DEPARTMENT OF ECONOMICS

Working Paper

The Structure and Content of *Das Kapital*

by

Deepankar Basu

Working Paper 2017-12

UNIVERSITY OF MASSACHUSETTS AMHERST

The Structure and Content of *Das Kapital*

Deepankar Basu[!]

21 August 2017

Words: 21764

Abstract

Karl Marx's magnum opus, *Das Kapital*, presents an analysis of the long run dynamics of a mature capitalist economy. The analysis is conducted at two primary levels of abstraction – 'capital in general' (where competition between individual capitals is abstracted from) and 'many capitals' (where the phenomenon of competiton between individual capitals is introduced) – and the presentation is organized into three volumes. In terms of structure, the analysis in the first two volumes is located at the level of 'capital in general', and the analysis in the third volume is located at the level of 'many capitals'. In terms of content, the first volume analyses the production and accumulation of surplus value, the second volume investigates the problems of realization of surplus value, and the third volume analyses the mechanisms that lead to the distribution of surplus value into income streams of different fractions of the ruling class – as profit of enterprise, commercial profit, interest and rent (and monopoly profit more generally). The three volumes together give a comprehensive picture of the workings of a mature capitalist economy and highlights its long run, contradictory tendencies.
Keywords: value, surplus value, capital, reproduction schemes, prices of production, rent, interest, commercial profit
JEL Codes: B14, B24, B51

! Department of Economics, University of Massachusetts Amherst MA, USA. Email: dbasu@econs.umass.edu This article has been written for a special issue of the journal, *Economic and Political Weekly*, marking the 150th year of the publication of volume one of Capital. I would like to thank Debarshi Das for his comments on an earlier version of this paper. All remaining errors are mine.

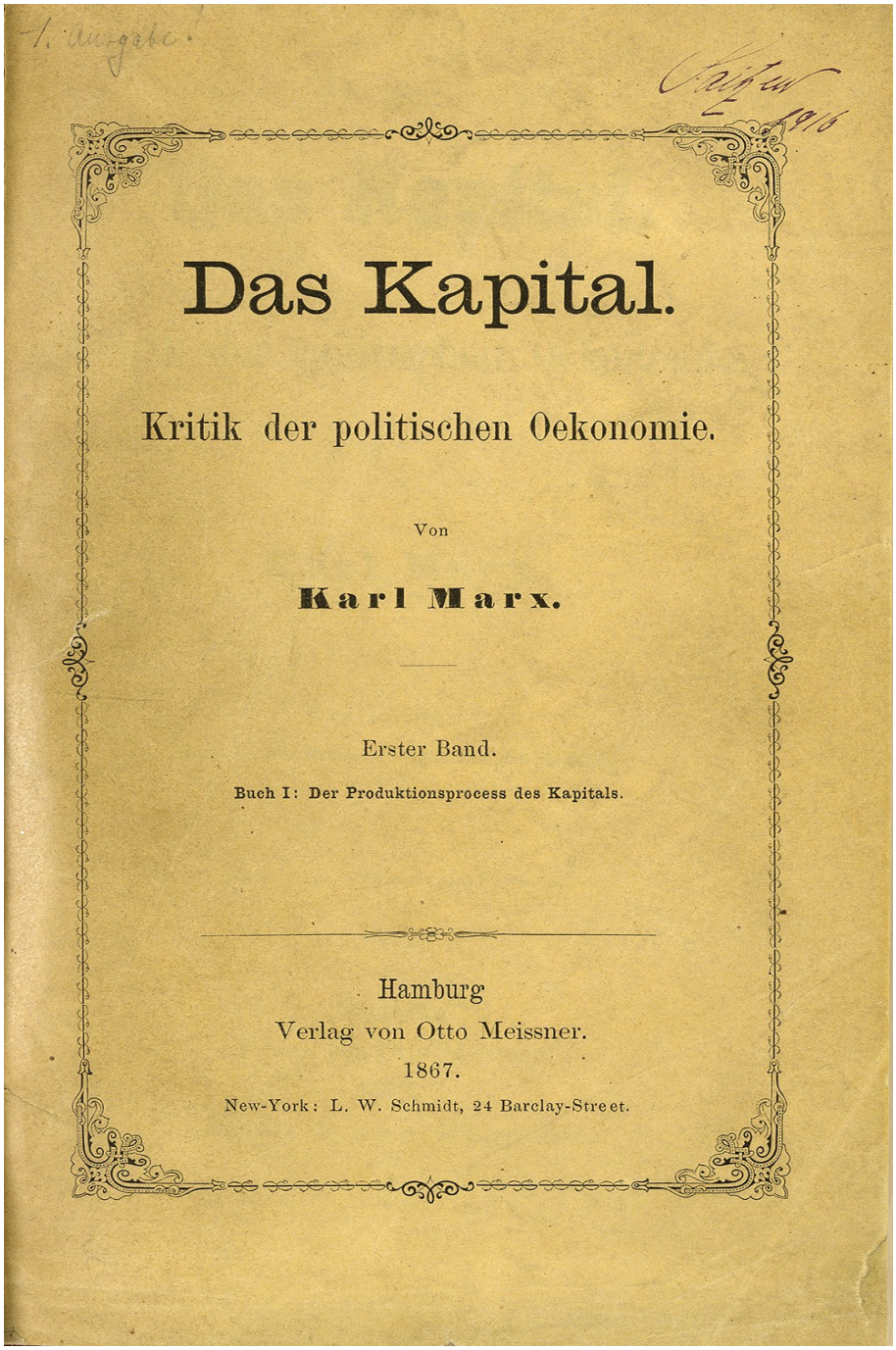

Figure 1: The cover page of the first volume of the first edition of *Das Kapital* that was published in German in Hamburg in 1867.
(Source of Image: https://upload.wikimedia.org/wikipedia/commons/8/8d/Zentralbibliothek_Z%C3%BCrich_Das_Kapital_Marx_1867.jpg)

Table of Contents

1 Introduction: The Structure of Das Kapital

Karl Marx's *Das Kapital* is arguably one of the most influential books on political economy written in the last 150 years. To understand the structure and content of this massive work, it will be useful to trace Marx's route to political economy and the evolution of his plans for writing *Das Kapital*.

Marx came to the study of economics via jurisprudence, philosophy, history and journalism. After completing his Ph.D. in philosophy from the University of Berlin in 1841, he had hoped for an academic position but quickly gave up that hope. He realized that there was no real prospect of an academic job materializing in Germany due to his radical political views. So he turned to journalism and took up the editorship of a radical democratic newspaper, *Rheinische Zeitung*. As editor of the newspaper, he found himself in the 'embarrasing position of having to discuss what is known as material interest', issues like forest thefts and division of landed property, condition of the peasantry, free trade and tariffs. Finding himself ill prepared to deal with these issues of 'material interest', Marx initiated his lifelong study of political economy in 1842-43.

> Although I studied jurisprudence, I pursued it as a subject subordinated to philosophy and history. In the year 1842-43, as editor of *Rheinische Zeitung*, I first found myself in the embarrassing position of having to discuss what is known as material interests. The deliberations of the Rhenish Landtag on forest thefts and diversion of landed property; the official polemic started by Herr von Schaper, then Oberprasident of the Rhine Province, against *Rheinische Zeitung* about the condition of the Moselle peasantry, and finally the debates on free trade and protective tariffs caused me in the first instance to turn my attention to economic questions. (Marx, 1970, pp. 19-20.)

Before being drawn into active politics and day to day organizing with the revolutionary upsurge across Europe in 1848, this initial phase of his studies produced the following books on economic issues: *Economic and Philosophic Manuscripts of 1844 (the 'Paris Manuscripts')*, *The Poverty of Philosophy*, *Wage Labour and Capital*, and *The Communist Manifesto*.

As the revolutionary movements of 1848 failed in one country after the other, Marx, one of the most vocal and articulate defenders of the revolution, was chased across the continent by the secret and not-so-secret police. He was expelled, in quick succession, from Germany, France and Belgium. He finally moved to England in 1849, and settled down in London to an alienated and difficult life common among mid-nineteenth century émigré intellectuals. When the insurrection of the Paris workers was defeated in 1850, Marx (and his comrade, Engels) reached the conclusion that revolution was no longer on the cards in the immediate future. They envisaged their primary work during this period of reaction as one of education, study and development of revolutionary theory. Hence they withdrew from day-to-day organizational politics.

Thus, Marx resumed his studies on political economy in 1850, using the documents and books in the British Museum as invaluable source material. Despite serious financial and health problems, and occassionally being drawn into political struggles, Marx spent most of his time now in studying various aspects of economics. This phase of his studies continued till his death in 1883, but it was the onset of the economic crisis of 1857 which forced Marx to pull together his studies of

nearly a decade into the *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)*. The *Grundrisse* was written as a series of seven notebooks in 1857-58, and mainly served the purpose of self clarification. Over the next decade, Marx worked his way through the intricacies of political economy, and left the result of his studies in the following texts: the incomplete *Contribution to the Critique of Political Economy* (published in 1859, which is primarily a re-draft of the first chapter of the *Grundrisse*), the 1861-63 manuscripts comprising of 23 notebooks, parts of which were published as *Theories of Surplus Value* (published by Kautsky in 1905-10), portions of *Volume I of Capital* (published in 1867), and some portions of *Volume III of Capital* (published by Engels in 1894); a manuscript of 1864-65, most of which was incorporated in Volume III of Capital; four manuscripts written between 1865 and 1870, parts of which went into Volume II of Capital (published by Engels in 1885); and, the final version of Volume I of Capital (1867).[1]

In the 1857-58 manuscript, which was later published as the *Grundrisse*, we find the first outline of his plans for a comprehensive study of the whole capitalist system; in a 1865 letter to his friend and comrade Engels, we find the final outline of his plans. Over this 7-8 year period, Marx experimented with the plan of the outline as he worked out the material and thought about the best form in which to present the result of his research.[2] The first outline shows Marx working with a 6 book plan, with a book each on:

- capital,
- landed property,
- wage-labour,
- the state,
- foreign trade, and
- the world market and crisis.

By the time of the final outline in 1865, Marx had changed his plan to a 3 book presentation:

- the first book would be devoted to the production process of capital;
- the second book would deal with the circulation process of capital; and
- the final book would look at the process of capitalist production as a whole.

In moving from the first outline of 1857-58 to the final outline of 1865, Marx was guided by his understanding of the correct method of political economy and his attempt to be faithful to that understanding in his presentation of the results of his research. In the ‘Introduction’ to the

1 Engels (1891) published an edited version of Marx’s 1849 pamphlet, *Wage Labour and Capital*, in 1891. In the introdution that he wrote for this edited version of the pamphlet, he indicated that Marx could complete his study of political economy only by the end of the 1850s. Hence, his earlier work on economics (produced in the 1840s) should be considered incomplete and even incorrect, to some extent. The body of work that emerges from 1857-58 onwards is the relatively complete part of Marx’s writings on political economy, the most complete being Volume one of Capital that was published during his lifetime.

2 For a detailed discussion of the frequent but small changes that Marx made to the original outline as he worked out his ideas, and for the logic underlying the continuity and change between the first and the final outline, see Rosdolsky (1968, pp. 10-56).

Grundrisse, Marx set out a fairly detailed account of his understanding of the correct method of political economy.

> It seems to be correct to 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 closer examination this proves false. (Marx, 1993, pp. 100.)

Why is this 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. These latter in turn presuppose exchange, division of labour, prices, 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. The former is the path historically followed by economics at the time of its origins. The economists of the seventeenth century, e.g., always begin with the living whole, with population, nation, state, several states, etc.; but they always conclude by discovering through analysis a small number of determinant, abstract, general relations such as division of labour, money, value, etc. As soon as these individual moments had been more or less firmly established and abstracted, there began the economic systems, which ascended from the simple relations, such as labour, division of labour, need, exchange value, to the level of the state, exchange between nations and the world market. The latter is obviously the scientifically correct method. (Marx, 1993, pp. 100-101.)

Here Marx argues that ‘ascending from the abstract to the concrete’ is the only scientific way to understand a concrete reality like a capitalist society. Since concrete reality is a *structured synthesis* of numerous aspects, or what Marx calls ‘determinations’, it is necessary to start with the simplest economic categories – those that capture key aspects of the concrete reality – and build up a picture of that reality as a synthesis, i.e., internally related whole, of those simple categories by gradually incorporating newer determinations. Starting from the simplest economic categories is the stage of the ‘abstract’ and gradual incorporation of newer determinations is the ascent towards the ‘concrete’. This movement ends with a structured synthesis of determinations, which is how Marx visualized the reproduction in thought of the concrete reality he was studying.

