that they do coincide? In order to treat the phenomena it deals with in their law-like form, the form that corresponds to their concept, i.e. to consider them independently of the appearance produced by the movement of demand and supply. And, in addition, in order to discover the real tendency of their movement and to define it to a certain extent (Marx 1981: 291).

The method of abstraction inherent in the above passage is consistent in Marx's method of political economy because 'microscopes' and 'chemical reagents' are unavailable when confronting economic topics, and the 'power of abstraction' is the necessary tool to tackle the complex motions of capitalist society (Marx 1976: 90). To uncover the real tendencies and motions of capitalism one must abstract from the most concrete aspects of the world in order to arrive at the underlying determinants driving reality. Marx endorses this approach in his introduction to the *Grundrisse*:

It seems to be correct begin with the real and the concrete, with the real precondition, thus to begin, in economics, with e.g. the population, which is the foundation and the subject of the entire social act of production. However, on close examination this proves false. The population is an abstraction if I leave out, for example, the classes of which it is composed. These classes in turn are an empty phrase if I am not familiar with the elements on which they rest. E.g. wage labour, capital, etc. For example, capital is nothing without wage labour, without value, money, price etc. Thus, if I were to begin with the population, this would be a chaotic conception of the whole, and I would then, by means of further determination, move analytically towards ever more simple concepts, from the imagined concrete towards ever thinner abstractions until I had arrived at the simplest determinations. From there the journey would have to be retraced until I had finally arrived at the population again, but this time not as the chaotic conception of a whole, but as a rich totality of many determinations and relations (Marx 1973: 100).

The long-period method's consideration of mobile labor and capital is the type of abstraction Marx describes in the above passages, and the abstraction Marx himself makes when considering the long-period tendencies and motions of capitalist society. Marx presents the mobility of labor and capital for his long-period method as the two following conditions:

... (1) the more mobile capital is, i.e. the more easily it can be transferred from one sphere and one place to others; (2) the more rapidly

labour-power can be moved from one sphere to another and from one local point of production to another (Marx 1981: 298).

Condition (1) is the mobility of capital, and condition (2) is the mobility of labor. The more labor and capital approach perfect mobility, the more closely capitalism resembles its ideal form, which corresponds to its ‘concept’ in Marx’s view (Marx 1981: 291). These conditions are a key part of Marx’s long-period method that he employs to reveal capitalism’s central tendencies.

In order to arrive at the mobility of capital, ‘completely free trade within the society in question and the abolition of all monopolies other than natural ones, i.e. those arising from the capitalist mode of production itself’ is required (Marx 1981: 298). Going hand-in-hand with completely free trade (meaning exchange), the mobility of capital implies that capital is indifferent to the types of commodities it produces, and ‘All that matters in any sphere of production is to produce surplus-value, to appropriate a definite quantity of unpaid labour in labour’s product’ (Marx 1981: 297). The mobility of capital and competition among capitalists lead to the tendency for the turbulent equalization of the profit rate across sectors:

If commodities were sold at their values, however, this would mean very different rates of profit in the different spheres of production, as we have already explained, according to the differing organic composition of the masses of capital applied. Capital withdraws from a sphere with a low rate of profit and wends its way to others that yield higher profit. This constant migration, the distribution of capital between the different spheres according to where the profit rate is rising and where it is falling, is what produces a relationship between supply and demand such that the average profit is the same in the various different spheres, and values are therefore transformed into prices of production. Capital arrives at this equalization to a greater or lesser extent, according to how advanced capitalist development is in a given national society: i.e. the more the conditions in the country in question are adapted to the capitalist mode of production. As capitalist production advances, so also do its requirements become more extensive, and it subjects all the social preconditions that frame the production process to its specific character and immanent laws (Marx 1981: 297-298).

Hence, the tendency for the profit rate to equalize across sectors is an expression of the mobility of capital and the desire to realize profit that is shared by all capitalists.

The other side of Marx’s long-period method is the mobility of labor, which requires:

...the abolition of all laws that prevent workers from moving from one sphere of production to another or from one local seat of production

to any other. Indifference of the worker to the content of his work. Greatest possible reduction of work in all spheres of production to simple labour. Disappearance of all prejudices of trade and craft among the workers. Finally and especially, the subjection of the worker to the capitalist mode of production (Marx 1981: 298).

The mobility of labor across spheres of production produces the tendency for the rate of surplus value to turbulently equalize across sectors, and Marx holds this tendency to be an economic law:

If capitals that set in motion unequal quantities of living labour produce unequal amounts of surplus-value, this assumes that the level of exploitation of labour, or the rate of surplus-value, is the same, at least to a certain extent, or that the distinctions that exist here are balanced out by real or imaginary (conventional) grounds of compensation. This assumes competition among the workers, and an equalization that takes place by their constant migration between one sphere of production and another. We assume a general rate of surplus-value of this kind, as a tendency, like all economic laws, and as a theoretical simplification; but in any case this is in practice an actual presupposition of the capitalist mode of production, even if inhibited to a greater or lesser extent by practical frictions that produce more or less significant local differences, such as the settlement laws for agricultural labourers in England, for example. In theory, we assume that the laws of the capitalist mode of production develop in their pure form. In reality, this is only an approximation; but the approximation is all the more exact, the more the capitalist mode of production is developed and the less it is adulterated by survivals of earlier economic conditions with which it is amalgamated (Marx 1981: 275).

The mobility of capital and labor, as outlined by Marx, follow the need to abstract from everyday frictions to consider the real, or underlying, movements of capitalism. Marx's abstraction in which one bears witness to capitalism's pure motions also requires consideration of a sufficient length of time so that the laws of capitalism can be seen as the 'outcome of a whole series of protracted oscillations, which require a good deal of time before they are consolidated and balanced out' (Marx 1981: 266). The consideration of a sufficiently long period of time and the mobility of labor and capital present the key elements of Marx's long-period method. Through his long-period method, Marx reveals the tendency for the rates of profit and surplus value to turbulently equalize across sectors as two separate and distinct tendencies. The context of the long-period method proves crucial to understand how the rate of surplus value tends to equalize across sectors in a similar fashion to the rate of profit, and should be taken as an economic law.

