Chapter 1: Introduction

A "macro-monetary" interpretation of Marx's theory

> Capitalists are like hostile brothers who divide among themselves the loot of other people's labor. (MECW.31: 264 [TSV.II: 29])
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> Before production began, we had a capital of £500. After production is over, we have the capital of £500 plus a *value* increment of £100. (C.III: 124)
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> The exact development of the *concept of capital* [is] necessary, since it [is] the fundamental concept of modern economics, just as capital itself, whose abstract, reflected image [is] its concept …, [is] the foundation of bourgeois society. (G: 331; brackets in the translation; emphasis added)

This chapter introduces the main characteristics of my "macro-monetary" interpretation of the logical method of Marx's theory that are especially crucial for an understanding of Marx's theory of prices of production and the "transformation problem". Those characteristics are: (1) the *total surplus-value* in the economy as a whole *is determined logically prior* to its division into individual parts (average industrial profit, commercial profit, interest, and rent); in other words, the *production* of surplus-value is theorized prior to the *distribution* of surplus-value; (2) the subject of the theory throughout is a "*single system*" – the actual capitalist economy – which is first analyzed at the macro level of the total economy and is then subsequently analyzed at the micro level of individual industries; (3) the logical framework of Marx's theory of the production and distribution of surplus-value is the *circuit of money capital*, which is expressed symbolically as: **M – C … P … C' – M'**, where **M' = M + ΔM**, and the main goal of the theory is to explain the origin and magnitude of **ΔM**; (4) the initial money capital **M** at the beginning of the circuit of money capital is *taken as given,* as initial data, both in the macro theory of the total surplus-

value and in the micro theory of the individual parts of surplus-value; (5) the given initial **M** is *eventually explained* in two stages, first partially at the macro level and then more completely at the micro level; and (6) the variables in the theory are determined according to the logic of *sequential determination*, in the above senses.

It will be argued in this book that, if Marx's logical method is interpreted in this way, then there is no "transformation problem" in Marx's theory, and that Marx's theory of prices of production is logically coherent and complete.

Chapter 2 presents a mathematical summary of this macro-monetary interpretation of Marx's theory of value and surplus-value and prices of production; the reader might want to refer at times to the Chapter 2 while reading Chapter 1.

1. The prior determination of the total surplus-value: macro before micro

The first important feature of Marx's logical method is the fundamental premise that the total amount of surplus-value is determined logically prior to the distribution of surplus-value, i.e. prior to the division of the total surplus-value into individual parts (equal rates of industrial profit, commercial profit, interest, and rent). In other words, the *production of surplus-value* is theorized prior to the *distribution of surplus-value*. Thus, there are two main stages of Marx's theory, and there is a clear logical progression from the first stage to the second stage; i.e. from the prior determination of the magnitude of the total surplus-value to the subsequent determination of the individual parts. The total surplus-value is taken as a predetermined given in the subsequent division of this total amount into the individual parts. In terms of modern economics, Marx's theory begins at the macro level and then proceeds to the micro level.

Other authors who have also emphasized the prior determination of the total surplus-value in Marx's theory include Paul Mattick, Roman Rosdolsky, Enrique Dussel, David Yaffe, and Duncan Foley.

This logical progression from the total surplus-value to the individual parts of surplus-value follows from Marx's labor theory of value and surplus-value. According to Marx's theory, all the individual parts of surplus-value come from the *same source* – the surplus labor of workers. Therefore, the total surplus-value must be determined prior to its division into the individual parts. And the total surplus-value is determined by the total surplus labor, and nothing else; i.e. the total surplus-value does not change in the determination of the individual parts.