The original outline seems to have been motivated by the desire to understand the economic condition of the three fundamental social classes in capitalist society: the capitalists, the landowners and the workers. That is why the original outline has separate books on capital, landed property and wage-labour. The book on capital, in turn, includes separate sections on ‘capital in general’, ‘competition’, ‘credit system’ and ‘share-capital’. Thus, the outline of 1857-58 already shows an

understanding of two important issues: first, that ‘capital in general’ must be dealt with separately from what Marx would later call ‘many capitals’, i.e., the issues that arise with the competition between capitals; and second, that the processes of generation, realisation and distribution of surplus value must be studied separately from each other.

As his research progressed and he assimilated the material, Marx not only retained his key insights, but also sharpened his methodological understanding. He might have realized that having separate books on capital, landed property and wage-labour was not completely compatible with organizing the presentation according to different levels of abstraction. Thus, to adhere to his methodological understanding of the correct method of political economy as an ascent from the abstract to the concrete, he reorganized the original outline of six books into three. The analysis, according to the final outline, is organized at two levels of abstraction, one at the level of ‘capital in general’ and the other at the level of ‘many capitals’. The former refers to the study of the totality of the capitalist system by abstracting from competition between capitals, i.e., studying the relationship between capital and labour at the aggregate level; the latter refers to taking the analysis to a lower level of abstraction by bringing in the competition between capitals.

Organizing the material in this way, i.e., with a strict adherence to, and separation of, levels of abstraction, meant that separate books on landed property and wage labour no longer made sense. Since an anlysis of the global relationship between capital and labour required an understanding of wage labour, the book on wage labour was incorporated into the first book in the final outline (which dealt with the process of production of capital). Similarly, since the income of landowners, i.e., rent, arose from the redistribution of surplus value, the book on landed property was absorbed in the third book in the final outline (which dealt with the totality of capitalist production from the perspective of the distribution of surplus value). The section of the book on capital in the original outline that dealt with the circulation of capital was converted into the second book in the final outline and dealt with exactly the same issue – the circulation of capital and the realization of surplus value.[3]

This gives us the final structure of *Das Kapital*, a three volume/book work that operates at two primary levels of abstraction, ‘capital in general’ and ‘many capitals’. The analysis at the level of ‘capital in general’ is divided into two volumes. The first volume deals with the process of production of capital; and the second volume deals with the process of circulation of capital. The analysis at the level of ‘many capitals’ is presented in one volume (volume three) and deals with the totality of the process of capitalist production. Using surplus value, one of the key concepts of *Das Kapital*, as the central organizing principle, we can think of the three volumes of *Das Kapital* as dealing with, respectively, the generation & accumulation of surplus value (volume one); the realization of surplus value (volume two); and the distribution of surplus value (volume three). I will use this framework in this article.

While writing this expository article, I have adopted three strategies. First, I decided not to use any lengthy quotation from *Das Kapital*. Many times quotations from Marx become substitutes for explanantions of key concepts, and I wanted to avoid that at all costs. Second, I have decided

3 Marx could not get to the other three books in the original outline, the books on the state, foreign trade and the world market.

not to use any mathematical symbols or formalism. This is primarily motivated by my desire to make this article accessible to a wider audience, especially to those readers who might be put off by mathematical formalism. Third, I have decided not to comment on controversies that have raged in Marxian political economy since the publication of the three volumes of capital. Since this article is primarily an exposition of the argument developed by Marx in *Das Kapital*, I think I am justified in leaving out debates and discussions that came later.

This is a short article about the argument in the three massive volumes of *Das Kapital*, and so many of the fascinating details highlighted by Marx have been left out.[4] Some of the interesting issues that I have not been able to discuss in any detail are the following: abstract labour; commodity fetishism; evolution of capitalist industrial organization; technical change and profitability (which was the focus of the debate around the so-called Okishio theorem); the law of the tendential fall in the rate of profit; the Sraffa-based critique of Marx's labour theory of value and the so-called transformation problem. My intentition in this short piece is to present clearly and in an accessible manner the main lines of the argument developed by Marx, sometimes incompletely (because he could not finish the work that would later be published as volume two and three), in *Das Kapital* and to give a picture of the capitalist economy that emerge from that work. If the reader finds this exposition useful in grasping the main argument in *Das Kapital*, and it motivates her to engage with the original, the author would find his labour in writing this article more than completely rewarded.

One last introductory comment about my own interpretation and biases. Over the last few decades, and especially since the early 1980s, different interpretations of Marx's political economy have been developed. In my own development as a student and researcher in political economy, I have been influenced by one such interpretation, the so-called New Interpretation, developed independently by Duncan Foley and Gerard Dumenil in the early 1980s. Therefore, the exposition that I present in this article is close to my own understanding of the New Interpretation and of Marx's economics. I have developed this understanding during teaching an introductory and an advanced course on Marxian economics in the Department of Economics at the University of Massachusetss Amherst. I owe an enormous debt to my students for their questions and comments that helped to clarify my own thinking on Marxian political economy.

The rest of the article is organized as follows: in section 2, I discuss the arguments of volume one of Capital; in section 3, I discuss the arguments of volume two; and in section 4, I discuss the main arguments of volume three; in section 5, I conclude the discussion with some comments on the 'trinity formula', and on the profoundly contradictory nature of capitalism.

4 If a reader wishes to get a book length treatment of the issues dealt with in this article, I would recommend the following three books. Duncan Foley's 1986 book, *Understanding Capital: Marx's Economic Theory*, remains, to my mind, the best introduction to the three volumes of Capital and the subsequent developments in Marxist economics till the early 1980s. Michael Heinrich's recently translated book, *An Introduction to the Three Volumes of Karl Marx's Capital*, is a lucid introduction to *Das Kapital*. Paul Sweezy's 1942 book, *The Theory of Capitalist Development*, though dated, remains a standard introduction to some portions of the three volumes of Capital and developments in Marxist political economy till the early 1940s.

2 Volume One: The Generation and Accumulation of Surplus Value

Volume one of Capital is devoted to a study of the process of production of capital, i.e., a study of the generation and accumulation of surplus value. To understand capital, one needs to understand surplus value because capital generates and is generated by capital; but, to understand surplus value, one needs to understand value; and to understand value, one needs to understand commodity production. That is why the analysis in the first volume of Capital begins with the commodity, the 'elementary form' of wealth in capitalist socities. Marx's analysis of the commodity gave him the opportunity to refine and further develop the classical labour theory of value. Let us work through the details.

2.1 Labour Theory of Value

A commodity is any good or service that is produced for exchange. It has two aspects: usefulness and exchangeability. The first aspect of the commodity is known as 'use value'. It refers to the fact that a commodity is of use to someone – otherwise it would not be accepted in an act of exchange. The second aspect of a commodity is known as 'exchange value'. This refers to the fact that a commodity can be exchanged with other commodities.

Exchange value, or the aspect of exchangeability of commodities, has both a qualitative and a quantitative aspect. The qualitative aspect is that a commodity can be exchanged with any other commodity. The quantitative aspect is that commodities exchange with one another in definite ratios. What can account for the exchangeability of commodities, i.e., both the qualitative and the quantitative aspects of exchange value? Exchange of commodities is made possible by something that is common to all commodities. Hence the question becomes: what is it that is common to all commodities *in as much as it relates to the process of exchange*?

The classical tradition of Adam Smith, David Ricardo and Karl Marx argued that the key commonality of all commodities that can account for their exchangeability is the fact that they are all products of human labour.[5] To say that commodities are products of human labour is equivalent to saying that each commodity absorbs some portion of the total *productive labour* of society.[6] For the classical tradition, this is the genesis of the concept of 'value': a commodity has value because, and to the extent, it has absorbed a part of the total productive labour of society that involved in

5 The history of political economy offers two answers to the question: what is it that is common to all commodities in as much as this commonality relates to the process of exchange? While the classical tradition looks to the labour involved in the production of commodities as the commonality, the neoclassical tradition latches on to the usefulness of commodities as the key commonality (and calls it 'utility'). Since usefulness is a subjective aspect of a commodity and varies from person to person, especially its quantitative aspect, the neoclassical theory of value – deriving from 'utility' of commodities – is a *subjective* theory of value. On the other hand, the labour involved in production is an objective fact, no matter how difficult it is to measure. Hence, the classical theory of value, the labour theory of value, is an *objective* theory of value.

6 In volume one of Capital, Marx assumes, for the most part, i.e., other than in chapter 16, that the labour that is being discussed is *productive labour*. He discusses the distinction between productive and unproductive labour in greater detail in volume three. I will explain this important distinction when we come to volume three.

commodity production. This pins down both the qualitative and quantitative aspects of exchange value, and gives us the rudiments of a 'labour theory of value'. With this labour theory of value we get a way to understand the qualitative aspect of exchange: commodities exchange with one another because they have value, i.e., they have absorbed some portion of the productive labour of society involved in commodity production. We also have a way to approach the quantitative aspect of exchange value: commodities exchange with one another in the specific ratio that preserves equality of value in exchange. Moreover, we can measure the value of commodities in units of labour time, for instance, labour hours.

These initial concepts of the labour theory of value, which is more or less what Marx took from Ricardo, was developed further in volume one of *Capital* in two dimensions. First, Marx was clear that the labour theory of value applied to the aggregate production of commodities, not to individual commodities. Why? Because the level of abstraction in volume one of *Capital* was 'capital in general'. Thus, the analysis abstracts from the competition between many capitals so that the theory resides at the aggregate level of capitalist commodity production. More importantly, as we move to volume three, we will see that with the introduction of competition between capitals, long run prices of individual commodities will deviate from their embodied labour times (values). But the equivalence between long run prices and value will continue to hold at the aggregate level. Hence it is important to insist, as Marx does, that the key claims of the labour theory of value should be understood only at the aggregate level, not at the level of individual commodities. Second, to better understand the link between labour and value, Marx introduced some key clarifications, which can be divided into two groups, those that relate to qualitative aspects of value and those that relate to its quantitative aspects.

The qualitative aspect of Marx's clarification asks the following question: what type of labour creates value? To answer this question, Marx distinguished between *concrete labour* and *abstract labour* and asserted that value is created by abstract labour. What does this mean? Concrete labour is the specific form of human labour that creates a specific use values. For instance, the labour of a tailor, the labour of a assembly line worker in a car manufacturing factory, the labour of a computer programmer who writes code for an IT firm, are all examples of concrete labour. Since all forms of labour involved in commodity production creates value – it would make no sense to assert, for instance, that the labour of a tailor creates value but the labour of a factory worker does not – Marx argued that the labour that creates value should be understood as abstract labour, i.e., all labour involved in commodity production no matter what its concrete form.[7]

The quantitative aspect of Marx's clarification tries to answer the following question: how do we compare the quantum of value created by expenditures of different types of labour? Here Marx introduces three distinctions. First, he distinguishes between *complex labour* and *simple labour*. The latter is the expenditure of labour that has not acquired any special skills or experience; the former is labour that has acquired special skills and/or experience. Marx argues that value

7 Marx emphasized that in a commodity producing system, production is organized through exchange, i.e., all production is geared towards exchange. Thus, the process of exchange, i.e., the exchange of one commodity (a specific use value) for another commodity (a different use value), forces 'real' abstraction from concrete labour – the specific forms of labour that had created those two use values – and makes society value 'abstract' labour, i.e., forces society to use 'abstract' labour as the measure of value.

created by the expenditure of complex labour is a multiple of simple labour, where the specific multiple can be determined by computing the labour time involved in the acquisition of skills and/or experience. Second, he distinguishes between *socially necessary labour* and *socially wasted labour*. The former is the amount of labour needed to produce a commodity with the average technology and average intensity of work. Labour expended in producing a commodity that is over and above what is socially necessary is wasted and does not create value. Third, he distinguishes between *private labour* and *social labour*. The latter refers to all labour that participates in commodity production; the former refers to labour that is *not* involved in producing commodities (recall: commodities are products of labour produced for exchange and not for use). Marx argues that only social labour creates value, which is almost true by definition.

We can summarise this discussion of the labour theory of value with the following proposition: *a commodity has value only if and to the extent that it has absorbed a part of the total socially necessary abstract labour involved in commodity production;* in the aggregate, the total labour expended in the production of commodities during a given period is the total value added to the bundle of commodities.