## 2.2 Equalization of the Rate of Surplus-Value

The argument behind the mobility of labor producing a tendentially equalized rate of surplus value is that, if labor is mobile between sectors, then it is able to adapt and adjust to changes in professions over long periods of time, or it is ‘fungible’ (Foley 2005: 40)(Foley 2011b: 16-18, 24-28). As the conditions of the workplace undergo constant change, and as demand for labor waxes and wanes in the different sectors of the economy, the movement of laborers between the sectors will turbulently balance out the wage rate and erode all differences in the skills of workers. This mobility of labor produces the turbulent equalization of the rate of surplus-value across sectors, which Marx adheres to rather strictly:

Other distinctions, for instance in the level of wages, depend to a large measure on the distinction between simple and complex labour that was mentioned already in the first chapter of Volume 1, p.135, and although they make the lot of the workers in different spheres of production very unequal, they in no way affect the degree of exploitation of labour in these various spheres. If the work of a goldsmith is paid at a higher rate than that of a day-labourer, for example, the former’s surplus labour also produces a correspondingly greater surplus-value than does that of the latter. And even though the equalization of wages and working hours between one sphere of production and another, or between different capitals invested in the same sphere of production, comes up against all kinds of local obstacles, the advance of capitalist production and the progressive subordination of all economic relations to this mode of production tends nevertheless to bring this process to fruition. Important as the study of frictions of this kind is for any specialist work on wages, they are still accidental and inessential as far as the general investigation of capitalist production is concerned and can therefore be ignored. In a general analysis of the present kind, it is assumed throughout that actual conditions correspond to their concept, or, and this amounts to the same thing, actual conditions are depicted only in so far as they express their own general type (Marx 1981: 241-242).

The passage above clearly demonstrates that Marx saw a tendency for the turbulent equalization of the rate of surplus value as part of the ‘general investigation of capitalist production,’ and differences in the complexity (productivity) of workers are not immediately important to his analysis (Marx 1981: 242).<sup>6</sup> While he acknowledges that laborers of varying complexities may receive different wages, he asserts that the rate of surplus value still

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<sup>6</sup>An argument that runs counter to this point of view can be found in the recent work of Dong-Min Rieu. Rieu asserts that the measurement of sectoral rates of surplus value is a necessary development for Marxian value theory so that the way in which different concrete labors translate into socially necessary abstract labor can be better understood.

turbulently equalizes across sectors. The complexity of the labor makes no difference in the rate of surplus value of the particular sphere of production. If labor is far more complex than the social average and receives a high wage accordingly, the surplus value that this labor produces is ‘correspondingly greater’ than the surplus value produced by the social average (Marx 1981: 241).<sup>7</sup> However, in spite of these differences in the complexity of labor that may exist, the ongoing movements and development of capitalism will inevitably cause the tendency of the equalization of wages and working hours across spheres of production to exert itself. Thus, Marx deems it necessary to employ an equalized rate of surplus value across sectors because it pertains to the general conditions of capitalism that are the focus of his investigation.

To explain the occurrence of both the equalization of the rate of surplus value and labor market dynamics, Marx briefly refers to a lengthy explanation from his predecessor Smith:

As far as the many variations in the exploitation of labour between different spheres of production are concerned, Adam Smith has already shown fully enough how they cancel one another out through all kinds of compensations, either real or accepted by prejudice, and how therefore they need not be taken into account in investigating the general conditions, as they are only apparent and evanescent (Marx 1981: 241).

Marx sees no need to go into full detail regarding the factors that account for all observed differences in wages and strip laborers of any uniqueness reducing all labor to a common level. He feels that Smith’s elucidation of these forces

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However, the main arguments of this paper focus on the long-period tendency of the rate of surplus value as opposed to focusing on concrete measurements that reveal ongoing labor market frictions. See Rieu (2008, 2009) for further explanation of Rieu’s perspective, and Duménil, Foley, and Lévy (2009) for more discussion on Rieu’s points.

<sup>7</sup>This view is consistent throughout Marx’s writing in *Capital*: ‘We stated on a previous page that in the valorization process it does not in the least matter whether the labour appropriated by the capitalist is simple labour of average social quality, or more complex labour, labour with a higher specific gravity as it were. All labour of a higher, or more complicated, character than average labour is expenditure of labour-power of a more costly kind, labour-power whose production has cost more time and labour than unskilled or simple labour-power, and which therefore has a higher value. This power being of higher value, it expresses itself in labour of a higher sort, and therefore becomes objectified during an equal amount of time, in proportionally higher values. Whatever difference in skill there may be between the labour of a spinner and that of a jeweller, the portion of his labour by which the jeweller merely replaces the value of his own labour-power does not in any way differ in quality from the additional portion by which he creates surplus-value. In both cases, the surplus-value results only from a quantitative excess of labour, from the lengthening of one and the same labour-process: in the one case, the process of making jewels, in the other, the process of making yarn. . . But, on the other hand, in every process of creating value the reduction of the higher type of labour to average social labour, for instance one day of the former to  $x$  days of the latter, is unavoidable’ (Marx 1976: 304-306).

is complete enough and can be used as support for the use of an equalized rate of surplus value throughout his further analysis. To understand why Marx held Smith's explanation in such high regard, one can turn to Chapter Ten of *The Wealth of Nations*.

### 2.3 Roots of the Equalizing Rate of Surplus-Value

Chapter Ten of *The Wealth of Nations* begins, 'The whole of the advantages and disadvantages of the different employments of labour and stock must, in the same neighbourhood, be either perfectly equal or continually tending to equality' (Smith 2000: 114). Thinking in terms of constant oscillations around centers of gravity is a consistent thread through the Classical Political Economy of Smith, Ricardo and Marx, and characterizes them as long-period theorists.<sup>8</sup> Ricardo and Marx describe underlying currents or turbulent equalizations in a similar way as Smith:

If in the same neighbourhood, there was any employment evidently either more or less advantageous than the rest, so many people would crowd into it in the one case, and so many would desert it in the other, that its advantages would soon return to the level of other employments. This at least would be the case in a society where things were left to follow their natural course, where there was perfect liberty, and where every man was perfectly free both to chuse what occupation he thought proper, and to change it as often as he thought proper. Every man's interest would prompt him to seek the advantageous, and to shun the disadvantageous employment (Smith 2000: 114).

Smith can, however, be credited with laying the foundation for Ricardo and Marx, and providing the full descriptive theory for the determinants of the ebb and flow of wages and working conditions that led Marx to think in terms of an equalized rate of surplus value.

Smith cites five causes to explain wage differentials that may be observed at any moment while the equalization of all of the advantages and disadvantages of labor is taking place. The first cause is 'the ease or hardship, the cleanliness or dirtiness, the honourableness or dishonourableness of the employment' (Smith 2000: 115).<sup>9</sup> The second is 'the easiness and cheapness, or the difficulty and expence of learning the business' (Smith 2000: 116).

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<sup>8</sup>See Ricardo (1951), Ch. 4 for more examples of this line of thinking.

<sup>9</sup>'Thus in most places, take the year round, a journeyman taylor earns less than a journeyman weaver. His work is much easier. A journeyman weaver earns less than a journeyman smith. His work is not always easier, but it is much cleaner. A journeyman blacksmith, though an artificer, seldom earns so much in twelve hours as a collier, who is only a labourer, does in eight...The most detestable of all employments, that of public executioner, is, in proportion to the quantity of work done, better paid than any common trade whatever' (Smith 2000: 115-116).