To take the most important example, in Marx's theory of prices of production in Part 2 of Volume 3, the total surplus-value produced in a year is taken as a predetermined given, as determined in Volumes 1 and 2, and this predetermined total surplus-value is used to determine the general rate of profit ($R = S / M$), which is turn is a determinant of prices of production (see Chapter 2). As a result, the predetermined total surplus-value is distributed to individual industries in such a way that all industries receive the same rate of profit. Then the total surplus-value is further divided into the individual parts of commercial profit, interest, and rent (which are analyzed in Parts 4-6 of Volume 3).[1]

I have argued in several papers (Moseley see Hegel paper
that this distinction between the production of surplus-value (the determination of the total surplus-value) and the distribution of surplus-value (the division of the total surplus-

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[1] Modern macroeconomics in recent decades has been obsessed with the "microfoundations of macroeconomics". Marx's logical method is the opposite – the macro foundations (the prior determination of the total surplus-value) of microeconomics (the individual parts).

value into individual parts) corresponds to the two basic levels of abstraction in Marx's theory: capital in general and competition. *Capital in general* is defined by Marx as the main properties which are common to all capitals and which distinguish capital from simple commodities or money and other forms of wealth. The most important common property of capitals, which is analyzed at the level of abstraction of capital in general, is the *production of surplus-value*. Since this all-important property is shared by all capitals, the theory of the production of surplus-value at the level of abstraction of capital in general is concerned with the total surplus-value produced by the total capital of society as a whole. Other common properties of all capitals that are analyzed at the level of abstraction of capital in general include various characteristics of capital in the sphere of circulation (the turnover time of capital, fixed and circulating capital, etc.) and the appearance of surplus-value and the rate of surplus-value as profit and the rate of profit (including the falling rate of profit).

The main question addressed at the level of abstraction of *competition* is the *distribution of surplus-value*, or the division of the total surplus-value into individual parts. Another related question addressed at the level of abstraction of competition is "revenue and its sources", or the critique of vulgar political economy's explanation of these individual parts of surplus-value as independent and autonomous sources of value.

Therefore, I argue that the basic logical structure of Marx's theory of capital in the three volumes of *Capital* is as follows:

MARX'S THEORY IN *CAPITAL*

I. **Capital in general**
    1. **Production of surplus-value** (Volume 1)
    2. Circulation of capital (turnover time) (Volume 2)
    3. Capital and profit (including the falling rate of profit) (Parts 1 and 3 of Vol. 3)

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II. **Competition**, or the **distribution of surplus-value**

      1. General rate of profit and prices of production   (Part 2 of Volume 3)

      2. Commercial profit   (Part 4)

      3. Interest   (Part 5)

      4. Rent   (Part 6)

      5. Reveune and its sources (critique of vulgar economics)   (Part 7)

Chapter 3 discusses at length this aspect of Marx's logical method.

It is argued in Moseley (2013) that this aspect of Marx's method was heavily influenced by Hegel's logic, and in particular by Hegel's logic of the Concept which consists of three moments: universality, particularity, and singularity (Marx emphasized the first two). Marx's levels of abstraction of capital in general correspond to Hegel's moment of universality, and Marx's level of abstraction of competition corresponds to Hegel's moment of particularity.

On the other hand, this aspect of Marx's method is completely unique in the history of economic theory. No other economic theory has analyzed the total profit and individual amounts of profit in this sequential and logically integrated way. It is certainly very different from Sraffa's theory, in which the total amount of surplus-value is not determined at all (except perhaps implicitly and secondarily), and the rate of profit is not determined prior to prices of production, but is instead determined simultaneously with the prices of production of both inputs and outputs.

2. Single system / actual capitalism

Another important characteristic of Marx's logical method, which follows from the prior determination of the total surplus-value discussed in the previous section, is that Marx's theory in all three volumes of *Capital* is about a *single system*, the actual

capitalist mode of production (meaning that commodities tend to exchange at their prices

of production, not at their values). This actual capitalist system is theorized first at the

macro level (in order to determine the total surplus-value) and then is analyzed at the

micro level (in order to determine the division of the total surplus-value into individual

parts). The same single system (the actual capitalist economy) is analyzed at both levels

of abstraction.