How is the value of commodities expressed? In a society where commodity production has taken hold, money emerges as the social device to express the value of commodities that is separate from individual commodities. Marx develops the concept of money from within the logic of commodity production in three simple steps. Let us see how.

2.2 Money, or the Form of Value

To begin with, consider the exchange between two commodities, say A and B. Suppose 2 units of A exchange for 1 unit of B, i.e., 2A=1B. In this relationship of equivalence, which Marx refers to as the *relative form of value*, commodity A occupies the relative position and commodity B occupies the equivalent position, i.e., the value contained in 2 units of A (the commodity in the relative position) is expressed in 1 unit of B (the commodity in the equivalent position). But the universe of commodities is not limited to these two, A and B. In fact, A can exchange with not only B, but with all other commodities, C, D, E, and so on, with each exchange occuring in a specific ratio. For instance, 2A = 1B = ½C = 3D = ¼E = …, or equivalently, A = 1/2 B = 1/4 C = 3/2 D = 1/8 E … This immediately takes us to the second step of the argument, to a form of equivalence that Marx calls the *expanded form of value*. Now, the value contained in 1 unit of A is expressed by definite quantities of *all* other commodities; hence this is an expanded form of value. But the chain of equivalences which captures the expanded form of value can lead to a qualitative change; it can be flipped around as 1/2B = 1/4C = 3/2D = 1/8E = … = A, so that now commodity A occupies the equivalent position, with all other commodities occupying the relative position. With this we come to the third step of the argument, to an equivalence that Marx calls the *general form of value*, where commodity A has become the ‘general equivalent’ because it expresses the value contained in *all* other commodities. Once a general equivalent becomes socially accepted, that becomes money.

Let us put down the definition that emerges from the above argument. *Money is a socially accepted general equivalent.* When Marx was writing, economies used commodities like gold or

silver as money.[8] But from around the middle of the twentieth century, capitalist economies have moved away from the use of commodity money. It is important to recognize that the basic logic of money as a socially accepted general equivalent remains operational even in the case of contemporary non-commodity money systems. The only difference is that the *form of money* has changed. Instead of a commodity like gold, a piece of paper issued by a country's Central Bank or the electronic records in commercial bank accounts, function as the general equivalent. The function of money as the social device to express the value contained in commodities remains unchanged. Drawing on discussions in *Grundrisse*, one can make a stronger statement: money will be there as long as commodity production exists because society will require a social device to express the value embedded in commodities that is separate from individual commodities.

Once we have understood the origin and functions of money in capitalist economies – to act as a store of value, as a medium of exchange, as an unit of account – we can grasp two important concepts: *monetary expression of labour time* (MELT) and *price*. The MELT is a conversion factor that Marx frequently, and implicitly, used to move back and forth between value magnitudes (measured in units of labour hours) and monetary magnitudes (measured in units of the monetary unit of account, the rupee, for instance). It was highlighted in Foley (1982) and is defined as the ratio of the total value added in the production of all commodities over some time period (which is what contemporary economists call the gross domestic product), measured in monetary units, and the total amount of productive labour involved in the production of those commodities, measured in hours of labour. Thus, *the MELT is the monetary expression of one hour of social labour and its unit of measurement in India would be rupees per hour of social labour*.

For instance, if the total value added in the capitalist sector of the Indian economy in 2014-15 was Rs. 100 trillion and the total labour input in this production was 10 trillion hours, then the MELT was 10 rupees per hour of social labour. Once we have the MELT for a particular economy for a given year, we can easily convert between value and monetary magnitudes. If the MELT is 10 rupees per hour of social labour then 100 units of value (measured in labour hours) is equivalent to 1000 rupees; similarly, 100 rupees is equivalent to 10 hours of social labour.

The *price* of a commodity is the amount of money for which one unit of that commodity can be exchanged. To anticipate some discussion that will come few sections down the line, notice that here we already have a basis to understand the possible *deviation* of value and price. Why? The price of a commodity, being a quantity of money, can be converted into its social labour time equivalent by dividing the price with the MELT. This would give us the social labour time equivalent realized by the sale of the commodity. On the other hand, the value of the commodity is the socially necessary labour time *actually* expended in its production, what can be called the embodied labour time. Is there any reason for the social labour time equivalent of the price of a commodity to coincide with its socially necessary embodied labour time? As long as we abstract

8 Marx does discuss paper money issued by the State that is no longer convertible to gold. But in this discussion gold still functions as the general equivalent and hence the money commodity, i.e., it was still a commodity money system. In such a system, a market develops where gold and paper currency is exchanged. When the issue of paper money is relatively small, it exchanges at par with gold money. But when there is an excessive issue of paper money relative to the needs of circulation, it sells at a discount with respect to gold. The commodity money system, with or without paper money, is quite different from contemporary non-commodity money systems.

from ‘many capitals’, i.e., as long as we operate at the level of abstraction proper to volume one and two, the two labour time magnitudes will coincide. Once we introduce competition between capitals, i.e., when we move to volume three, we will see that there are sound theoretical reasons to believe why they will *not* coincide.

Now that we have understood the concept of money and seen how it emerges from within the logic of commodity production itself, we are ready to begin the study of capital.

2.3 Capital, or Self-valorizing Value

Consider the two forms of circulation observed in capitalist societies: (a) selling in order to buy (sale followed by purchase); and, (b) buying in order to sell (purchase followed by sale). The first can be represented as C-M-C’ and is called the ‘simple circulation of commodities’ by Marx; the second can be represented as M-C-M’, and is called the ‘circulation of money’ by Marx. What is the difference between these two forms of circulation?

In the first form of commodity circulation, C-M-C’, an economic agent with some commodity, C, comes to the market, sells it for the sum of money, M, and purchases some other commodity, C’, with the proceeds of the previous sale. The aim of this form of commodity circulation is qualitative transformation of one commodity into another, i.e., of C into C’, which is effected through exchange, and ultimately points towards an aim in consumption, i.e., outside production. Hence, the simple circualtion of commodities ends with C’.

The second form of commodity circulation, M-C-M’ is very different from the first. Here, an economic agent comes to the market with a sum of money, M, purchases some commodity, C, and then returns to the market to sell that (or another commodity) for a sum of money, M’. The starting and end points of the circulation process, being sums of money, are qualitatively identical. Hence, the only possible motive for engaging in this process of circulation can be a quantitaive increase in the sum of money. The very logic of the process dictates that M’ must be larger than M; othewise the process becomes meaningless. Moreover, by its internal logic, the process of circualtion represented by M-C-M’ re-creates its beginning at the end of each cycle. This is because the endpoint is a sum of money (possibly larger in magnitude), just like the beginning, so that it can potentially function as the beginning of a new cycle, M’-C’-M’’.

Recall that money is a social device to express the value (of commodities). Hence, M-C-M’ represents a process whereby value, by moving through the circuit and changing its form (from money to commodities, and then back to money), not only preserves itself quantitatively, but increases in size, or in Marx’s terminology, valorizes itself. The increment in value, M’-M, is known as *surplus value* and M-C-M’ is called the ‘general formula for capital’ by Marx. Thus, with an investigation of the two forms of circulation, we have arrived at the following definition: capital is value in motion that increments itself in size, i.e., to use Marx’s terminology, *capital is self-valorizing value*.

2.4 Surplus Value

How does value in motion valorize itself? What is the source of surplus value? Where does the surplus value come from? These questions attain significance when we realize that, in Marx's analysis in volume one of *Capital*, every act of exchange is an *exchange of equivalent magnitudes* (of value). Even if there were cases of unequal exchange, since the gain of one party would be exactly equal to the loss of the other party in that exchange, they would not be able to explain the emergence of surplus value at the level of the aggregate capitalist economy – one party's gain would be cancelled by another party's loss when we aggregate across all transactions. Hence, Marx sets himself the challenge of explaining the origin of surplus value when all exchanges are instances of equal exchange.

2.4.1 The General Formula for Capital, or The Circuit of Capital

Let us return to the general formula for capital: M-C-M'. The first phase of the formula is an act of exchange: M-C. Since we are only considering cases of equal exchange, surplus value cannot arise in this phase. Similarly, the second phase is also an act of (equal) exchange: C-M'. Hence, surplus value cannot arise in this phase too. The inescapable conclusion is that surplus value must arise *in between* the two phases of circulation of the general formula for capital. What happens in between the two phases of circulation? Between the two phases of circulation is located the process of production. Thus, to understand the origin of surplus value, we need to leave the sphere of circulation and study the process of production of commodities in capitalist firms.

We can begin our study by expanding the general formula for capital in two steps. In the first step, we represent capital as M-C-C'-M'. Here we make explicit the fact that the commodity purchased in the first phase, C, is different from the commodity sold in the second phase, C'. Without this qualitative difference between C and C' surplus value cannot be generated *in the context of equal exchange*. This is because the same commodity, C, cannot have two different magnitudes of value, one when it is purchased and another (higher value) when it is sold. But with C and C' recognised as two different commodities, we can have equal exchange at the two ends of M-C-C'-M' and yet allow for the possibility of generation of surplus value because the value of C' can be greater than the value of C. To see how the value of C' can be greater than the value of C, we expand the formula, in a second step, by making explicit the process of production hidden within M-C-C'-M' as follows: M-C {LP, MP} … (P) … C' - M'. Here (P), the new element in the formula, refers to the process of production, with the letter P referring to the actual production of commodities and the parentheses highlighting the fact that the process of circualtion is interrupted during the production process.

The expanded general formula of capital, also referred to as the 'circuit of capital', represents the operation of a typical unit of industrial capital (organized as a capitalist firm), or equally well, the aggregate of industrial capial (the whole capitalist economy involved in

commodity production).[9] Our main aim is to explain how the value of C' can be greater than the value of C. But what does C and C' represent? C represents the initial bundle of commodities that the capitalist firm purchases, and C' represents the finished commodities that the same firm sells. To see how the value of C' can be greater than the value of C, let us trace the flow of value through the circuit of capital.

The capitalist starts with a sum of money, M, enters the market to purchase the commodity bundle, C. There are two very different types of commodities in the commodity bundle, C. The first, MP, is the means of production – the raw materials, the machinery, the power, the fuel, in brief, all the non-labour inputs to production – and the second, LP, is labour-power (the labour input to production). The value of C is equal to sum of the value of the MP and LP. When we turn to the bundle of finished commodities, C', we see that its value can come from two sources: the value transferred by MP used up during production, and the value added by the expenditure of labour. Since MP can at most transfer its own value to the finished product, we reach the important conclusion that the only source of increment in value, i.e., surplus value, can be the commodity LP. But what is LP? LP refers to the commodity 'labour-power', the ability to work. When this commodity is used, i.e., when workers work, the result is labour, the actual expenditure of human energy in carrying out some specific tasks. And labour creates value.

So here we have the secret of the origin of surplus value. The capitalist purchases labour-power at its value. When labour-power is put to use in the process of production, i.e., when workers work on the raw materials, value is added by the labour expended. Therefore, the only way that surplus value can be generated is if the value added by the use of labour-power (expenditure of labour in production) is greater than the value of labour-power (the commodity purchased by the capitalist). But, what does it mean to say that the value added by the use of labour-power in production is greater than the value of labour-power? To answer this question, we need to think carefully about the value of this unique commodity, labour-power.

2.4.2. The Value of Labour-Power

Workers sell each unit of labour-power, say each hour, in the market for a price known as the *wage rate*. Thus, the wage rate is the amount of money needed to purchase one unit of labour-power. If we divide the wage rate by the MELT, we get the social labour time equivalent of each hour of labour-power. For instance, if the working day is 8 hours long and the daily wage is Rs. 40, the wage rate is 5 rupees per hour of labour-power. If the MELT is 10 rupees per hour of social labour, then the value of labour-power is ½ hour of social labour per hour of labour-power, i.e., for each hour of labour performed, workers get back ½ hour of social labour in return, in the form of the

9 The term 'industrial capital' should be understood broadly as referring to capital that is involved in the production of commodities, which can be goods or services. It does not refer to industrial production only. Marx uses this term to distinguish capital involved in production from 'merchant capital', which is involved in the purchase and sale of commodities and 'usurious capital', which is involved in lending and borrowing of money. Both these forms of 'capital' predate 'industrial capital' and are characterised by the fact that they appropriate value through unequal exchange but do not organize the production of commodities and the concommitant generation of surplus value.

hourly wage rate.[10] Following Duncan Foley (1982a; 1986), l*et us define the value of labour-power as the social labour time equivalent of each unit of labour-power*. The value of labour-power can be computed as the ratio of the wage rate and the MELT.