This second cause parallels Marx’s notion of complex labor that can exist at any given moment in time; whereby simple labor can be worked on so that more simple labor is worked up in it to create complex labor (Marx 1976: 135, 304-305). Smith likens this complex labor to the machinery used in production and compares any highly educated or trained worker to an expensive machine.<sup>10</sup> The third cause for wage variations is the varying ‘constancy or inconstancy of employment’ (Smith 2000: 119). An example of this could be a house painter who primarily works during warm months, or the wait staff of a country club or golf course that is only open during certain times of the year. ‘Fourthly, [t]he wages of labour vary according to the small or great trust which must be reposed in the workmen’ (Smith 2000: 121). Smith cites examples of doctors or attorneys, whom one may have to entrust with his or her life. The fifth factor acting on wages in different employments is ‘the probability or improbability of success in them’ (Smith 2000: 122). By this logic, the high salaries of professional musicians and athletes can be explained, ‘In a perfectly fair lottery, those who draw the prizes ought to gain all that is lost by those who draw the blanks’ (Smith 2000: 122).

The combination of these five factors working simultaneously across sectors lead to the differences in wages that one can observe at any given moment in time, but the full mobility of labor—or the ‘perfect liberty’ that Smith uses as his broad brush to characterize his long-period thinking—exercises an equalizing force on the differences in the advantages and disadvantages of labor, and, over time, induces their erosion. An explanation of this kind renders differences in wages less important than the overall movements of the total advantages and disadvantages of labor. As Smith explains:

The five circumstances above mentioned, though they occasion considerable inequalities in the wages of labour and profits of stock, occasion none in the whole of the advantages and disadvantages, real or imaginary, of the different employments of either. The nature of those circumstances is such, that they make up for a small pecuniary gain in some, and counter-balance a great one in others.

In order, however, that this equality may take place in the whole of their advantages or disadvantages, three things are requisite even where there is the most perfect freedom. First the employments must be well known and long established in the neighbourhood; secondly, they must be in their ordinary, or what may be called their natural state; and,

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<sup>10</sup>‘When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expence of much labour and time to any of those employments which requires extraordinary dexterity and skill, may be compared one of those expensive machines’ (Smith 2000: 116-117).

thirdly, they must be the sole or principal employments of those who occupy them (Smith 2000: 131-132).

The quoted passages from Smith, particularly the beginning of Chapter Ten and the above, demonstrate Smith's long-period thinking, which Marx is able to pick up on for his own purposes. This long-period vision shows through in Smith, especially when he attaches the conditions of 'perfect liberty,' or 'where there is the most perfect freedom' to his arguments. Smith emphasizes his notion of perfect liberty in his description of the turbulent movements of wages and profits. When he introduces the equality of the advantages and disadvantages of different employments of labor and capital, he quickly follows with the condition of perfect liberty, 'This at least would be the case in a society where things were left to follow their natural course where there was perfect liberty' (Smith 2000: 114).

Similarly, when discussing natural prices, Smith asserts that the conditions of perfect liberty are necessary for their determination, and for natural prices to act as the center of gravity for market prices (Smith 2000: 63):

The market price of any particular commodity, though it may continue long above, can seldom continue long below, its natural price. Whatever part of it was paid below the natural rate, the persons whose interest it affected would immediately feel the loss, and would immediately withdraw either so much land, or so much labour, or so much stock, from being employed about it, that the quantity brought to market would soon be no more than sufficient to supply the effectual demand. Its market price, therefore, would soon rise to the natural price. This at least would be the case where there was perfect liberty (Smith 2000: 70).

Smith clearly explains that, given the free mobility of labor, the five factors explaining wage differentials balance each other out until there is equality among the advantages and disadvantages of the different employments of workers. However, he introduces a key caveat of the long-period method when he states that 'the employments must be well known and long established' (Smith 2000: 131). This condition implies that some significant length of time is necessary for the turbulent dynamics to run their course. Further support for this insight is provided when Smith continues his explanation and discusses how the wages in new professions tend to be higher than in older ones, but that designations of "new" and "old" are not meaningful for long due to the 'continually changing' nature of industry (Smith 2000: 132). The higher wages in new industries are a result of the increase in demand for labor of a certain complexity, but this increase in the wage is just a perturbation around the "natural" price of labor; given enough time, labor will adapt itself to any new skill requisites and the turbulent movements of wages around their

average is not disrupted. Smith’s explanation demonstrates the importance of the ‘fungibility’ of labor in the long-period method (Foley 2011b: 19). The unimportance of wage differentials due to the peculiarity of certain lines of work in Smith’s exposition is what leads Marx to also view these wage differentials as unimportant, or not contributing to any real differences in laborers. Marx also adopts the mobility of labor contained in the conditions of perfect liberty in Smith’s original work. There are some gaps between Smith’s exposition and Marx’s use of a uniform rate of surplus value, but the gaps can be bridged by situating both Smith and Marx within the long-period method.

### 3 Insights of the Long-Period Method

To further understand the turbulently equalizing rate of surplus value across sectors and its implications, it is helpful to frame the above passages concerning the mobility of labor from *Capital: Volume III* in terms of Marx’s larger theory of value and the long-period method as done by Foley and Duménil (2008a,b) and Foley (2011b). Employing the long-period method allows one to see that the constant tendency for sectoral rates of surplus value to equalize—with local obstacles providing turbulence and hiccups that prevent the equalization from being a smooth movement—follows from the ‘commodity law of exchange’ as an important tendency within the overall framework in which Marx is working. The commodity law of exchange is defined as the abstraction in which commodities exchange at prices proportional to embodied labor-time, or commodities exchange at their values<sup>11</sup> (Foley and Duménil 2008a)(Foley 2011b: 17). The abstraction of the commodity law of exchange is similar to the classic example of the ‘early and rude state of society’ (Smith 2000: 53) put forth by Smith to explain capitalist society’s self-organizing division of labor and the origin of value in the activity of laboring (Foley 2011b: 15-16)(Marx 1988: 376-380, 391-392).<sup>12</sup>

#### 3.1 The Commodity Law of Exchange

To build the commodity law of exchange one must suppose that there is a world in which there are many producers that make and use their own tools, that these producers are engaged in many sectors of production, and that all producers are mobile between the sectors of production. If different sectors of production require that producers spend different lengths of time

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<sup>11</sup>Here value is meant in the *Capital: Volume I* sense of the term:  $c + v + s$  (Marx 1976: 320).

<sup>12</sup>Meek also recognizes the similarity of Marx and Smith’s approaches in this regard (Meek 1967: 98).

crafting their tools and then laboring in order to produce a final product, the rate at which the final commodities exchange for one another across sectors will turbulently oscillate around centers of gravity at which the total quantities of labor-time embodied in the commodities changing hands are equal. If the rate at which the commodities exchange is not proportional to embodied labor times, producers will—being mobile across sectors—move into the sectors of production with better returns on time invested, exiting the less advantageous sectors, until the rates of exchange become roughly proportional to embodied labor times once again. This roughly equalized rate of exchange is similar to the concept of natural prices determined by labor-time found in Smith, and reveals the activity of laboring as the source, and ultimate regulator, of value (Smith 2000: 65-66).