By contrast, according to the standard interpretation, Marx's theory is about two

different economic systems (i.e. a "dual system" interpretation) – first a hypothetical

"value system" in Volumes 1 and 2, and then the actual capitalist "price system" in

Volume 3. In the hypothetical "value system", it is assumed that commodities (tend to)

exchange at their values (as long-run equilibrium prices); and in the actual "price

system", it is assumed that commodities (tend to) exchange at their prices of production

(ditto). But this "dual system" is not Marx's logical method. Marx's theory is not about

two different economic systems, but is instead about the capitalist economic system from

beginning to end.

Therefore, the total surplus-value that is determined in Volume 1 is the *actual* total

surplus-value; it is not a hypothetical total surplus-value, which is assumed to be equal to the

value of surplus goods, and which later has to be transformed into the actual total profit in

Volume 3 (as in the standard interpretation). Instead, Marx's theory is about the actual total

surplus-value from the very beginning in Volume 1. This must be true, in order to be

consistent with the fundamental premise of Marx's theory of the prior determination of the

total surplus-value, discussed in the previous section. The prior determination of the total

surplus-value is logically possible *only if* Volume 1 is about the actual capitalist economy and the actual total surplus-value.

Similarly, the two components of the initial money capital – constant capital and variable –also refer to actual quantities of money capital advanced in the actual capitalist economy to purchase means of production and labor-power in the first phase of the circulation of capital. Constant capital and variable capital in Volume 1 do *not* refer to hypothetical quantities of money capital, which are assumed to be equal to the values of the means of production and means of subsistence (as in the standard interpretation). Instead, constant capital and variable capital in volume 1 refer to actual quantities of money capital, which are equal to the *prices of production* of the means of production and means of subsistence, although the theory cannot fully explain that in Volume 1, because prices of production can't be explained in Volume 1. Before prices of production can be explained, the total amount of surplus-value must first be determined, and that is the main task of Volume 1.

This is another respect in which Marx's theory is similar to Hegel's logic – Hegel's logic is about a single given totality, as an interrelated whole from beginning to end. Hegel's logic begins with the most abstract and universal element ("moment") of the given totality, and then proceeds to more concrete and particular parts of this same given totality. Hegel's logic is not about two different totalities – a hypothetical one and then an actual one. Hegel's logic is about the same actual totality from beginning to end, and Marx's theory is similar to Hegel's logic in this fundamental respect.

3. Circuit of money capital

The title of Marx's book is of course *Capital*, thereby clearly indicating the centrality of the concept of *capital* in his theory of capitalism.[2] Marx introduced his core concept of capital in Chapter 4 of Volume 1 in the abbreviated form of the "general formula for capital", which he is expressed symbolically as:

$$\mathbf{M \ - \ C \ - \ M'} \qquad \text{where } \mathbf{M' \ = \ M + \Delta M}$$

in which M represents the initial money capital advanced to purchase means of production and labor-power, C represents commodities, M' represents the final money capital recovered through the sale of commodities, and ΔM represents the increment of money that emerges at the end of this process and is the main result of the process.

Surplus-value is defined as ΔM, or the increment of money that emerges at the end of this process of the circuit of capital (C.I: 251). The production of surplus-value is the main purpose of capitalist production, and is the most important phenomenon to be explained by Marx's theory of capitalism (or any theory of capitalism). The general formula for capital focuses Marx's theory on this all-important question: where does the ΔM come from and what determines its magnitude?[3] Most of Volume 1 is devoted to this central question (for the economy as a whole (see Moseley 2004).

Thus we can see that Marx's concept of capital is clearly and emphatically defined in terms of *money*, as "*money that becomes more money*". The title of Part 2 of Volume 1 is:

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[2] This title also indicates (as does the whole book) that Marx's theory is a theory of *capital-ism*, not a theory of communism or socialism. The latter view is common, but it is a total misunderstanding of Marx's economic theory.