For a capitalist economy to be viable, i.e., for surplus value to be generated, the value of labour-power must be less than 1. Why? The value of labour-power is the ratio of the wage rate and the MELT. Recall that the MELT is the monetary representation of one hour of social labour. Thus, the value of labour-power is the ratio of: (a) the social labour time equivalent of the wage rate (the numerator), and (b) value created by the use of one hour of social labour (the denominator). The difference between the denominator and the numerator of this ratio is precisely surplus value. Thus, the only way that surplus value can be generated is if the ratio representing the value of labour-power is less than 1, in which case the value added by one hour of social labour will be greater than what the worker get back for each hour of labour-power sold (as the social labour time equivalent of the wage rate). Since workers get back, in wages, less value than what they add to the product by the use of their labour-power, this leads to an important conclusion: *surplus value arises from the exploitation of the working class*.

The existence of surplus value, the one and only source of income of the capitalist class (and its various fractions), can also be illustrated through a metaphor that Marx used in volume one of *Capital*. Here the total labour time of productive workers in a capitalist society is viewed as one working day. Marx notes that we can divide up the working day into two parts. The first part represents the portion of the working day that the working class works to reproduce the value of the wage, i.e., to produce the commodities it will consume with its wage income. Hence, we can call this portion of the working day the *paid labour time* and the labour corresponding to this time period, *necessary labour*. The other part of the working day represents the portion of the working day during which the working class works not for itself, but for the capitalist class. During this part of the working day, the working class works to create the primary source of the income stream of the capitalist class: surplus value. Hence, we can call this portion of the working day the *unpaid labour time* and the labour corresponding to this time period, *surplus labour*. The existence of surplus labour makes it abundantly clear that capitalism rests on the exploitation of the working class, on the ‘tribute annually extracted from the working class by the capitalist class’, just like feudalism rested on the exploitation of serfs and slave society rested on the exploitation of slaves.

A question arises immediately. What ensures that the value of labour-power is always less than 1? What ensures the continued existence of surplus labour time? We will return to this question soon but a quick answer, anticipating some discussions further on, is the following: the existence of what Marx called the ‘reserve army of labour’ ensures the continued existence of surplus labour time in capitalism. But before I move on to the next point, let me clarify one issue and introduce some useful terminology.

The clarification relates to the fact that there are at least two different ways to think of the value of labour-power. What I have presented above is the non-traditional way of thinking about

10 Here we use the implicit assumption that each hour of labour-power sold by an average worker is converted, on average, into one hour of labour. The fact that the extraction of labour from labour-power is not trivial, and requires a whole technology of supervision and surveillance is quite true. We ignore these issues for ease of exposition.

this issue, following the work of Duncan Foley (1982a, 1986). But there is a more traditional way to think of the value of labour-power too. This conceptualizes the value of labour-power as being determined, like other commodities, by the socially necessary abstract labour needed for its production. Since the ability to work inheres in the body of the worker, the production of labour-power is equivalent to the reproduction of the worker. The reproduction of the worker requires a bundle of commodities: food, clothing, housing, health care, entertaintment, etc. This is purchased by the worker with the nominal wage – 'the equivalent of labour-power expressed in money' – that she earns by selling her labour-power. Hence, in this traditional approach, the value of one unit, say one hour, of labour-power is the value of, i.e., the socially necessary abstract labour required to produce, the commodity bundle consumed by the average worker per hour of the sale/use of labour-power. Let us return to our example: a typical worker recieves Rs. 200 for a 8 hour day. Thus, the value of an hour of labour-power is the value of the commodity bunble purchased by the worker with Rs. 200 divided by 8. Since each hour of the use of labour-power creates one unit of value, the value of an hour of labour-power becomes the ratio of (a) the value of the commodity bundle purchased with the wage income of Rs. 200 (the numerator), and (b) the value created by the use of 8 hours of labour-power (the denominator).

Comparing this definition with the one given above, we can see that the two are identical when prices are proportional to values of commodities, which is precisely what holds at the level of abstraction at which volume one and two operate. But when prices deviate from values, which is what holds when we move to volume three, then the two definitions no longer coincide. Why? The reason is that when prices deviate from values, the price of each commodity in the typical worker's commodity bundle no longer reflect its value (embodied labour time). Thus, the social labour time equivalent of the price of a commodity does not coincide with the embodied labour time of the commodity. Hence, the value (embodied labour time) of the whole bundle of commodities purchased by the wage income no longer coincides with the social labour time equivalent of the wage income.

The upshot of this discussion is that if we use the traditional approach, then the value of labour-power changes when we move from the analysis in volume one to volume three. To avoid this problem, one can use the non-traditional approach, i.e., use Duncan Foley's approach, and define the value of labour-power as the social labour time equivalent of the wage rate (computed as the ratio of the nominal wage rate and the MELT).

2.4.3 Some Terminology and Three Ratios

At this point, we can introduce some terminology that Marx uses. Returning to the typical industrial capitalist firm at the beginning of the circuit of capital, we can divide the sum of money that starts off the circuit into two parts. One part is used to purchase means of production. Marx refers to this as 'constant capital'. This value is transfered to the finished commodity as is, i.e., without any increment; hence the prefix 'constant' in constant capital.[11] The other part is used to purchase

11 To be more precise, constant capital refers to the value of the means of production *used up* during production. Marx often works with the simplifying assumption that all means of production are used up in one cycle of production.

labour-power. Marx refers to this as ‘variable capital’, also known as the wage bill, because the value represented by this sum of money increases when added to the value of the finished commodity; hence the prefix ‘variable’ in variable capital. To see this, recall that the use of labour-power in the process of production adds value to the finished commodity. Hence the value of the finished commodity is the sum of constant capital (value transferred from the means of production used up) and the ‘value added’ (by the use of labour-power). We know that the value added by the use of labour-power is greater than the value represented by the wage bill, the difference being the surplus value. Hence the value added by the use of labour-power is the sum of variable capital and surplus value. We can summarize this with the well-known formula: *the value of the commodity is the sum of constant capital, variable capital and surplus value*. We are now ready to define three important ratios.

The first is the ‘rate of surplus value’, which is defined as the ratio of surplus value (additional value created by workers that is not returned to them in their wage) and variable capital (the wage bill). In terms of labour hours, the rate of surplus value is the ratio of surplus labour time to necessary labour time. Thus, it is the ratio of the value that is extracted from workers for each unit of the wage bill, or, to put it in another way, it is the amount of surplus labour that the working class has to perform per hour of necessary labour. Thus, it represents the degree of exploitation of the working class by the class of industrial capitalists.

The second is the ‘organic composition of capital’, which is defined as the ratio of constant capital and variable capital. It represents the ratio in which the capital outlay – the sum of money that starts the circuit of capital – is divided between purchasing non-labour and labour inputs to production. Hence it approximately represents what contemporary economists call the capital intensity of production, i.e., how much non-labour inputs are used by each unit of labour-power.

The third ratio is the ‘rate of profit’, which is defined as the ratio of (a) surplus value, and (b) the sum of constant and variable capital, i.e., total capital outlay. The rate of profit represents the income of the whole capitalist class as a proportion of its total capital outlay. From the perspective of the capitalist class, there is no difference between the two components of capital outlay, constant capital and variable capital, as far as the return on capital outlay (investment) goes. The capitalist is only concerned about the return on the total investment, the sum of constant and variable capital. This is the structural reason for the inability of capitalists to recognize profit income as the unpaid labour time of workers or to accept the existence of exploitation in capitalist economies. To highlight these aspects in the rate of profit, Marx divides both the numerator and denominator in the expression for the rate of profit with variable capital, to get an useful expression for the rate of profit: it is the ratio of (a) the rate of surplus value (numerator), and (b) one plus the organic composition of capital (denominator).[12] Written in this form, it is easy to see that the rate of profit

Under this assumption, constant capital is also the sum of money used to purchase the means of production. When some portion of the means of production, for instance machinery, lasts for many cycles of production, constant capital is less than the total sum of money used to purchase the means of production. For the purposes of exposition, I will assume that all means of production is used up in one cycle of production. Using more technical terminology, we can say that we are working with a pure *circulating capital* model, i.e., we are ignoring *fixed capital*.

12 If we use r, s, v, and c to represent, respectively, the rate of profit, surplus value, variable capital and constant capital, then $r = s/(c+v) = (s/v)/(1+c/v)$, where s/v is the rate of surplus value, and c/v is the organic composition of

derives from the rate of surplus value, which, in turn, represents the rate of exploitation of the working class. This simple analytical device lays bare the real source of profit in capitalism: the unpaid labour of the working class.

2.5 Absolute and Relative Surplus Value

Since surplus value is the ultimate source of the income of the capitalist class – the ruling class in capitalist societies – there is a structural pressure in capitalism to increase the rate of surplus value over time. How does this come about? Capitalism has at its disposal two very different ways of increasing the rate of surplus value. If the necessary labour time is fixed, the rate of surplus value can be increased by increasing the length of the working day. This is known as ‘absolute surplus value’. On the other hand, if the length of the working day is fixed, the rate of surplus value can be increased by reducing necessary labour time. This is known as ‘relative surplus value’.

During the early phase of capitalist development, when the productivity of labour is low, absolute surplus value is the main method by which the rate of surplus value is increased. With the productivity of labour low, because the techniques of production are still relatively less capital intensive, the capitalist class pushes to increase the length of the working day to absurd limits, even as the real wage – ‘the means of subsistence placed at the disposal of the worker’, i.e., the necessary labour time – remains fixed (due to the abundant supply of labour). As the the reserves of labour gradually dry up and the working class gets organized, it fights back to limit the length of the working day to a ‘normal’ duration. The epic struggles of the working class in mid-nineteenth century England that resulted in the Factory Acts, becomes intelligible once we look at them through the lens of absolute surplus value.

Once the struggle of the working class has forced the length of the working day to be reduced to and then fixed at a normal duration, it becomes a structural necessity of the capitalist system to increase the productivity of labour. This is because, with the length of the working day fixed, the only way to increase the rate of surplus value is to reduce necessary labour time. If the productivity of labour increases, a smaller fraction of total social labour time would be enough to produce the bundle of commodities consumed by the average worker, i.e., necessary labour time would fall. This would free up a larger portion of total labour time during which the working class would work for capital, i.e., would perform surplus labour. Thus, once capitalism has developed beyond the stage when the length of the working day can still be increased, its technoligical progressivity comes to the fore. The structural need to increase surplus value by reducing necessary labour time accounts for one of the most important and striking features of capitalism: the constant revolutionising of the methods and organization of production with the aim of reducing the cost of production and increasing the productivity of labour.

Capitalism’s structural need to generate relative surplus value has led to an interesting pattern of historical evolution of the organization and form of production. The first change that capitalism brought about when it took over non-agriculutural production from the stage of

capital.

handicrafts was to bring together a large number of workers under one roof. This phase of development of capitalist production, called *cooperation*, witnesses increases in the productivity of labour not due to changes in techniques of production but due to savings arising from bringing together many erstwhile producers under one roof. The next stage in the development of capitalist production, called *manufacture*, witnesses a real leap in the productivity of labour due to specialization within the firm (something missing from the earlier phase of cooperation). The process of production is broken up into many parts – Adam Smith's division of labour – and workers are assigned to one or a few specific tasks. The extreme specialization leads to huge increases in the productivity of labour but at the enormous cost of deskilling of individual workers. From the perspective of capital, there is an unwanted development too: it increases the bargaining power of some of the workers associated with key steps of the whole production process. The development of *machine production and large-scale industry*, the next stage in the development of capitalist production, solves the problem of bargaining power and control from the perspective of capital. Key tasks are now performed by machines, which not only gives another enormous boost to labour productivity by making huge mechanical power available to labour-power, but also takes de-skilling of workers to the extreme: workers are converted into mere appendages of machines, where tending machines becomes their primary responsibility. All steps become routine and with it the bargaing power of groups of workers located in key stages of the production process fades away. In these insightful chapters, Marx highlights the profound ambiguity of capitalist production: while the social productivity of labour increases rapidly through cooperation, manufacture and machine production, at the same time, it dehumanizes workers, and we might now add, despoils nature.

So far the focus of the analysis has been to explain how surplus value is produced by capital. Now we turn to the complementary movement, the production of capital by surplus value, which is also known as the accumulation of capital.

2.6 Accumulation of Capital

Once the capitalist firm has sold the finished commodities, it gets back the value of those commodities in monetary form. Since the value of the finished commodities is the sum of constant capital, variable capital and surplus value, the firm now has, in monetary form, not only the original capital outlay (the sum of constant and variable capital) but also the surplus value.