Marx endorses this abstraction as it is found in Smith’s example of beaver and deer hunters by pointing out that Smith is correct in taking as his starting point the exchange of commodities by independent producers in the absence of capital (Marx 1988: 379). Marx also accepts the determination of value according to labor-time, but adds the caveat that value is determined by the socially necessary abstract labor-time embodied in commodities.<sup>13</sup>

The rough equalization process resulting from the mobility of producers in the commodity law equalizes the returns to individual effort, or the ‘reproductive condition’ of all producers over a long period of time (Foley 2011b: 16). The turbulent equalization of this reproductive condition parallels the tendency for the equalization of the sectoral rate of surplus value in Marx’s analysis. Employing the commodity law of exchange makes clear Marx’s reasoning for a uniform rate of surplus value induced by the mobility of labor/producers across spheres of production. However, this first basic abstraction leaves much ground uncovered. The commodity law of exchange provides the correct starting point to examine the tendency for the rate of surplus value to equalize, but it is incomplete as far as fully explaining the underlying motions of capitalism.

### 3.2 The Capitalist Law of Exchange

In order to further develop the insights of the commodity law, private property and capitalists are introduced so that the initial abstraction of the commodity law can take on a more developed form: the ‘capitalist law of exchange’ (Foley and Duménil 2008a)(Foley 2011b: 18). The capitalist law of exchange incorporates the use of means of production in the form of tools and machinery (constant capital) that are owned and appropriated by capitalists and not the producers from the commodity law of exchange. The possibility

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<sup>13</sup>See (Marx 1976: 125-131) for further discussion of labor-time as the determinant and regulator of value.

of purchased constant capital implies that, if prices are proportional to embodied labor time as they are in the commodity law of exchange, capitalists who advance more constant capital per worker than the average capitalist will ‘realize smaller profit in comparison to their total capital advanced, that is, lower profit rates’ (Foley and Duménil 2008a).<sup>14</sup>

However, Marx accepts that in fully developed capitalism the rate of profit realized by capitals in different spheres of production turbulently equalizes through the competition among capitals (Marx 1981: 297).<sup>15</sup> Thus, in spite of differences in the constant capital per worker in different spheres of production, the rate of profit is turbulently equalized across sectors. This competitive process that equalizes the rate of profit across industries is characterized as the mobility of capital to constantly seek the highest possible profit rate by entering industries with high rates of profit and exiting industries with lower rates of profit. The constant migration of capital across industries produces an average rate of profit that is turbulently equalized across industries, and acts as a center of gravity for the fluctuations in sectoral profit rates. This equalized profit rate, with the introduction of unequal exchange, also has the effect of transforming the values from the commodity law of exchange into prices of production<sup>16</sup> (Foley 1986: 97-101)(Rubin 1990: 231). The use of the capitalist law of exchange implies that prices of production are the center of gravity for market prices and ‘thus the natural prices relevant to a competitive capitalist economy’ (Foley and Duménil 2008a).

The capitalist law of exchange also introduces the major class distinction between labor and capital that is a prominent feature in Classical Political Economy, and, with this distinction, the producers in the commodity law of exchange become wage-laborers hired by capitalists who must work longer than necessary to reproduce themselves and produce surplus value for the capitalists (Marx 1976: 324-327).<sup>17</sup> The conversion of the producers in the commodity law of exchange to wage-laborers in the setting of fully developed capitalism converts the mobility of producers into the mobility of laborers

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<sup>14</sup>A discussion employing a similar layering of abstractions can be found in the work of Meek (1967). Meek begins with an abstraction of a world of direct commodity producers that is similar to the commodity law of exchange, and notes the similarities between Smith and Marx’s starting points (Meek 1967: 97-98). he then ‘capitalistically’ modifies this abstraction to incorporate capitalist control over means of production and the equalization of the rate of profit brought about through competition among capitals (Meek 1967: 110). However, Meek does not mention or address the status of the equalized rate of surplus value in developing this method.

<sup>15</sup>See the passage from page 297 of *Capital: Volume III* quoted in Section 2.1.

<sup>16</sup>Prices of production is meant as Marx’s profit-rate equalizing prices:  $c + v + p$  (Marx 1981: 257).

<sup>17</sup>The production of surplus value becomes the ‘determining purpose of capitalist production,’ and is absolutely necessary for the continued reproduction of labor and capital, as well as the whole of capitalist society (Marx 1976: 338).

across spheres of production. The implications of the capitalist law go further, as the allocation of labor between different lines of production is no longer solely regulated by the returns to individual laborers across the lines of production; instead, the allocation is regulated by the profit rate and capital's ebb and flow across sectors that expands and contracts different lines of production (Foley 2011b: 21)(Rubin 1990: 225-227). Marx describes how capital's constant migration in search of higher profit influences the allocation of labor across sectors by stating that wage-labor 'must be prepared to change according to the needs of capital and let itself be flung from one sphere of production to another' (Marx 1981: 297). However, this adjustment to capital's expansion and contraction of industries holding a guiding influence over the allocation of labor in the capitalist law of exchange does not undo the mobility of labor at the heart of the commodity law.

The mobility of labor is still at work in a fully developed capitalist economy. The pace at which capital is able to migrate across sectors is dependent upon how quickly labor 'can be moved from one sphere to another and from one local point of production to another' (Marx 1981: 298). The more rapidly labor can be guided from one sector to another is determined by the mobility of labor, and Marx describes this feature in a way that reinforces the use of the long-period method and continued adherence to the mobility of labor, even when operating under the capitalist law of exchange (Marx 1981: 298).<sup>18</sup> The adherence to the mobility of labor under fully developed capitalism is consistent with the long-period method's focus on mobility in order to reveal the underlying, pure motions of capitalism. As Foley points out, the construction of the capitalist law of exchange around the initial abstraction of the commodity law is an extension that 'supersedes, incorporates, and transcends the commodity law of exchange' (Foley 2011b: 22).<sup>19</sup> Hence, the capitalist law of exchange should not be taken as subverting the commodity law, and the mobility of labor contained within the commodity law can still be seen as an underlying regulative force in capitalist economies.

While the commodity law of exchange is necessary to understand the logic behind Marx's use of an equalized rate of surplus value, the capitalist law of exchange is necessary for the use of categories like wages and surplus value that are needed to see the reproductive condition of laborers as the rate of surplus value. Treating the capitalist law as necessary in this sense then supports the view that the capitalist law incorporates and supersedes the commodity law while not undoing its fundamental properties and effects. Thus, the structures and class relations that come with the capitalist law

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<sup>18</sup>See the discussion of Marx's use of mobile labor in Section 2.1.