[3] Marx once said that, in the circuit of money capital, ΔM is the "most striking" feature which "leaps to the eye". (C.II. 140).

"The Transformation of *Money* into *Capital*". This definition in terms of money is of course

also true of the two components into which the initial money capital advanced is divided –

constant capital (the initial money capital advanced to purchase means of production) and

variable capital (the initial money capital advanced to purchase labor-power) (C.I. Chapter

8); algebraically, $M = C + V$, all in terms of money. One common version of the standard

interpretation of constant capital and variable capital is that they are defined in terms of the

labor-value of the means of production and means of subsistence, respectively. But this is a

fundamental misinterpretation of Marx's core concept of capital, which loses sight of the

essential monetary nature of capital in capitalist production and in Marx's theory.[4]

Marx's concept of capital is very different from the concept of capital in neoclassical

economics, which is defined in terms of *physical goods* – as quantities of material inputs to

production (machinery, equipment, buildings, raw materials, etc.) (i.e. "capital *goods*").

Thus capital is analyzed in neoclassical economics as "goods used to produce other goods",

rather than as "money used to make more money". This physical definition of capital is the

reason why the "aggregation of capital" is impossible in neoclassical theory – because

different kinds of physical means of production cannot be meaningfully added together.

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[4] It is also sometimes argued that "capital is a social relation". Marx did at times refer to
capital in this way, although he did not in the key Chapter 4, in which his general concept
of capital is introduced and defined. Of course, capital is a social relation in the general
sense that capital is money, and money represents social labor-time, which is a social
relation. However, to say that "capital is a social relation" without adding – as expressed
in money – is to leave out this key characteristic of social relations in capital. Capital is
also a social relation in the sense that capital involves the ownership of the means of
production, but this does not require a theory to explain. What requires an explanation,
above all else, is how a given quantity of money capital becomes a greater quantity.
 On the importance of the concept of capital, see also the quotation from the *Grundrisse*
at the beginning of this chapter.

Marx's concept of capital, on the other hand, does not have an "aggregation problem". There is no problem adding up quantities of money capital across the economy.

Sraffa criticized neoclassical theory because of its aggregation problem with respect to capital. Sraffa argued that it is impossible to "measure capital as a quantity prior to and independent of prices" (1960: 9). Sraffa gave two examples of this impossibility of measuring capital prior to prices: Marshall's "real costs" (effort and sacrifice) and marginal productivity theory's "quantity of capital" (discussed in the last paragraph). In these cases, it is indeed impossible to measure capital independently of prices, because capital is defined in real physical terms which are heterogeneous and therefore require prices to make them homogenous and quantifiable. However, Marx's concept of capital is not defined in physical terms, but is instead defined in terms of *money*, which is homogeneous by its nature, and thus can be added up easily, and can be taken as given at the beginning of the theory, without conceptual problems, unlike these other concepts of "real" capital criticized by Sraffa. Therefore, Sraffa's criticism of the quantity of capital does not apply to Marx's monetary concept of capital.[5]

??? [In any case, this fundamental difference with respect to the key concept of capital is a good indicator by itself of the very wide gulf between Marx's theory of capital and Sraffa's anti-capital theory of commodities.]

FNOTE on Kurz (and Salvadori?)

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[5] Sraffa's criticism also does not apply to other "cost of production" theories of value mentioned below (Smith, Keynes, Post-Keynesians) that also do not define costs in physical terms, but simply take the money costs of production as given directly, similar in this respect to Marx's theory.