The capitalist firm has at least two options regarding how it disposes of the surplus value. First, it can use it all for consumption expenditure of the capitalist class. If this is the case, there will be no investment of the surplus and production will carried out in the next period at the same scale as before. This is referred to by Marx as *simple reproduction of capital*. Second, it can use a part of the surplus value for capitalist consumption and reinvest the rest into the next cycle of production. The part of surplus value that is reinvested into production is thereby converted into capital because it becomes part of the pool of money that is used to start a fresh cycle of production of surplus value. *The reconversion of surplus value into capital can be called the monetary aspect of accumulation of capital*. It takes the concrete form of purchase of *additional* means of production (this part of the reconverted surplus value becomes part of constant capital) and/or *additional* labour-power (this part of the reconverted surplus value becomes part of variable capital). If the

reinvested surplus value is divided between constant and variable capital in the currently prevailing ratio, and the techniques and organization of production remain unchanged, then we have what Marx calls *expanded reproduction of capital*. But in many cases, the reconversion of surplus value into capital goes hand in hand with changes in the techniques and organization of production. This more general form of the expansion of the scale of production through reinvestment of surplus value is referred to by Marx as the *accumulation of capital*.

Accumulation of capital increases the scale of production and the size of the capital value because of the reinvestment of a part or whole of the surplus value. The increase in the size of capital takes two differen forms, concentration and centralization of capital. An increase in the scale of production due to reinvestment of surplus value in the same capitalist firm is known as *concentration of capital*. When part or whole of the surplus value or even borrowed money is used to facilitate mergers of two or more existing capitalist firms, this is known as *centralization of capital*. With the development of the banking and financial sector, huge pools of funds can be mobilized for mergers and acquisitions. Hence, with the growth of finance, centralization has become the main channel for the rapid increase in the size of capitals.

Three important questions arise in relation to the process of capital accumulation. First, how does the capitalist system ensure that the finished commodities are sold at their value so that the entire surplus value is realized through sale and comes back to the firm in monetary form? Second, how does the capitalist system ensure that the additional means of production (that will be needed to support the increase in the scale of production) and additional means of consumption (that will be needed for the consumption needs of the additional labour-power purchased, and possibly also increases in capitalist consumption) will be available to support the accumulation of capital? Third, what will be the impact of the accumulation of capital on the value of labour-power, and how do changes in the value of labour-power react back on the accumulation of capital? The first and second questions relate, respectively, to the problems of realization of surplus value and the problem of the correct product mix, i.e., use-value composition, of the total output. Marx deals with both issues in volume two of *Capital*, and we will come to them shortly. The third problem is dealt with in volume one, and to that we now turn.

2.6.1 Capital Accumulation and the Reserve Army of Labour

Steady and rapid accumulation of capital increases the demand for labour-power. This is because, as we have seen above, a part of the surplus value reinvested in production is spent on the purchase of *additional* labour-power. If the demand for labour-power were to continuously rise, at some point demand would outstrip the supply of labour-power. This would lead to an increase in the price of labour-power, i.e., the wage rate. If the wage rate were to increase continuously, the value of labour-power would eventually start rising. This would squeeze surplus value production, and in the extreme case might even reduce surplus value, the main source of income of the capitalist class, to zero. That would be tantamount to the end of capitalism. What mechanism is available in capitalism to prevent such an eventuality to come to pass? Marx's answer to this question was to posit the existence and reproduction of the 'reserve army of labour' or the 'relative surplus population'.

In a typical capitalist economy, the labour market can be divided into two mutually exclusive parts, the active army of labour (those who are currently employed by capitalist firms) and the reserve army of labour (the part of the working population that is currently not employed by capital but can be potentially drawn on if the need for additional labour-power arises). According to Marx, the reserve army of labour is composed of three distinct components. The first component is called the *floating reserve army*. These are the workers who have lost their jobs due to labour saving technical change – replacement of workers with machines – economic downturns and geographical relocation of production. The second component is called the *latent reserve army*. This is composed of household labour, primarily of women, and working people involved in petty commodity production, in agriculture, industry and services. Historically, the latent reserve army of labour has been drawn on, when the need arises, by increasing the labour force participation of women and the destruction of petty commodity production. The third component is called the *stagnant reserve army*. This is composed of the working population that somehow manages to carry on living in an extremely precarious way on the margins of capitalist society. They are the workers who have stopped looking for jobs due to prolonged periods of unemployment, and those who have lost their skills or whose skills have become obsolescent.

The existence and reproduction of the reserve army of labour modulates movements of the value of labour-power in such a way that continued production of surplus value is not jeopardized. During periods of rapid capital accumulation, the demand for labour-power increases. As the reserve army is drawn down, there is upward pressure on real wages. When the reserve army is reduced substantially and comes close to being completely depleted, the upward movement of real wages start outpacing the growth of labour productivity. This can lead to a decline in the rate of surplus value. The rapid rise in the labour cost of production and the falling rates of surplus value might lead to declines in the rate of profit. When this happens, it prompts the capitalist class to start searching for ways to reduce labour costs. One way to do so is to increasingly mechanise the production process, i.e., replace workers with machines. Mechanization reduces the demand for labour-power and increases its supply (by forcing unemployment on many currently employed workers) at the same time. The growth in the supply of labour-power relative to its demand starts replenishing the reserve army of labour. Once the reserve army has become large enough, it nullifies the upward movement of real wages, and eventually starts pulling it down relative to the growth of labour productivity (because a large number of unemployed workers now compete for the same job). The value of labour-power falls and the rate of surplus value starts rising again, providing a spur to capital accumulation and growth. The capitalist economy is now ready for another cycle of accumulation. Thus, this incessesant fluctuation of the pace of capital accumulation and the size of the reserve army of labour is the ‘normal’ process of growth of capitalist economies.

We are now in a position to answer an important question that was raised earlier: what ensures that the value of labour-power is always less than one, or what is the same thing, what ensures that a positive amount of surplus value is continuously generated? It is the existence and reproduction of the reserve army of labour – through labour saving technical change and business cycle downturns – that ensures that wages move within a range that is necessary to generate positive amounts of surplus value. Of course this means that one of the key mechanisms that stabilizes

capitalism and makes it viable is the reserve army of labour and this entails an enormous cost – material and psychological – of unemployment and underemployment that has to be borne by the working class.

The analysis in the first twenty five chapters of volume one, the material that we have covered so far, took us right into the heart of the process of production of capital. We have not only understood how surplus value is produced by capital, but also the how capital is produced by surplus value. Once capitalism establishes itself as the dominant mode of production, this twin processes repeat themselves endlessly, and in the process it reproduces the basic class relation of production of capitalism, what Marx calls the 'capital-relation'. This is the relationship between, on the one hand, owners of means of production and consumption, and, on the other, the proletariat – those who have no way to survive other than by selling their labour-power. This relationship becomes the basis for the endless generation and realization of surplus value.

But how did this relationship come into being? How were the conditions for its emergence created? How did the capital-relation emerge in the first place? The answers to these questions is provided by Marx through the concept of the 'primary accumulation of capital' (which has been mistakenly translated as 'primitive' accumulation of capital).

2.7 The So-Called Primitive Accumulation of Capitalism

To understand the primary accumulation of capital, it is useful to begin with the circuit of capital (the expanded general formula for capital): M-C {LP, MP} … (P) … C'-M'. Using the circuit of capital to represent the basic structure of capitalist production enables us to inquire into the conditions that need to be met to ensure the emergence of the capital-relation, and more generally, capitalism. In the last part of volume one of *Capital*, Marx argues that there are three sets of conditions that need to come about to ensure the origin of capitalism.

The first condition is that there must be accumulation of money in the hands of the class of capitalists; this condition corresponds to the beginning point of the circuit, represented by M. The second condition is that means of production, means of consumption and labour-power must be available for purchase on the market as commodities; this condition corresponds to the second step of the circuit, M-C {LP, MP}. The third and final condition is that there must be a market – the 'home market' – for the output of capitalist firms; this condition will ensure the completion of the last step of the circuit, C'-M', and realize the value of, and the surplus value embedded in, the finished commodities through sale. The whole series of complex historical processes that created these three conditions for the emergence of capitalism is referred to by Marx as the *primary accumulation of capital*.

Marx's description of primary accumulation in Britain emphasizes that the first condition – accumulation of money in the hands of capitalists – was fulfilled via two separate routes: (a) by the gradual accumulation of revenue in agricultural petty commodity production, which is nothing but the 'slow process evolving through many centuries' of the development of the capitalist farmer; and (b) by the much more abrupt and sudden emergence of the industrial capitalist through the accumulation of money as usurious and merchant capital through commercial wars, monopoly

trade, the slave trade and open loot & plunder in the colonies. The second condition – availability of labour-power, means of production, and means of consumption as commodities – was primarily met, notes Marx, through the brutal expropriation of the agricultural population through the Enclosure Movement, and that the third condition – development of a home market – was satisfied through the gradual destruction of handicraft production. While Marx noted that all the three conditions together comprise the primary accumulation of capital, he was also clear that the 'expropriation of the agricultural producer, of the peasant from the soil, is the basis of the whole process '.

With this we come to the end of the analysis in volume one of *Capital*. This analysis assumed that commodities were sold at their value – in modern terminology, Marx abstracted from problems of aggregate demand – and that the use-value compostion of the output is such as to meet all the needs for the smooth reproduction of capital. In volume two of capital, Marx returns to analyse these assumptions with a study of the process of circulation of capital, and to that we now turn.

3 Volume Two: The Realization of Surplus Value

The analysis of the process of circulation of capital in volume two of *Capital* is conducted with the help of two analytical devices, the *circuit of capital* (which we have already encountered) and *reproduction schemes*. The circuit of capital allows Marx to clearly study the process of economic growth in capitalist economies and to pose the question of aggregate demand in a transparent manner. The reproduction schemes allow Marx to study the question of the correct use-value composition of output needed for smooth reproduction of capital, and to highlight the problem of disproportionality in capitalism.

3.1 The Process of Economic Growth in Capitalism

Several important aspects of the process of economic growth in capitalist economies can be studied with the help of the circuit of capital: M – C {MP, LP} … (P) … C' - M'. Let us first understand the sense in which the circuit of capital is really a *circuit*, i.e., a circular movement. Since the beginning and endpoint of the circuit of capital are sums of money, and money is a form of value, we can think of the circuit of capital as a *circular movement of the form of value* coterminus with a quantitative increment (becaue M' is bigger than M). In the first few chapters of volume two of *Capital*, Marx shows that there are three, not one, circular movement of the *form of value* embedded in the circuit of capital.

If we start with the money form of value, we get one circuit: M-M' (which we have already studied). If we start with the commodity form of value, C, we have another circuit. To see this, let us write the circuit of capital in two consecutive periods: M – C {MP, LP} … (P) … C' - M' - C'' {MP, LP} … (P') … C''' - M''. Once the finished commodities, C', are sold and their value recovered in monetary form, M', the process is ready for the next cycle of production. The next

round of capital outlays converts the money form of value back to it commodity form, C'', and completes the circuit of commodity capital. Thus, we see that the commodity form of capital also traverses its own circuit: C – C''. In a similar manner, if we start with the productive capital (another form of value), which assumes the form of raw materials, machines, labour-power, etc., we have yet another circuit: P – P'.

Each individual unit of industrial capital moves through these three forms of value – money, productive capital, and commodity capital – as it tries to valorize itself, i.e., generate and realize surplus value. Moreover, at any point in time, some fraction of the total capital in each (industrial) capitalist firm takes one of the three forms: money, productive capital, and commodity capital. Thus, if we aggregate across all units of industrial capital at any point in time, we get a picture of the total social capital in its movement of self-valorization. What do we see?

We see that at the aggregate level, there is a constant *flow of value* through the circuit of capital, either as the flow of capital outlays (which is the first phase of the circuit), the flow of finished commodities awaiting sale (which is the second phase of the circuit) or as the flow of revenues from sale of the finished commodities (which the third and final phase of the circuit). But the completion of each phase of the circuit takes some finite duration of time. The revenue coming in from sale of finished commodities might not be immediately used for fresh capital outlays; the process of production takes a shorter or longer duration of time; and the finished commodities might take time to be sold off. The implication of this is that *stocks of value* accumulate in the capitalist economy corresponding to each phase of the circuit. Stocks of money waiting to be recommited into production comes about because revenues from sale of finished commodities takes time to be recommited to capital outlays; stocks of productive capital accumulate because the production of commodities takes time; and stocks of finished commodities accumulate as inventories because it takes time to sell the output.