<sup>19</sup>This view bears close resemblance to that held by Rubin, 'Thus the labor theory of value and the theory of production price are not theories of two different types of economy, but theories of one and the same capitalist economy taken on two different levels of scientific abstraction' (Rubin 1990: 253).

of exchange require a change in the terminology applied to the fundamental characteristics of the commodity law of exchange. As a result of viewing the commodity law through the capitalist law, one arrives at the transformation of the expression of the mobility of labor from the equalization of the reproductive condition into the equalization of the rate of surplus value. This connection between the two laws of exchange relies on the analogy that the reproductive condition of workers in fully developed capitalism is the rate of surplus value. This analogy requires that the conditions of production shift from being determined by producers in the commodity law of exchange into being determined by capital in the capitalist law of exchange. Marx's development of the working day in capitalist society helps shed light on this relationship between the two laws of exchange.

The emergence of capital as external to the worker in the capitalist law entails that the conditions of production are no longer directly determined by the workers themselves as they were in the commodity law of exchange (Marx 1976: 1026, 1052-1053)(Marx 1988: 379-380). This effect is evident by the way mechanization makes the productivity of labor external to the workers themselves, and how the collection of workers under one roof contributes to any differences in individual workers melting away and renders all labor as general social labor (Marx 1976: 440-443, 449).<sup>20</sup> The change in the conditions of production as determined by the producers in the commodity law of exchange to determined as external to the worker in the capitalist law of exchange effectively treats the rate of surplus value (or rate of exploitation) as a summary of the conditions under which labor reproduces itself in a fully developed capitalist society, because the rate of surplus value is directly linked to any 'qualitative change[s] in the situation of the human race' (Foley 2000: 6).

The capitalist law of exchange does not invalidate the insights of the commodity law of exchange, but, rather, holds intact the mobility of labor within the commodity law of exchange, and introduces the possibility that commodities no longer exchange at their values but now exchange at prices of production. The importance of maintaining the commodity law of exchange within the capitalist law of exchange is that it reveals the human activity of laboring as the source of value, as well as the mobility of labor as key to understanding the dynamics of the reproductive condition of labor-

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<sup>20</sup>Marx writes off any concrete differences in the intensity of labor across sectors because he agrees with Smith's ideas of differences in labor being 'compensated to a partial extent by attendant circumstances peculiar to each sort of labour,' but the peculiarities of different types of labor do not affect labor as the source of value or labor as it corresponds to its abstract concept presented in the commodity law of exchange and Marx's presentation (Marx 1976: 534). Another perspective which argues that there is no necessary relationship between a worker's value-creating capacity and their rate of exploitation can be found in Saad-Filho (2002) on p. 57.

ers across sectors. The tendency for the reproductive condition to equalize across sectors is an expression of the mobility of labor, and when this insight is coupled with Marx's theory of exploitation, the turbulently equalized reproductive condition becomes the turbulently equalized rate of surplus value. This shift treats the rate of surplus value as a summary of the conditions under which laborers reproduce themselves, and, thus, is taken as analogous to the reproductive condition in the commodity law of exchange. This framework also reveals the central tendencies of capitalism to be the turbulently equalized rate of profit, and the turbulently equalized rate of surplus value.

## 4 Marx on Smith

While Marx accepts Smith's description of the movements of the advantages and disadvantage of labor in Chapter Ten of *The Wealth of Nations*, he feels that there are errors elsewhere in Smith's work. Marx describes Smith's errors in full detail in *Theories of Surplus Value*. Throughout the presentation of Smith's missteps, Marx uses language which directly implies, or alludes to, the need to frame the entire theory of value in terms of a multi-layered abstraction similar to the use of the commodity and capitalist laws of exchange. An approach paying careful attention to the method of abstraction and ordering of concepts is required because the construction of value in Smith changes, and is upset, as capital is introduced to Smith's early and rude state (Marx 1988: 386, 396). Marx portrays Smith's errors as inhibiting the investigation of value as the highest-ordered regulator of capitalist societies, and Marx takes up the task of correcting Smith as part of his own investigation (Marx 1988: 376-411).

While Marx endorses Smith's abstraction of the early and rude state and explanation of wage movements, there are certain follies in Smith that Marx aims to correct:

But as Adam Smith quite correctly takes as his starting-point the commodity and the exchange of commodities, and thus the producers initially confront each other only as possessors of commodities, sellers of commodities and buyers of commodities, he therefore discovers (so it seems to him) that in the exchange between capital and wage labour, objectified labour and living labour, the general law at once ceases to apply, and commodities (for labour too is a commodity in so far as it is bought and sold) do not exchange in proportion to the quantities of labour which they represent. Hence he concludes that labour time is no longer the immanent measure which regulates the exchange value of commodities, from the moment when the conditions of labour confront the wage labourer in the form of landed property and capital. . .

. . . Adam Smith feels the difficulty of deducing the exchange between

capital and labour from the law that determines the exchange of commodities, since the former apparently rests on quite opposite and contradictory principles (Marx 1988: 379-380).

Marx continues on Smith's achievements and follies:

It is Adam Smith's great merit that it is just in the chapters of Book I (chapters VI, VII, VIII) where he passes from simple commodity exchange and its law of value to exchange between objectified and living labour, to exchange between capital and wage labour, to the consideration of profit and rent in general—in short, to the origin of surplus value—that he feels some flaw has emerged. He senses that somehow—whatever the cause may be, and he does not grasp what it is—in the actual result the law is suspended: more labour is exchanged for less labour (from the labourer's standpoint), less labour is exchanged for more labour (from the capitalist's standpoint). His merit is that he emphasises—and it obviously perplexes him—that with the *accumulation of capital* and the *appearance of property in land*—that is, when the conditions of labour assume an independent existence over against labour itself—something new occurs, apparently (and actually, in the result) the law of value changes into its opposite. It is his theoretical strength that he feels and stresses this contradiction just as it is his theoretical weakness that the contradiction shakes his confidence in the general law, even for simple commodity exchange; that he does not perceive how this contradiction arises, through labour capacity itself becoming a commodity, and that in the case of this specific commodity its use value—which therefore has nothing to do with its exchange value—is precisely the energy which creates exchange value. (Marx 1988: 393-394).

In the above passages Marx accepts and endorses the type of abstraction of the commodity law of exchange and Smith's 'early and rude state,' but he points out how the power of these abstractions to locate the source of value in the activity of laboring seems to get lost by his predecessor as fully developed capitalism is considered. Marx recognizes that the abstraction of the commodity law of exchange is incomplete as far as fully explaining the motions and tendencies of capitalism, but he does not think that one needs to cast aside the initial abstraction. He sees the initial abstraction as correct, but needing an extension and further development to better consider circumstances in which means of production confront workers as 'landed property and capital' (Marx 1988: 380).