The full expanded form of Marx's circuit of money capital is the well-known formula:

$$\textbf{M - C} \quad ... \quad \textbf{P} \quad ... \quad \textbf{C' - (M + \Delta M)}$$

We can see that this complete form of the circuit of money capital takes place in *two "spheres"*, the sphere of circulation and the sphere of production, and consists of *three phases*, consecutive in time: (1) the *advance* of money capital to purchase means of production and labor-power in the sphere of circulation, prior to production; (2) the *production* process, in the sphere of production; and (3) the *recovery* of money capital through the sale of commodities after production, again in the sphere of circulation. Marx succinctly summarized this process as follows: "*Before* production, we had a capital of *£500*. *After* production is over, we have a capital of *£500* plus a value increment of *£100*." (C.III: 124)[6] This increment of £100 is what capitalism is primarily about, and what Marx's theory of capitalism primarily explains. Marx often referred to this process as the "valorization process", in which an initial quantity of money "valorizes itself" by becoming more money, in contrast to the "labor process" in terms of the production of physical goods.

This circuit of money capital is the basic logical framework of Marx's theory.[7] The main goal of Marx's theory is to explain how this all-important phenomenon happens, i.e. how the M at the beginning of this circuit becomes $(M + \Delta M)$ at the end of the circuit. The "general formula for capital" is not just introduced in Chapter 4 of

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[6] See also C.I: 256 and MECW.33: 79 for similar "before … after" statements.

[7] Duncan Foley (1986a, 1986b) has also emphasized the circulation of money capital as the analytical framework of Marx's theory, which he calls the "circuit of capital" approach, and which has been gaining popularity in recent years.

Volume 1, and then plays no significant role in the rest of the theory. The expanded

circulation of money capital is the basic logical framework of Marx's theory for the rest

of the three volumes of *Capital*. Marx summarized this general framework as follows in

the Introduction to Part 7 of Volume 1:

> The transformation of a sum of money into means of production and labor-power is the first phase of the movement undergone by the quantum of value which is going to function as capital. It takes place in the sphere of circulation. The second phase of the movement, the process of production, is complete as soon as the means of production have been converted into commodities whose value exceeds that of their component parts, and therefore contains the value originally advanced plus a surplus-value. These commodities must then be thrown back into the sphere of circulation. They must be sold, their value must be realized in money, this money must be transformed once again into capital, and so on, again and again. This cycle, in which the same phases are continually gone through in succession, forms the *circulation of capital*. (C.I: 709).

Marx's logical framework of the circuit of money capital is very different from the

logical framework of Sraffa's theory, which consists instead of a input-output matrix in terms

of physical quantities, a labor input vector, and a system of simultaneous equations based on

these initial physical givens.[8] Sraffa referred to his logical framework as the "circular flow

of production", by which he meant the circular flow of physical inputs and outputs, not the

circular flow of quantities of money capital. Sraffa's theory is not a theory of the

"valorization process"; it is instead a theory of relative prices that reproduce the initial given

physical quantities.

In order to compare Sraffa's logical framework with Marx's framework, Sraffa's

framework could be represented symbolically as follows:

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[8] Sraffa himself also assumed a given wage share of total income, which ranges from 0 to 1. This is a strange "wage", since it is a pure number, not in units of money.

$$\begin{array}{c} \text{MP} \\ \\ \text{L} \end{array} \Big\rangle \;\; \dots \;\; \text{P} \;\; \dots \;\; \text{C'}$$

where MP stands for the physical quantities of means of production and L for quantities of labor.[9] The most striking difference about Sraffa's framework (compared to the Marx's framework) is the *complete absence of money*, especially the absence of ΔM, the most important characteristic of capitalist economies.[10] The first phase of the circulation of money capital in the sphere of circulation – the advance of money capital to purchase means of production and labor-power – is ignored altogether. It is implicitly assumed that means of production enter capitalist production as *mere physical quantities*, without predetermined prices. But this is not true. Means of production in capitalism are *commodities*, which are purchased prior to production by a part of the initial money capital advanced to begin the circuit of money capital, at prices that are determined prior to production. Means of production enter the valorization process as commodities with a price, not as physical quantities without a price. The crucial question in capitalism is how this pre-existing quantity of money becomes more money.