To summarize, then, the circuit of the total social capital is composed of three flows – capital outlays, flow of finished commodities, and flow of revenue from sale – and, since production and realization of surplus value takes time, there is an accumulation of stocks of value in three forms: money, productive capital and commodities. The picture of the aggregate capitalist economy captured through the circuit of capital allows us to pose the question of economic growth in capitalism.

What do we mean by growth of a capitalist economy? The growth of the capitalist economy is the growth in the size of the circuit of capital, i.e., the size of the flow of value traversing the circuit. There are two independent sources of this growth. The first source is the magnitude of surplus value that is generated in each circuit during the phase of production – which is nothing but the unpaid labour time of the working class – and the second source is the speed with which the average unit of value traverses the whole circuit, starting in money form and returning to a money form. The first source is obvious because surplus value is the only source of capital; the second source arises because the sooner capital returns to a money form, after traversing the whole circuit, the sooner is it available to be recommited to prodcution more surplus value.[13] In pioneering work

13 This explains the structural need for improvements in the means of communication, transportation and financial engineering in capitalism, which lead to an increase in the speed with which value can traverse the circuit of capital.

done in the early 1980s, Duncan Foley (1982b) developed a mathematical representation i.e., a model, of Marx's theory of the circuit of capital. This mathematical model is remarkably prescient and can be used to derive many of the results about growth in capitalist economies that are currently being studied by heterodox macroeconomists.

3.2 The Problem of Aggregate Demand

The circuit of capital completes its final phase only when commodities are sold at their value. This is how the value, and more importantly the surplus value, created by the working class, is realized by the capitalist class in monetary form. However, the possible sale of finished commodities at their value creates a puzzle.

The capitalist class starts the circuit of capital with an initial sum of money, M. It uses this sum of money to purchase means of production and labour-power. In a capitalist economy, means of production and means of consumption are commodities produced by capitalists. Hence, the purchase of means of production is, at the same time, a transfer of money from one part to another part of the capitalist class. Similarly, when the wage income is used by workers to purchase their means of consumption, the corresponding sum of money returns back to a part of the capitalist class (the producers of the means of consumption). Hence, when capital outlays and purchase of means of consumption by workers is complete, the initial sum of money, M, returns to some part of the capitalist class. But here is the puzzle. The value of the finished commodities is M', and the viability of capitalism implies that M' is greater than M (because of the generation of positive amounts of surplus value). How, then, can the sum of money M realize the value of finished commodities, M', which is greater than M?

Towards the end of volume two of *Capital*, Marx offers a solution to the puzzle that was taken up later by Bukarin in his critique of Rosa Luxemburg. Marx notes that the puzzle can be solved because there is one commodity that does not need to 'realize' its value through sale. This is the money commodity, which was gold during Marx's times. Thus, a part of the total value of finished commodities, M', does not need to be realized through sale; its value is realized through production itself. Hence, as long as there is a *large and growing sector* which produces the money commodity at the 'correct' rate, the capitalist system will be able to realize the full value created in production, i.e., it will be able to solve the problem of aggregate demand.

What is the 'correct' rate of growth of the money commodity sector? During each period, the economy must produce an amount of the money commodity that is equal to the surplus value generated. As long as this is ensured, twe will have the following: the initial sum of money will be used to realize its equivalent, M, and the rest, i.e., the increment represented by the surplus value, will be realized by the fresh injection of the money commodity. Since there is growth in the mass of surplus value over time, this means that the sector producing the money commodity has to *grow* at the relevant rate. A fixed stock of the money commodity, no matter how large, will not suffice because it will eventually run out.

In contemporary capitalism, especially since the mid-twentieth century, money commodities are no longer used. So, how does the contemporary capitalist system solve the problem of aggregate demand and realize the full value of the finished commodities? The main mechanism used to solve the problem of aggregate demand in modern capitalist economies is *credit*, i.e., borrowing and lending of sums of money. Suppose a part of the capitalist class lends sums of money to another part, through the financial system, to finance capital outlays. In that case the gap in the amount of money needed to realize the full value of the finished commodities, i.e., M'-M, can be closed. Hence, the problem of aggregate demand can be solved in every period, as long as the growth of credit keeps pace with the growth of surplus value.[14]

In fact, the growth rate of the economy will increase if the growth rate of credit is increased, as long as there is a sufficiently large reserve army of labour to keep wage pressures in check (so that the rate of surplus value does not fall). This is because larger amounts of credit will free up more money to function as capital and generate more surplus value; more credit will, at the same time, also solve the 'realization problem' by ensuring the sale of the finished output.[15] Does this mean that there is no upper limit to the rate of growth of a capitalist economy? No. Marx's analysis of the circuit of capital in volume two of Capital and its elegant mathematical representation by Duncan Foley shows that there are *internal limits* to how fast a capitalist economy can grow. Given the rate of surplus value, the internal limit is determined by the minimum amount of time required for an average quantum of value to traverse the circuit of capital. This minimum amount of time is certainly much larger than zero, so that the maximum rate of growth has a finite upper bound.

3.3 Use Value Basis of the Reproduction of Capital

The reproduction of capital requires a certain use-value composition of the total output of capitalist production. When the capitalist class is ready for a fresh round of production, i.e., when the circuit of capital is to be begin anew, industrial capitalists must find on the market means of production and means of consumption in the correct quantity and proportion, the former to start the process of production anew and the latter to meet the consumption needs of the workers it will employ (as also its own, possibly larger, consumption needs). Can the capitalist system produce means of production and means of consumption in the 'correct' quantity and proportion? Marx used the analytical device of the 'reproduction schemas' to think rigorously about this question in part three of volume two of *Capital*.

Marx divides the whole of capitalist production analytically into two departments. Department I produces means of production, and Department II produces means of consumption. Now Marx asks the question: do the sizes of these departments – where we measure the size of each department, for instance, by the amount of labour-power employed – need to maintain certain

14 In contemporary economies, money is the credit extended by the Central Bank and the commercial banking system. Hence, an alternative way of making the same statement is the following: a sufficiently fast growth rate of the money supply would be able to solve the problem of aggregate demand that we have discussed here.

15 The realization problem refers to the possible problem of selling finished commodities at a price that realizes the complete value of the commodity, i.e., converts the full value of the commodity into monetary form.

proportions for a smooth reproduction of the aggreagate social capital to be possible? Marx answers this question in the affirmative, for both simple and expanded reproduction.

Consider simple reproduction, first, where the scale of production remains unchanged period after period. The scale of production can remain unchanged if the following two conditions are satisfied: (a) the value of output of department I (means of production) is exactly equal to the sum of the value of means of production used up in both departments, so that means of production are replaced withour any increment at the end of each production period; and (b) the value of the production of department II (means of consumption) is equal to the sum of the total wage income of the workers in both departments and the surplus value of the capitalists in both departments (recall that *all* surplus value must be consumed for the scale of production to remain unchanged). This immediately shows that the value of output in the two departments must bear a certain and definite relationship if both the conditions stated above are to be satisfied. If we then assume, as Marx does, that the process of production in both departments are characterised by certain fixed technical coefficients – the rate of surplus value, the organic composition of capital – then the proportionality of output, required by the above conditions, translates into the proportionality of variable capital (and hence the quantum of labour-power employed in the two departments). Marx reaches the following conclusion: if this proportion is maintained, smooth reproduction will be ensured.

Of course, the natural state of capitalist economies is not simple reproduction, but the constant growth in scale of production. Hence, Marx moves on the analyse the analogous relations of proportionality that would be required to ensure smooth reproduction on an expanded scale. While he was unable to work out the numerical example correctly in volume two, the basic intuition is very much there. If a capitalist economy is to smoothly reproduce itself on an expanding scale, then the following conditions must be satisfied: (a) the value of output of department I (means of production) must be exactly equal to the sum of the value of means of production used up in both departments *and* the additional means of production that will need to be purchased due to reinvestment of surplus value (the latter will ensure that the scale of production increases every period); and (b) the value of the production of department II (means of consumption) is exactly equal to the sum of the following: the total wage income of the workers in both departments currently employed, the wage income of the workers who will be employed by a part of the reinvestment of surplus value, the portion of surplus value that is currently consumed by capitalists in both departments *and* the surplus value that will be consumed by capitalists in the future. A similar logic as before now gives us the proportionality of employment of labour-power in the two departments that would be consistent with the satisfaction of the above two conditions. The conclusion is exactly similar to what we saw in the case of simple reproduction: if the required proportion is maintained between the two departments, smooth reproduction will be ensured on an expanding scale.[16]

We have now reached the end of the second volume of *Capital* and it is useful to take stock. The analysis in the first two volumes of capital operate at the level of abstraction of ‘capital in

16 The fact that such a proportion will ensure smooth reproduction on an expanded scale does not imply that real capitalist economists can achieve that proportion. The unplanned nature of capitalism suggests that the problems of disproportionality will always be a serious issue, and under certain conditions can lead to crisis.

general', i.e., Marx studies the relationship between the whole of capital and the whole of labour. The first two volume have explained, respectively, the processes of production of capital and the process of circualtion of capital. Thus, now we have an understanding of the process of generation and accumulation of surplus value (volume one), and the realization of surplus value (volume two). This completes the analysis of the capitalist system at the level of the aggregate relationship between capital and labour. Now we are ready to move to a lower level of abstraction, to what Marx calls the level of 'many capitals', i.e., the level of abstraction where the competition between capitals is brought back into the analysis. This is precisely the domain of volume three of *Capital*, where the totality of capitalist production is analysed from the perspective of the process of distribution of surplus value that results from the competition between capitals. To a study of this, we now turn.

4 Volume Three: The Distribution of Surplus Value

The distribution of surplus value generated in production is discussed in volume three by Marx in two analytically separate steps. In the first step, the already produced surplus value is distributed across different sectors. The mechanism that effects this redistribution is the competition between 'industrial' capitals manifested as the mobility of capitals across sectors in search of higher rates of profit. This process distributes the already generated surplus value – the production of which was analyzed in volume one – across different sectors of the economy giving rise to an average rate of profit and a corresponding set of prices of commodities known as 'prices of production'. In the second step, some of the surplus value appropriated by 'industrial' capital, analysed in the first step, is redistributed to other fractions of the ruling class as commercial profit, rent (monopoly profit, more generally) and interest. Let us study both steps of the process of distribution and redistribution of surplus value.

4.1 Emergence of Prices of Production

In the classical tradition of political economy, competition between capitals occupies an extremely important analytical position. Competition between capitals is the key mechanism through which the immanent laws of capitalism come to the fore, manifest themselves and impact the observable world. Marx shared this vision of competition with his classical predecessors. That is why he accords such an important role to competition in explaining the workings of a capitalist economy at lower levels of abstration, the level where he deals with prices, profits, rent and interest.

In the classical understanding, competition between capitals takes the form of the mobility of individual capitals across sectors of production in search of higher-than-average rates of profit. It is important to note that this is a long run description of the behaviour of capitalist economies, and the implicit understanding is that monopolistic or oligopolistic market structures cannot impede the mobility of capital across sectors over the *long run*. Hence, while the concentration and

centralization of capital is very real, as analysed by Marx in volume one of *Capital*, the development of large firms – firms with market power – does not generally annul the dynamics of competition between capitals that takes the form of the mobility of capitals across sectors in search of higher rates of profit.[17] For Marx, the mobility of capital across sectors is the key link between his analysis of value and surplus value in volume one (where he had abstracted from competition) and his analysis of prices of production in volume three (where competition is introduced and plays the key role).

Thinking of the mobility of capital across sectors in search of higher rates of profit gives rise to an interesting problem. Recall that the value of a commodity, as analysed in volume one of *Capital*, is the total socially necessary abstract labour needed for producing, and reproducing, the commodity. This total labour is the sum of *indirect labour* (the labour transferred by the means of production used up in production) and *direct labour* (the labour added to the means of production by the use of labour-power) used in producing the commodity. Now consider different branches of production, some producing consumer goods like clothing and footwear, some producing food, and some producing machines and consumer durables. Since techniques of production would vary across the different branches and commodities, the amount of means of production used per worker, i.e., capital intensity, would also vary. Thus, the organic composition of capital – the ratio of constant capital and variable capital – would vary across branches of production. The production of machines, consumer durables and luxury consumer items would certainly be more capital intensive than the production of food and many other essetial items of consumption by the working class, so that the organic composition of capital would be higher in the former than in the latter sectors of production.