Marx cites that one of the chief errors which Smith makes in this regard is his inadequate development of the value forms—specifically surplus value—necessary to understand the gravitational forces of capitalist production. Marx's point of view regarding Smith's shortfall in conceiving of surplus-value is clearly expressed by the passage below:

Thus Adam Smith conceives *surplus value*—that is, surplus labour, the excess of labour performed and realised in the commodity *over and above* the paid labour, the labour which has received its equivalent in the wages—as the *general category*, of which profit proper and rent of land are merely branches. Nevertheless, he does not distinguish surplus value as such as a category on its own, distinct from the specific forms it assumes in profit and rent. This is the source of much error and inadequacy in his inquiry, and of even more in the work of Ricardo (Marx 1988: 388-389).

In Marx's view, Smith's inability to fully develop surplus value limits his analysis, and leads to a confusion of profit and surplus value. Smith's confusion leads to a misunderstanding of how surplus value is appropriated, and the mechanisms at work in redistributing this surplus value across sectors and the realization of the 'further developed form of profit' (Marx 1988: 395).

Marx straightens out these issues by realigning Smith's notions of the sources of exchangeable value and reiterating that only labor is the source of value, and neither rent nor profit are real sources of exchange value (Marx 1988: 399). Marx is also quick to point out that by misunderstanding the process through which surplus value is appropriated and redistributed to form prices of production, Smith cannot fully grasp how value is veiled and buried by layers of the concrete:

By the natural price of commodities Adam Smith understands nothing but their value expressed in money. (The market price of the commodity, of course, stands either above or below its value. Indeed, as I shall show later, even the average price of commodities is *always different* from their value. Adam Smith, however, does not deal with this in his discussion of natural price. Moreover, neither the market price nor still less the fluctuations in the average price of commodities can be comprehended except on the basis of an understanding of the nature of value) (Marx 1988: 400).

Marx extends his realignment of Smith to point out the critical importance of value to a fully developed analysis of capitalism, and the long-period method clearly lays out the logic behind Marx's notion of value and his more concrete prices of production. Marx thus moves from his predecessor's misconceptions to a fully developed understanding of value, which is necessary to comprehend the critical fluctuations and tendencies of capitalism.

Through developing and incorporating surplus value into his reading of Smith, Marx moves beyond Smith's view of labor and is able to see Smith's arguments in terms of surplus value. This adjusted focus is key to Marx's long-period method because it aims to probe the underlying gravitational forces at work that are constantly redefining what is readily observable in the world. It is precisely this adjustment that leads Marx to consider the

equalization of the rate of surplus value as an effect of the mobility of labor. Marx emphasizes just how important the mobility of labor found in Smith's work is to the development of political economy:

It was an immense step forward for Adam Smith to throw out every limiting specification of wealth-creating activity—not only manufacturing, or commercial or agricultural labour, but one as well as the others, labour in general. With the abstract universality of wealth-creating activity we now have the universality of the object defined as wealth, the product as such or again labour as such, but labour past, objectified labour. How difficult and great was this transition may be seen from how Adam Smith himself from time to time still falls back into the Physiocratic system. Now, it might seem that all that had been achieved thereby was to discover the abstract expression for the simplest and most ancient relation in which human beings—in whatever form of society—play the role of producers. This is correct in one respect. Not in another. Indifference towards any specific kind of labour presupposes a very developed totality of real kinds of labour, of which no single one is any longer predominant. As a rule, the most general abstractions arise only in the midst of the richest possible concrete development, where one thing appears as common to many, to all. Then it ceases to be thinkable in a particular form alone. On the other side, this abstraction of labour as such is not merely the mental product of a concrete totality of labours. Indifference towards specific labours corresponds to a form of society in which individuals can with ease transfer from one labour to another, and where the specific kind is a matter of chance for them, hence of indifference. Not only the category, labour, but labour in reality has here become the means of creating wealth in general, and has ceased to be organically linked with particular individuals in any specific form (Marx 1973: 104).

The key parts of the above passage are that Marx points out the importance of Smith's abstraction of the early and rude state, as well as the mobility of producers, or 'indifference towards any specific kind of labour' and 'individuals can with ease transfer from one labour to another,' contained within the abstraction.

Smith's emphasis on the advantages and disadvantages of labor instead of just the wage presents a reproductive condition in terms of the mobility of labor that is similar to Marx's rate of surplus value. Smith's use of the balance of the advantages and disadvantages of different employments leaves room for Marx to envision this balancing movement in terms of surplus value. The creation of surplus value (or rate of exploitation) can be taken as the disadvantage of work that is weighted against the wages workers receive (the advantage of work), and it is the whole of these advantages and disadvantages which balances across the spheres of production. This argument can be phrased in Marx's own terminology to say that the mobility of workers

balancing out the advantages and disadvantages of different employments turbulently equates the ratio of unpaid to paid labor-time across sectors.

The constant migration of producers according to where the highest returns to productivity are in the commodity law of exchange demonstrates how workers will shift across industries in search of better wages and work conditions in fully developed capitalism. These nuances of the commodity law and the transition to the capitalist law of exchange reveal how important Smith's development of the mobility of labor is to Marx's analysis. One implication of this view that Marx fully adopts Smith's theory of the turbulent equalization of the whole of the advantages and disadvantages and re-purposes it into a turbulently equalizing rate of surplus-value is that then workers know the degree to which they are exploited and move between sectors accordingly until the rate of exploitation is balanced across sectors.<sup>21</sup> Marx discusses how workers understand that they are exploited in his discussion of the struggle over the length of the working day, but he does not state explicitly that workers know their exact rate of exploitation (Marx 1976: 342-344). However, the wholesale adoption of Smith's balancing whole of the advantages and disadvantages of labor implies that workers do know the degree to which they are exploited and migrate across sectors in response to changes or differentials in this degree across sectors.

Smith's emphasis on the equalization of the advantages and disadvantages of labor presents a proxy for working conditions and the ability of labor to reproduce itself. Marx's reconsideration of value in general leads him to utilize the rate of surplus value as a stronger metaphor for the conditions under which labor reproduces itself.<sup>22</sup> Marx still employs the turbulently equalizing wage that hovers around the value of labor-power, but he sees the product of the second portion of the working day, the surplus value, as the critical substance of analysis. Because Marx is able to see the importance of surplus value, he is able to use it as a bridge from the fungibility of labor expressing itself through a turbulent equalization to the substance of profit and its dynamics. The free mobility of labor and its adaptability over time are the key characteristics that lead Marx to the equalized rate of surplus value across sectors in his analysis, and the foundations of the mobility of labor are evident in the work of Smith.

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<sup>21</sup>This does not require that workers base their mobility decisions on value magnitudes measured in labor time. It is possible to show that workers' movement across sectors based on "transformed" money prices still induces the equalization of the rate of surplus value across sectors when measured in money magnitudes or units of labor time. This conclusion is discussed in the following section.

<sup>22</sup>Marx's reformulation of Smith clearly parallels what Foley describes as the 'reproductive condition' of society (Foley 2011b: 16).