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[9]   Sraffa has described this process as "the production of commodities by means of commodities". However, it would be more accurate to describe it as "the production of commodities by means of *physical quantities*", since the physical inputs are not treated as commodities with already existing prices.

[10]   Money does not even enter in this theory in the concept of the "wage", since the wage share is a pure number, not a quantity of money.

4. M presupposed

In order to explain how the initial M at the beginning of the circuit of capital becomes M + ΔM at the end of the circuit, Marx took as given (presupposed) the initial M at the beginning of the circuit, as initial data for his theory of ΔM. It is legitimate to take the initial M as given because the advance of M is logically and chronologically prior to the recovery of M' and the determination of ΔM, and is in principle a known quantity. There can be no production of value and surplus-value without a prior advance of money capital. The initial, pre-existing and given M is the "benchmark" against which M' is measured and ΔM is determined.

The logical structure of the circuit of money capital suggests in two ways that the initial money capital (M) is *taken as given* or *presupposed* in Marx's theory, both in the macro theory of the production of surplus-value in Volume 1 and also in the micro theory of the distribution of surplus-value in Volume 3. In the first place, the *starting point* of the circuit of capital is M, which suggests that M is also the starting point or the initial data of Marx's theory of the circuit of capital. The circuit of capital begins with the advance of a certain amount of money M to purchase means of production and labor-power in the capitalist economy, and Marx's theory of the circulation of money capital begins with this quantity of money capital advanced. As we have seen, the main question which Marx's theory of surplus-value is intended to answer is this: how does this initial M advanced at the beginning of this process become (M + ΔM) at the end of the process? In Marx's terms, how does the initial M "valorize itself"? For this question, the appropriate initial given in the theory is the initial M advanced, the quantity of money capital that must be recovered before any ΔM can be appropriated and the initial M

"valorized". This initial given M becomes a "determining factor" in the determination of M' and ΔM (the details are discussed in Chapter 2).

The second way in which the structure of the circulation of capital suggests that the initial M is taken as given is that the *first phase* of the circulation of capital – the advance of money capital to purchase means of production and labor-power (M - C) – takes place in the "*sphere of circulation*", prior to the second phase of production. Marx's theory of the circulation of capital also begins in the sphere of circulation (in Part 2 of Volume 1), with the advance of definite quantities of money constant capital and money variable capital to purchase means of production and labor-power (with the famous passage at the end of Part 2 about moving from the "noisy sphere of circulation" to the "hidden abode of production" marking the transition from the sphere of circulation to the sphere of production). Thus, when the second phase of the production of value and surplus-value begins, as analyzed in Part 3 and beyond, the quantities of constant capital and variable capital are assumed to have already been advanced in the sphere of circulation to purchase means of production and labor-power. These already existing quantities of constant capital and variable capital are *taken as given* as an *empirical fact* in Marx's theory of how this previously existing given quantity of money capital becomes more money in subsequent phases of the circulation and the valorization of capital. In this way, the presuppositions of Marx's theory of surplus-value in the sphere of production come from already existing quantities of money capital previously advanced in the sphere of circulation.

And the crucial point for the "transformation problem" is that, in Marx's theory of prices of production in Volume 3, the *same quantities of constant capital and variable capital* are taken as given, as in the Volume 1 theory of the total surplus-value – the *actual* quantities of money capital advanced to purchase means of production and labor-power in the real capitalist economy. The only difference is that in Volume 3 the *individual* quantities of constant capital and variable capital advanced are also taken as given, in addition to the total constant capital and variable capital that are taken as given in Volume 1 (the M_i's in each industry, in addition to the total M for the economy as a whole). The question that Marx's theory of prices of production is intended to answer is this: how is the original M_i advanced and consumed in each industry recovered, and the total surplus-value distributed in proportion to the M_i advanced in each industry? For this question, the appropriate initial givens are the initial M_i's in each industry which has to be recovered before any surplus-value can be distributed. These given M_i's become "determining factors" of the prices of production of commodities, similar to the total M in the theory of total surplus-value in Volume 1. Other authors who have argued that constant capital and variable capital are taken as given as initial quantities of money capital, and remain invariant in the transformation of values into prices of production, include David Yaffe and Guglielmo Carchedi.