The difference of the organic composition of capital across branches of production has an important implication. Consider two commodities, A and B. Suppose that the rate of surplus value – the ratio of surplus value to variable capital – is the same across all branches of production but that the organic composition of capital in the production of A is higher than the organic composition of capital in the production of B. This means that for every unit of capital invested (the sum of constant and variable capital), a larger proportion will be used to purchase labour-power, in the production of B than in A. Hence, for every unit of capital invested, the amount of surplus value generated will be higher in the production of B than in the production of A. Recall that the ratio of surplus value to the total capital invested is the rate of profit. Hence, if the commodities sell at their value, i.e., if the sale of the commodities exactly realize the value (embodied labour) of commodities, then the rate of profit earned in the production of the commodities will be different. In the example we are considering, this means that the rate of profit in the production of B will be higher than in the production of A (because the production of B generates more surplus value for each unit of capital invested, than the production of A).

Different rates of profit in the production of different commodities cannot be a stable long run pattern. This is because capitals in the lower-than-average rate of profit sectors will tend to move to higher-than-average sectors in the long run. This will reduce the output of commodities in

17 Some special industries, like the utililies (water, electricity, telecommunication, etc.), might be partly exempt from this dynamic due to state regulation.

lower-than-average rate of profit sectors and increase prices; this will, in turn, increase the rate of profit. On the other hand, the entry of capitals into higher-than-average rate of profit sectors will increase output and reduce prices in these sectors. This will push down profit rates in higher-than-average rate of profit industries. The long run equilibrium of this process of mobility of capital will be the emergence of a set of prices that will ensure equal rates of profit in all lines of production. These prices are what Marx calls 'prices of production' (what some classical economists called 'natural prices').[18]

There are many interesting points worth noting about the emergence of prices of production in the long run. The first point to keep in mind is that prices of production will necessarily diverge from values, i.e., the ratio of prices of production of two commodities will not, in general, be equal to the ratio of the value of the commodities. In fact, this is the only way in which difference in the organic composition of capital in different sectors of production can be consistent with an equalised, average, rate of profit. For instance, going back to the example of the two commodities, A and B, we see that the same rate of profit in the production of both commodities means that the price of production of commodity A (with a higher organic composition of capital) will be higher than its value. On the other hand, the price of production of commodity B (with a lower organic composition of capital) will be lower than its value.[19]

Does the divergence of prices of production from values invalidate the labour theory of value developed by Marx in volume one of *Capital*? The answer is a resounding no. The level of abstraction at which the analysis in volume one operates, it must be recalled, is 'capital in general'. Hence, the labour theory of value developed in volume one operate at the aggreagate level, i.e., at the level of the production of all commodities. This leaves open the possibility that there might be divergence of prices (of production) from values for individual commodities. Hence, we must always insist that the labour theory of value holds at the aggreagate level, and negate the misleading impression that the labour theory of value claims convergence of prices (of production) and values. The labour theory of value that Marx developed in *Das Kapital* makes no such claims, and hence the divergence of prices of production from values does not invalidate Marx's labour theory of value.

The second point follows from the first. If prices of production diverge from values of commodities, there must necessarily be a *redistribution of surplus value across sectors*. Sectors with low organic composition of capital produce relatively higher amounts of surplus value compared to sectors with high organic composition. Hence, in the process through which prices of production emerge in the long run, the former (low organic composition of capital sectors) will lose and the latter (high organic composition of capital sectors) will gain, surplus value. This means that

18 The emergence of prices of production through the redistribution of surplus value was referred to by Marx as the *transformation of values into prices of production*. There were several problems in how Marx carried out these computations in volume three of Capital. A large literature has developed investigating different aspects of this process, including solutions for Marx's errors, and is now known as the literature on the 'transformation problem'.

19 The price (of production) of any commodity is the sum of the capital outlay (constant capital and variable capital) and the 'average' rate of profit times the capital outlay. If p, c, v, and r refer, respectively, to the price of production, constant capital, variable capital and the average rate of profit, then we have the following: $p = c+v + r*(c+v)$.

the value realized in sale will, in general, differ from the embodied social labour time (value) of commodities, a point I had indicated earlier in the article.

The redistribution of surplus value across sectors that arise with the emergence of prices of production is precisely the first analytical step of the distribution of the aggregate surplus value among fractions of capital discussed in volume three of *Capital*. Marx uses an interesting metaphor to think of this of redistribution.[20] He asks us to think of the total surplus value produced in a capitalist economy over a period as a pool of unpaid labour time of the working class involved in production of commodities. Each fraction of 'industrial' capital contributes to this pool in proportion to the amount of labour-power it exploits and withdraws from the pool in proportion to the amount of capital it has invested in production, the latter ensuring that every sector of production earns the same rate of profit in the long run. We can extend this metaphor further and think of rent, interest and commercial profit as further claims by different fractions of the ruling class – landlords, money capitalists and commercial capitalists – on this pool of surplus value created by the exploitation of labour in production.

4.2 Productive and Unproductive Activities and Labour

Before we discuss the categories of rent, interest and commercial profit, we need to clarify an importan issue. This relates to the distinction in classical political economy between productive and unproductive activities and the related difference between productive and unproductive labour. Marx discusses these issues in chapter sixteen of volume one, and again in chapter seventeen of volume three. Later Marxist scholars have clarified these issues and my presentation here draws heavily on the excellent treatment of this issue in Shaikh and Tonak (1994).

To understand the first distinction, i.e., between productive and unproductive activities, we can divide the basic activities of social reproduction into two mutually exclusive and exhaustive groups: production and nonproduction. The difference between the two is crucial: while production results in the creation of new use values (wealth) on a net basis, nonproduction does not result in the creation of new use values (because it uses up wealth without creating new wealth). Thus, production is the creation of use values and nonproduction is the using up of use values. Nonproduction activities can, in turn, be divided into three mutually exclusive and exhaustive groups: distribution, social maintenance and personal consumption. Distribution involves activities that transfer use values, titles to use values or sums of money from one set of economic agents to another. Social maintenance refers to all activities that are geared towards the maintenance and reproduction of the social order. Personal consumption includes all activities involved in the maintenance and reproduction of individuals within the social order.

All schools of economic thought distinguish between production and consumption. Moreover they agree that production creates wealth and consumption uses up wealth. But there is a a key difference between the neoclassical and classical-Marxian traditions with regard to the

20 Baumol (1974) highlighted the use of this metaphor by Marx and it has been subsequently used extensively by Duncan Foley.

characterization of the activities of distribution and social maintenance. For the neoclassical (and even Keynesian) tradition, these two activities – distribution and social maintenance – are understood as production as long they are marketable and some economic agent in the economy is willing to pay for the activity or the product arising from that activity. On the other hand, the classical-Marxian tradition differs sharply from this understanding and argues that distribution and social maintenance should *not* be understood as production; rather, they should be understood as social consumption. This is because they *use up* use values (instead of creating new use values).

These alternative classifications of the basic activities of social reproduction by the neoclassical/Keynesian and classical-Marxian traditions can be summarized as follows: for the neoclassical/Keynesian tradition, personal consumption is coterminous with total consumption and total production is the sum of distribution, social maintenance and production proper; in sharp contrast, for the classical-Marxian tradition, distribution and social maintenance together make up social consumption, and the sum of social and personal consumption gives total consumption. Total production, on the other hand, is just production proper.

The first distinction allows us to separate out all labour that creates use-values, and hence value, from those that do not. Since a commodity can have exchange value only when it is a use value, all labour that is not involved in production activities cannot create value (and, hence, also surplus value). But even within the domain of production activities, which creates use values, we can distinguish three different types of labour – labour that creates use values for direct use, labour that creates use values for sale (to generate income but no profit), i.e., petty commodity producers, and labour that creates use values for sale for profit (where labour takes the form of wage-labour). According to Marx, the first type of labour creates use values, the second type creates use values and value, and the third type creates use values, value and surplus value. With this understanding, *Marx defines productive labour as all labour involved in production activities that generates surplus value*. All other labour is defined to be unproductive because it does not generate surplus value (and hence, capital).[21]

While a detailed sectoral analysis of a mature capitalist economy to identify industries that would fall within the domain of ‘production activities’ is beyond the scope of this paper – the interested reader should refer to Shaikh and Tonak (1994) – we can certainly identify two specific sectors that fall *outside the domain of production activities*: trade and finance. While all activities that are involved in the production and transportation of commodities (from the site of production to the site of consumption) are part of ‘production activities’ broadly defined, pure trading activities, which *transfer* existing use values or titles to existing use value from one economic agent to another, and financial sector activities, which *transfer* sums of money or titles to financial assets from one economic agent to another, are non-production activities. Hence these two sectors do not create value or surplus value. Thus, the total income – wages and profit, if organized along capitalist lines – generated in these sectors comes from redistribution of already created surplus value. The income of the capitalists involved in pure trading is called ‘commercial profit’; and the income of

21 According to Marx, the way we understand the difference between productive and unproductive labour is specific to each mode of production. One cannot use ahistorical criteria to pin down the difference. Moreover, the difference between the two does not have anything to do with rationality, usefulness or necessity. For capitalism, it is a narrow and precise definition based on whether that labour creates surplus value.

the capitalists involved in financial activities is broadly called ‘interest’. But before we study these two fractions of redistributed surplus value, let us study rent, another important fraction of redistributed surplus value.

4.3 Rent

Rent is the part of surplus value that is appropriated by landlords. Here the category of ‘landlord’ should be understood broadly to mean any economic agent who has private ownership of some non-produced non-financial asset that is used in the capitalist production of commodities. This asset can be land, mineral deposits, forests, rivers, or other such natural resources. The income of owners of such assets is called rent, and according to Marx, there can be two types of rent in capitalist economies, *differential rent* and *absolute rent*.

4.3.1 Differential Rent

Differential rent arises from the confluence of two factors, natural differences in the productivity of resources that are used in capitalist production *and* the private ownership of those resources. Consider a variation of the example of a waterfall that Marx uses to illustrate the emergence of differential rent in volume three of *Capital*, with two capitalists who produce textiles and need power for producing their output. Electric power can be purchased from a coal-fired power plant to run the textile mills at rupees 100 per unit of textile output. But there is an alternative source of power: a watermill that can generate electric power by converting the energy of a waterfall. The important thing is that the cost of generating electricity from the watermill is close to zero. If one of the capitalists gets access to the watermill, she can produce each unit of textile at a cost which is lower by 100 rupees than the other capitalist (who uses electricity purchased from the power plant). The lower cost of production, which arises from natural differences in the productivity relating to electricity generation from the watermill and the power plant, translates into a super-profit of rupees 100 per unit of textile for the capitalist who has access to the watermill (and waterfall).

Suppose the waterfall & watermill is not owned by the capitalist producer of textiles but by some other person – let us call this person a landlord. Since the use of the waterfall allows capitalist producers to reduce their cost of production per unit of output by 100 rupees, and thereby increase their surplus value by 100 rupees, the landlord can bargain with capitalists for a portion of the *extra surplus value*. In fact, the landlord can bargain away the whole of the extra surplus value of 100 rupees from the capitalist to whom she allows access to the waterfall (to run the watermill). Why?

If the landlord asks for more than 100, none of the capitalist will be willing to use the watermill because they would be making a loss compared to the situation when they purchased electricity from the power plant. On the other hand, if any capitalist offers less than 100 to the landlord, the latter can turn to other capitalists and ask for a slightly higher amount than what the original capitalist was offering. It will be in the interest of the second capitalist to take this offer because she would still save in terms of cost, and hence earn a higher rate of profit, compared to the situation where she was purchasing electricity from the power plant. Hence, the only situation of equilibrium will be when the landlord asks for and gets the whole of the extra surplus value. This

income of the landlord is known as *differential rent*, and is clearly a part of the surplus value generated by the capitalist (who uses the waterfall & watermill as the source of power to produce textiles).

4.3.2 Absolute Rent

Absolute rent, the second type of rent income, is the part of the surplus value that is appropriated by landlords through collusion, i.e., by coming together as a class, and is independent of differential productivities of resources. Absolute rent is determined by the monopoly power of resource owners. In eighteenth century Germany, when the class of landowners were still powerful, this might have been important, but in advanced capitalist systems, it does not have lot of importance, other than in occassional cases like the formation of the OPEC in the 1970s and their influence on global prices of oil.