## 5 The Rate of Surplus-Value as Economic Law

Recognizing the equalized rate of surplus value as a central tendency in Marx's long-period method and its origin in Smith carries with it a particular problem. The rate of surplus value is not directly observable except at the aggregate level of the economy as a whole. One can observe the total surplus value in the aggregate as the total mass of profit and derive the rate of exploitation for the entire economy (Marx 1981: 267)(Rosdolsky 1977: 369). However, the transformation process that changes values into prices of production obscures surplus value on a sectoral level, and the rates of surplus value and profit do not equalize in the same fashion. The rate of surplus value and the rate of profit across sectors will independently trend toward equalization, but these rates will not be equal to one another and the two processes happen in a logical ordering laid out by Marx. Rosdolsky emphasizes this point:

Thus, since from the outset the rate of profit (as distinct from profit as such) differs qualitatively from the rate of surplus-value, the laws of its movement do not coincide 'so directly or simply' with those of the rate of surplus-value as might appear initially (Rosdolsky 1977: 370).

The profit, or surplus value, realized in each sector can be observed, but the process of equalizing sectoral rates of profit and forming prices of production shrouds the creation of surplus value in mystery. The problem is not observing or obtaining prices of production, but trying to observe the surplus value created in each sector.

The mobility of capital that redistributes surplus value to equalize the rate of profit renders surplus value directly observable only in its realized form of profit, thus commodity values are also not directly observed:

It is the transformation of surplus-value into profit that is derived from the transformation of the rate of surplus-value into the profit rate, not the other way round. In actual fact, the rate of profit is the historical starting point. Surplus-value and the rate of surplus-value are, relative to this, the invisible essence to be investigated, whereas the rate of profit and hence the form of surplus-value as profit are visible surface phenomena (Marx 1981: 134).

From the above passage one could expect that any empirical analysis of sectoral rates of surplus value would not show a tendency toward equalization, but would show the surplus value that is redistributed across sectors to equalize the rate of profit.

As stated by Marx in the passage above, to properly frame the motions of the rate of surplus value as an unobservable underlying mechanism, consideration of the transformation process must begin with the rate of profit (Foley

2011b: 36). It is not possible to directly observe the mass of surplus value produced in an individual sector that is then redistributed across sectors to equalize the profit rate. However, through the use of the abstractions of the commodity and capitalist laws of exchange, the forces acting upon the sectoral rate of surplus value can be understood. This view implies an “inverse transformation problem,”<sup>23</sup> by which one begins with concrete market data and works backward to reveal value and surplus value.

Taking the commodity and capitalist laws of exchange as necessary parts of Marx’s long-period method, the mobility of labor inherent in the commodity law of exchange provides the necessary factor to assume an equalized rate of surplus value across sectors. This equalized rate of surplus value across sectors provides the necessary assumption to move from concrete market data to recover values.<sup>24</sup> This inverse transformation problem is also discussed by Foley (2011a). By beginning with concrete market data, one can use the equalized rate of surplus value across sectors to impute the surplus value that is produced in each sector. Thus, it is possible to estimate values from market data. Accepting the “New Interpretation” of Duménil (1980, 1983) and Foley (1982, 1986), it is then possible to use the “monetary expression of

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<sup>23</sup>The term ‘inverse transformation problem’ was first used by Morishima and Seton (1961), and the method is discussed by Robinson (1950), Samuelson (1957, 1971), and Morishima and Seton (1961). Robinson (1950) suggests the method in reaction to Sweezy (1949) not realizing that ‘the *values* which have to be “transformed into prices” are arrived at in the first instance by transforming prices into *values*’ (Robinson 1950: 362). Robinson then suggests the method of the inverse transformation problem: ‘The *values* of commodities are imputed by crediting each group of workers with the average rate of exploitation of labour as a whole, and the “transformation of values into prices” consists of breaking the average up again into the separate items from which it was derived’ (Robinson 1950: 362). Samuelson views the discussion of the transformation problem as ‘rather pointless,’ but does point out that ‘Logically this transformation goes from exchange values to Marxian-defined values—not vice versa’ (Samuelson 1957: 890). Morishima and Seton identify the problem as being ‘the conversion of prices into “values”’ and detail the technical aspects of a solution to this problem through use of input-output matrices. Additionally, they acknowledge Marx’s equalized rate of surplus value as a necessary part of this solution, but as far as they are aware ‘there is no substantive statement in Marxian literature that could serve to justify this postulate. Indeed, there is no reason at all why the ratio of “unpaid” to “paid” labour should not be higher in some sectors (e.g. capital-intensive industries) than in others, even when both components are expressed in terms of “value”’ (Morishima and Seton 1961: 206). The analysis in the previous sections of this paper provides a contribution to the Marxian literature that could justify this postulate.

<sup>24</sup>This inverse transformation problem is also suggested by Duménil et al. (2009) and Rieu (2009), but is not fully elaborated. Rubin also suggests a similar perspective: ‘If we know the distribution of a given capital to constant and variable capital, and the rate of surplus value, we can easily determine the quantity of labor which this capital brings into action, and we can move from the distribution of capital to the distribution of labor’ (Rubin 1990: 223).

labor time”<sup>25</sup> (MELT) to translate between these imputed values in money terms to values in terms of labor time.<sup>26</sup> Translating between prices and values with use of the MELT will not change the sectoral rate of surplus value. The surplus value produced in each sector when measured in prices may be different from its magnitude in value terms, and the same applies to variable capital (or the wage bill). However, the rate of surplus value will remain the same whether calculated using prices or quantities of labor time. This congruence is important since in a capitalist economy workers base their decisions to shift between sectors, for the most part, on money prices and not on values measured in hours of abstract labor time. Hence, it is possible for the tendency toward an equalized rate of surplus value to operate when considering transformed price magnitudes. Thus, the ‘invisible’<sup>27</sup> nature of surplus value is revealed through the framework of the long-period method. The inverse transformation frames the transformation problem as a problem of working from the concrete to the more abstract forces underlying reality,<sup>28</sup> and correctly treats value as the most elemental piece to Marx’s framework, which is consistent with Marx’s emphasis that surplus value is the ‘invisible’ phenomenon one must seek to understand (Marx 1981: 134).

This perspective on the transformation process is brought into clear focus through the use of the commodity and capitalist laws of exchange in building Marx’s long-period method and his theory of value. By using the two laws

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<sup>25</sup>The monetary expression of labor time can be defined as the ratio of total new money value added in the economy to the total abstract living labor time expended.