That is why Marx did *not* "fail to transform the inputs of constant capital and variable capital from values to prices of production" – because no such transformation is necessary in Marx's theory. The inputs of constant capital and variable capital in Marx's theory of prices of production in Volume 3 are the *same actual* quantities of money capital advanced in the real capitalist economy that are inputs in Marx's theory of total surplus-value in Volume 1.

There are not "two systems" in Marx's theory – a "value system" and a "price system" – with two sets of magnitudes of constant capital and variable capital. Instead, there is only one system in Marx's theory, the actual capitalist economy, with one set of magnitudes of constant capital and variable capital, which is first analyzed at the aggregate level and then is analyzed at the industry level. Therefore, there is no "transformation" of constant capital and variable capital to be made. Constant capital and variable capital are the same actual quantities of money capital at both levels of abstraction.

The monetary nature of the initial givens of constant capital and variable capital in Marx's theory of value and surplus-value and prices of production is discussed at length in Chapter 4.

This aspect of Marx's logical method – taking as given the initial money capital advanced – is not unique in the history of economic theory. Indeed, this aspect of Marx's method is similar to a long line of "cost of production" theories, including those of Adam Smith, Col. Torrens, J.S. Mill, Keynes, and current Post-Keynesians (including the theory of the monetary circuit; e.g. Graziani). All these "cost of production" theories of value take as given the initial money wage (with much less methodological grounding than Marx), and use the given money wage to determine prices (along with the mark-up) (they all tend to ignore material costs, following Smith's erroneous example). Marx's theory is of course also very different from these "cost of production" theories, especially in the sense that Marx's theory provides a theory of surplus-value (i.e. Marx incorporated these given costs into his labor theory of value in order to provide a theory of surplus-value, the excess of the value of the product over the costs of production), and these theories generally have no theory of profit at all, and usually just assume profit as a given "mark-up" (e.g. Sidney Weintraub's "magic constant"). But Marx's theory is similar to these "cost of production" theories in the sense of taking the money wage as given in the determination of prices. If it is legitimate for these "costs of production" theories to take money costs as given, then surely it is legitimate for Marx's theory to do the same.

Keynes' theory in particular took factor costs (wages and profit) as given in money terms, not only in his theory of prices, but also in his derivation of the aggregate supply function (which together with the aggregate demand function determines the equilibrium quantity of employment in his theory). The aggregate supply function is the relation between the aggregate supply price (Z) and the quantity of employment that entrepreneurs are willing to provide (i.e. $Z = f(N)$), and the aggregate supply price is defined as the sum of the factor costs plus "entrepreneur income" (the latter of which is the difference between the net value of the product (net of user costs) and factor costs), and all these variables are *taken as given*, as a schedule, as dependent on the quantity of employment (1936: Chapter 3). Similarly, Keynes also took the aggregate supply price (i.e. aggregate costs) as given (along with the "prospective yield") in his determination of the marginal efficiency of capital (1936: Chapter 9). In comparison, Marx took the money wage (i.e. variable capital) as given, along with the money material costs (constant capital) ($M = C + V$), for a different purpose from Keynes: in order to determine the total value of the product (M') and the total surplus-value (ΔM), which is the difference between M' and the given M, and also to determine individual prices of production (M_i'). If Keynes' theory can legitimately take the money costs as given, then so can Marx's theory.