4.4 Interest

Interest is the part of the aggregate surplus value that is appropriated by fractions of the ruling class who specialize in lending money to 'industrial' capitalists. To understand interest, let us study the supply and demand sides of the market for loans of money? Money accumulates in the hands of different capitalists during the process of capital accumulation and becomes the main source of loans to other capitalists. For instance, the revenue generated from sale of finished commodities might not be immediately recommited to fresh capital outlays because capitalist firms might be looking for a better time to invest and expand; or, some portion of the revenue might be kept aside after each cycle of the circuit as a depreciation fund (to be used several periods later for replacing a worn out machine at one go); or, capitalist households might save some of their income for the rainy season (which is a part of the surplus value). This pool of money, constantly regenerated by the circuit of capital, creates a potential source of supply of money that can be used for capital accumulation. On the demand side, large investments, for instance to set up a new factory or to open a whole new line of production or to purchase a new state-of-the-art machinery, often require more funds than internally generated (the revenue at the end of some cycle of their circuit of capital). Hence, this creates a constant source of demand for money to finance capital outlays.

The capitalist with money-to-spare lends it to the 'industrial' capitalist, the latter using it in the circuit of capital to generate surplus value. The typical contract between the two parties to the transaction is that the borrower will return the original sum *and* an additional sum of money, the former called the 'principal' and the latter called *interest*, to the lender after a specified period of time (known as the maturity period of the contract). The amount of the interest, expressed as a percentage of the principal and for every year of the contract, is called the annual *interest rate*. Since the lender gives the borrower the sum of money represented by the principal, to be used by the borrower for a specified period of time, the interest rate can be seen as the price of getting to use every unit of money for a given period (an year, say). The industrial capitalist uses the borrowed funds to finance capital outlays, produce commodities and realize surplus value through sale of the

finished products. A part of the surplus value is then surrendered to the lender as interest. Hence, from the perspective of the 'industrial' capitalist, the interest is a deduction from the total surplus value she realizes in her circuit of capital. What remains of the surplus value with industrial capital after the payment of interest is known as 'profit of enterprise'.

What determines the rate of interest? There is no economic principle for the determination of the interest rate, other than possibly the pressures of demand and supply of loan capital affecting the bargaining power of money capitalists. The interest rate is largely the result of bargaining between the two fractions of the ruling class: owners of money and 'industrial' capitalists. When there is an excess of funds in the capitalist system, during recessions, for instance, the bargaining power of the lenders is low and so the interest rate tends to fall and remain at low levels. When there is an excess demand for funds relative to supply, during the peak of business cycles, for instance, the opposite happens. While these general forces of demand and supply work to strengthen or weaken one or the other party involved in the transaction, in modern capitalist economies, this relationship between the two fractions of the ruling class is mediated by the Central Bank and the commercial banking (and financial) system. The overall aim of the Central Bank is to ensure conditions for capital accumulation, but it also can use its power to influence interest rates (through the purchase and sale of government debt) to tilt the power balance between the two fractions of the ruling class: owners of money and 'industrial' capitalists.

Once we understand the emergence of interest rates in capitalist economies, we are ready to grasp what Marx called 'fictitous capital'. Consider a *government bond* with the following details: the principal is 1000 rupees and the interest rate is 5 percent per annum; the maturity is 10 years; interest is paid on an yearly basis and the principal is paid back at the end of the maturity period (ten years). The government bond is like a loan contract between the government and a lender (the entity which purchases the bond). By purchasing a government bond the lender lends an amount of money (the price of the bond) to the government for a specific period (10 years, in this example). In return, the lender will get a stream of payments over nine years, in this case 50 rupees (interest) every year, and 1050 rupees (interest and principal) in the tenth year. Once there is a 'market interest rate', one can use that to *capitalize* the stream of payments that is entailed in the loan contract, i.e., one can calculate the monetary equivalent of the whole stream of future payments that will come to the purchaser of the bond. For instance, if the market interest rate is 4 percent, the capitalized value of the loan contract is 1081.11 rupees. Marx calls this, or other similar, capitalized value 'fictitious capital' because it functions like capital for the lender – it gives a return every year for 10 years – but does not actually participate in capitalist production (and hence it is fictitious). Afterall, the interest in the case of a government bond is paid out of the revenue earned by the government, not from the surplus value generated by a capitalist firm. Moreover, the capitalised value can fluctute wildly with changes in the market interest rate. For instance, when interest rates increase, a whole lot of fictitous capital is just wiped out.

Another example of 'fictitious capital' is the price of a non-produced resource like land. Since ownership of the land entails a stream of rent payments in the future, the capitalized value of these prospective rent payments can generate a market price of the plot of land. For the owner of the plot of land, the price of the plot of land functions like capital, generating a stream of profit-like

income, even though the land might not be incorporated in the process of capitalist production (it might have been rented out to build residential apartments, for instance).[22]

4.5 Commercial Profit

Commercial profit is the part of surplus value that is appropriated by fractions of the ruling class who specialize in ‘pure trading’, i.e., transfer of ownership of commodities or titles to commodities. To understand ‘commercial profit’, consider a vertically integrated capitalist firm which not only produces commodities but also maintains network of shops to sell the commodities to the ultimate consumer. The only thing that happens in the act of selling is transfer of ownership from the firm to the consumer. Suppose this firm realizes 100 rupees of surplus value for each unit of the commodity that is produced and sold. Since value is created only in the process of production, understood here as production *and* transportation of the commodity, the whole set of activities involved in selling the commodity, i.e., pure trade, are supported by the value, and hence surplus value, created in production and transportation. One can say that the set of activities involved in pure trade are essential for the capitalist firm, not because they produce surplus value, but because they help in *realizing* surplus value. Afterall, without selling the commodity, the firm cannot realize the value, and hence the surplus value, embedded in it.

Now suppose the firm gets broken into two firms, the first one producing the commodity and transporting it to the location where it is sold, and the second specializing in pure trade, i.e., selling the commodity to the ultimate consumer. Comparing these two firms to the vertically integrated firm discussed above, we see that the second firm cannot create any surplus value. This is because all it does is transfer ownership of the commodity to the consumer. While the second firm creates no surplus value, nonetheless it is essential for the capitalist economy. This is because it helps in realizing the surplus value created during production. The total income, and hence also the profit, of the second firm comes out of the total surplus value generated in the first firm (which is also the total surplus value realized by the vertically integrated firm). How does this happen? The first firm sells the commodity to the second firm at a price which is lower than the value; the second firm sells the commodity to the final consumer at its value. Thus, this is a mechanism whereby the two firms share in the total surplus value realized by the vertically integrated firm. The first firm is willing to give up a part of the surplus to the second firm because the latter helps in realizing the surplus value generated by it. This is the source of ‘commercial profit’.

22 The discussion of fictitous capital allows one to understand how non-produced assets like land and financial assets like stocks and bonds, or more exotic financial assets like derivatives, are priced. Hence, it addresses an apparent paradox for the labour theory of value that there are items in capitalism which command a price but have no value, i.e., have zero embodied socially necessary abstract labour.

5 Conclusion

The three volumes of *Capital* provide us with a comprehensive understanding of the *structure and long run dynamics* of capitalist economies. Volume one analyses the process of production of capital, i.e., the generation and accumulation of surplus value. Volume two studies the process of circulation of capital, i.e., the conditions for the smooth reproduction of capital. Together, the analysis in these two volumes give us a complete picture of the important tendencies that emerge in capitalist economies on the basis of the relationship between capital and labour at the aggregate level only. In the third volume of Capital, Marx operates at a lower level of abstraction by analysing the totality of capitalist production from the perspective of the distribution of surplus value. The key mechanisms underlying the distribution of surplus value is the competition between capitals (that takes the form of mobility of capital across sectors in search of higher rates of profit), and bargaining between industrial capital and owners of natural resources, and bargaining between different fractions of the capitalist class.

By the end of volume three of Capital, after we have studied the various forms in which surplus value is redistributed in capitalist economies, and grasped how portions of surplus value become the sources of income of important fractions of the ruling class, we are ready to understand the importance of the 'trinity formula', which, according to Marx 'holds in itself all the mysteries of the social production process'. The trinity formula, or what Marx sometimes refers to as the 'trinity form', refers to the three fundamental social classes in capitalism and their income streams: capital – profit (profit of enterprise and interst); landowners – rent; labour – wages. From the perspective of 'vulgar economics', this trinity form is often understood as showing the share of the net output that goes to each of the three 'factors of production', i.e., land, labour and capital. Each of these factors of production, argues vulgar economics, contributes to the output. Each factor get a share of the output in the proportion in which it had contributed to the output. Land gets rent; labour gets wages; capital gets profit. Hence, there is no exploitation.

The analysis of the capitalist mode of production in the three volumes of *Capital* pulls the rug from under this fairy tale. Once we have followed Marx through the three volumes of Capital, we know that surplus value is the result of unpaid labour of the working class involved in production. We also know that the aggregate surplus value generated in production is then distributed and redistributed, through various channels and using varied mechanisms, across capitalist society and ends up as the income streams of different fractions of the ruling class. Hence, the trinity form, according to Marx, shows that profit of enterprise, interest, and rent are merely portions of surplus value. Unlike the fairy tale of vulgar economics, we see clearly in *Das Kapital* that incomes of various fractions of the ruling class do not arise to compensate them for their contribution to production; it derives from the unpaid labour of the working class involved in capitalist production. Since surplus value is created by the unpaid labour of workers, the whole edifice of ruling class incomes is based on exploitation. Capitalism, like all other class divided societies, rests on the exploitation of one class by another. It is one of the greatest achievements of Marx that he could demonstrate this with uncanny precision and true scientific rigour.

At the end of the three volumes of Capital, we also get a picture of capitalism as a profoundly contradictory system. On the one hand, it is inherently progressive in terms of technological change and growth in the productivity of social labour. And in this respect, it is unlike, and far superior to, all previous modes of production. On the other, the immense possibilities opened up for human welfare by the technological progressivity of capitalism is caught up in the narrow confines of profit maximisation and mindless capital accumulation. Hence, its technological progressivity is blind to the enormous costs it imposes on labour and nature, the two fundamental sources of wealth. There is no other way to realize the possibilities of human welfare opened up by capitalism, one cannot but agree with Marx, than to transcend capital.

References

Baumol, W. J. (1974). The Tranformation of Values: What Marx "Really" Meant (An Interpretation). Journal of Economic Literature, 12(1), 51-62.

Engels, F. (1891). Introduction to Karl Marx's Wage Labour and Capital. Retrieved on 21 August 2017 from https://www.marxists.org/archive/marx/works/1847/wage-labour/

Foley, D. K. (1982a). The Value of Money, the Value of Labour Power and the Marxian Transformation Problem. *Review of Radical Political Economics*, 14(2), 37-47.

Foley, D. K. (1982b). Realization and Accumulation in a Marxian Model of the Circuit of Capital. *Journal of Economic Theory, 28*(2), 300-319.

Foley, D. K. (1986). *Understanding Capital: Marx's Economic Theory*. Cambridge, Mass.: Harvard University Press.

Heinrich, M. (2013). *An Introduction to the Three Volumes of Karl Marx's Capital.* Translated by Alexander Locascio. New Delhi: Aakar Books for South Asia.

Marx, K. (1993 [1857-58]). *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft).* Translated with a foreword by Martin Nicolaus. London.: Penguin Books in association with New Left Review.

Marx, K. (1970 [1859]). *A Contribution to the Critique of Political Economy.* Translated from the German by S. W. Ryazanskaya, edited by Maurice Dobb. New York: International Publishers, Inc.

Marx, K. (1990 [1867]). *Capital: A Critique of Political Economy. Volume One.* Translated by Ben Fowkes. Introduced by Ernest Mandel. London.: Penguin Books in association with New Left Review.

Marx, K. (1992 [1884]). *Capital: A Critique of Political Economy. Volume Two*. Translated by David Fernbach. Introduced by Ernest Mandel. London.: Penguin Books in association with New Left Review.

Marx, K. (1991 [1894]). *Capital: A Critique of Political Economy. Volume Three*. Translated by David Fernbach. Introduced by Ernest Mandel. London.: Penguin Books in association with New Left Review.

Rosdolsky, R. (1977 [1968]). *The Making of Marx's 'Capital'. In Two Volumes. Volume I.* Translated by Pete Burgess. London: Pluto Press.

Shaikh, A. and Tonak, E. A. (1994). *Measuring the Wealth of Nations: The Political Economy of National Accounts.* Cambridge, UK.: Cambridge University Press.

Sweezy, P. M. (1942). *The Theory of Capitalist Development: Principles of Marxist Political Economy.* New York: Monthly Review Press.