<sup>26</sup>This view differs from that of Chilcote (1997, 2004), Ochoa (1984, 1989), and Shaikh (1984, 1998) in that it aims to deal with an estimate of the abstract labor content of the sectors of the economy as opposed to embodied labor. However, any estimate of values requires some assumption regarding the distribution of the rate of surplus value across sectors, or the structure of relative wages across sectors. This aspect of estimating values is pointed out by Morishima and Seton: ‘It is clear, however, that *some* postulate of the [distribution of rates of surplus value] is necessary to make the value concept quantifiable and determinate’ (Morishima and Seton 1961: 206). Ochoa (1989), for example, assumes sufficient labor mobility through use of the relative wage structure across industries (Ochoa 1989: 422,427). Another difference in the suggested approach of this paper is that it does not require reference to a basket of wage goods as determining the value of labor-power.

<sup>27</sup>Rubin provides clear remarks on the seeming invisibility of surplus value and value: ‘The capitalist economy is a system of distributed capitals which are in a dynamic equilibrium, but this economy does not cease to be a system of distributed labor which is in dynamic equilibrium, as is true of any economy based on a division of labor. It is only necessary to see under the visible process distribution of *capital* the invisible process of the distribution of social *labor*’ (Rubin 1990: 223).

<sup>28</sup>This perspective on Marx’s analysis and the transformation problem is also endorsed by Rubin: ‘On the contrary, in our further analysis we will show that production price and distribution of capitals lead to labor-value and distribution of labor and, parallel with them, are included in a general theory of equilibrium of the capitalist economy. We must build a bridge from the distribution of capital to the distribution of labor, and from production price to labor-value’ (Rubin 1990: 232).

of exchange, one can clearly see how Marx's theory of value contains layers of abstraction, and that value and the mobility of labor operate at the highest order of abstraction within the theory of value. This understanding of Marx's theory reveals that if one accepts the abstraction of the turbulently equalized rate of profit and prices of production, then the mobility of capital is at the heart of these phenomena. However, the source of the profit rate dynamics—the substance which capital competes over—is surplus value, and the motions of surplus value are derived from value and the mobility of labor. Even when operating under the capitalist law of exchange the basic element of the commodity law of exchange, the mobility of labor, is not subverted. While the allocation of labor across sectors is determined by the competition of capitals under the capitalist law of exchange, labor is still mobile across sectors to balance the rate of surplus value. Thus, while the competition of capitals is balancing the rate of profit, the mobility of labor is balancing the reproductive condition of laborers in a capitalist economy. Furthermore, the balancing of the rate of surplus value in each sector and even the creation of surplus value are not directly observable once operating under prices of production and the capitalist law of exchange. The concealment of the surplus value relation renders it rather mysterious, but also demonstrates why it is so vital to understand in order to have a full account of the motions of capitalist economies.

In spite of the importance of surplus value, its nature remains unimportant to capital. The capitalist is not directly concerned with the rate of surplus value, but is occupied with the rate of profit realized after the distribution of the social surplus. The concern over this '*secondary* economic operation', the return on total outlay ( $c+v$ ), obscures the surplus value relation—which can be seen as a primary economic operation—and the significance of its motions to the capitalist (Rosdolsky 1977: 372-373)<sup>29</sup>:

At a given level of exploitation of labour, the mass of surplus-value that is created in a particular sphere of production is now more important for the overall average profit of the social capital, and thus for the capitalist class in general, than it is directly for the capitalist within each particular branch of production. It is important for him only in so far as the quantity of surplus-value created in his own branch intervenes as a codeterminant in regulating the average profit. But this process takes place behind his back. He does not see it, he does

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<sup>29</sup>Rosdolsky draws a key passage out of Marx's discussion of the circulation process and realization of profit where he makes clear that the circulation and realization of profit are secondary processes that appear as primary ones: 'It is altogether necessary to make this clear; because the distribution of the surplus value among the capitals, the *calculation* of the total surplus value among the individual capitals—this *secondary* economic operation—gives rise to phenomena which are confused, in the ordinary economics books, with the primary ones' [emphasis in original text] (Marx 1973: 632).

not understand it, and it does not in fact interest him. The actual difference in magnitude between profit and surplus-value in the various spheres of production (and not merely between rate of profit and rate of surplus-value) now completely conceals the true nature and origin of profit, not only for the capitalist, who has here a particular interest in deceiving himself, but also for the worker (Marx 1981: 268).

The above passage adds to the idea that surplus value is a generally ignored and obfuscated phenomenon which holds immense influence over economic reality, and must be better understood. The significance of the rate of surplus value is that it lies at the heart of the tendencies of capitalist production; it provides a summary of the conditions under which workers reproduce themselves and provides the substance of the competition dynamics that cause the formation, and level, of the general rate of profit, but, most importantly, seeing the turbulent equalization of the rate of surplus value across sectors as the expression of the mobility of labor allows one to uncover value and behold the regulative force at the heart of capitalist societies.

## 6 Conclusion

Marx's use of a tendency for the rate of surplus value to equalize across sectors is not merely a convenient assumption, as some remarks by authors such as Robinson (1950), Samuelson (1957, 1971), Morishima and Seton (1961), and Bowles and Gintis (1977) might suggest, and the reason to adhere to this tendency centers around the mobility of labor. The need to be mindful of the mobility of labor in Marx becomes clear by properly framing the different levels of abstraction of Marx's theory of value within the long-period method. Constructing Marx's theory of value in terms of the abstractions of the commodity and capitalist laws of exchange clearly lays out the mobility of labor and capital at the heart of each abstraction, and the role of labor and capital's mobility in producing the central tendencies of capitalism. The use of the two laws of exchange also correctly places value and the mobility of labor at the highest order of abstraction, and treats them as underlying forces veiled by layers of the concrete. It has also been shown that the mobility of labor behind the turbulently equalizing rate of surplus value is a clear line of thought originating in the work of Smith. It is important to recognize Smith's influence on Marx, because Marx fully adopts Smith's description of wage dynamics across sectors and the mobility of labor. By focusing on the mobility of labor through the abstraction of the commodity law of exchange, and treating the commodity law of exchange as deeply embedded in the later capitalist law of exchange, insights in Marx's work regarding the conditions under which labor reproduces itself and the true problem that the transformation problem poses are brought to the foreground.

The real issue that the transformation problem poses is the task of peeling back the layers of the concrete to reveal value and surplus value in order to fully expose the long-period regulative forces of capitalism. This treatment of the transformation problem frames surplus value as central to Marx's overall theory of value, and rightfully so, because the conditions surrounding the production of surplus value reflect the conditions of the laboring class and the health of capitalism as a self-organizing system. The mobility of labor at the heart of the commodity law of exchange is the key piece to uncovering the tendency for the rate of surplus value to turbulently equalize across sectors, and the use of this tendency permits the recovery of values from prices of production. The importance of the mobility of labor to formulating this tendency is crucial, and the indebtedness to Smith should be recognized in order to fully understand Marx's reasoning behind the turbulently equalized sectoral rate of surplus value. The prominent role the sectoral rate of surplus-value plays in depicting the motions of capitalism leads Marx to elevate the sectoral rate of surplus value's tendency toward equalization to the level of an economic law, hence, this tendency should not be deviated from when applying Marx's vision.

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