A more surprising similarity in this respect is the neoclassical theory of the firm, which also takes money costs as given (wages, costs of materials, etc.), including profit disguised as "opportunity cost", as a schedule, as a function of the quantity of output. Indeed, in neoclassical theory, the long-run equilibrium price is determined entirely by these given costs; the equilibrium condition in the long-run is P = minimum of long-run average costs (P* = min LAC). Demand plays no role at all in this determination of the long-run equilibrium price, which is entirely cost-determined, and costs (including the minimum of long-run average costs) are taken as given. This conclusion is true, not only for constant returns to scale (as is commonly thought), but for all cases of returns to scale, as can be seen from this equilibrium condition. (If the minimum of long-run average costs changes as a result of a change of scale, then so will the equilibrium price.)

In Sraffa's theory, on the other hand, the initial givens are not money costs or quantities of money capital, but are instead physical quantities of means of production and labor (and the wage share as a pure number, not a quantity of money capital), as shown above in the symbolic representation of Sraffa's theory. Indeed, viewed from this broad perspective of the history of economic thought, Sraffa's theory is something of an outlier, because it does not take money costs as given, and Marx's theory, which does take money costs as given, is more like these other theories in this respect.

It should be noted that, in the case of the constant capital component of the initial M, especially fixed constant capital that is advanced to purchase means of production which last multiple years, if there is a change in the price of production of those means of production between the time the capital is advanced to purchase them and the time the output produced with those means of production is sold, then the quantity of constant capital that is taken as given in the theory of surplus-value in Volume 1 and in the theory of prices of production in Volume 3 will also change correspondingly. In this case, the given constant capital would be the "current" constant capital, as evidenced by the most recent purchases of this means of production on the market (in the sphere of circulation); i.e. if there has been such a change, then the given constant capital is equal to the "current cost" of the means of production, not their original "historical cost". The constant capital that is transferred to the value of the output is a *social average* constant capital, and this social average is determined at the time the output is sold, not at the different previous times the different means of production were purchased. Carchedi (1984, 1991) has emphasized this point: the individual values of the inputs become social average values only at the time the output is sold.

However, the advance of constant capital to purchase this means of production in the sphere of circulation is still logically and chronologically prior to the sale of the output and the recovery of the capital. The "current" constant capital is still "old value" in relation to the "new value" produced by the labor of the current period, and is still transferred to the value and price of production of the output, just like the original "historical" constant capital in the case of no change in the price of the means of production; the only difference is a change of magnitude. This issue of current cost vs. historical cost is not an issue in the static transformation problem, since technology and hence the prices of the inputs are assumed to

remain constant (and fixed capital is generally ignored), but it is important for dynamic

issues such as the falling rate of profit. This issue will be discussed further in Chapter 9 on

the "temporal single system" interpretation of Marx's theory (and see Moseley   for an

extensive discussion of this issue).

5. Two-stage explanation of the given actual M

Marx's theory also subsequently provides an explanation of the actual quantities of money capital that are taken as given in the theory of the total surplus-value in Volume 1 and in the theory of prices of production in Volume 3. This explanation of the given actual quantities of money capital is presented in two stages, which are necessary because these actual quantities of money constant capital and money variable capital depend on prices of production of the means of production and means of subsistence, respectively, and prices of production cannot be fully explained until after the total surplus-value has been determined in Volume 1 and prices of production have been determined in Volume 3

In Volume 1, Marx provisionally assumes that the (long-run equilibrium) prices of commodities are equal to their values (i.e. are proportional to the labor-times required to produce these commodities), including the prices of the means of production and means of subsistence, because that is the only assumption consistent with the labor theory of value at the "macro" level of abstraction of capital in general in Volume 1. In particular, Marx provisionally assumes that constant capital and variable capital depend on the *values* of the means of production and means of subsistence. This assumption is not exactly true; it is only a first approximation. Prices depend not only on these labor-times, but also on the equalization of the profit rate across industries. However, labor-times are the *main determinant* of (long-run equilibrium) prices, and this provisional assumption enables Marx to analyze the effects of changes in the labor-times required to produce these commodities on the magnitudes of constant capital, variable capital, and surplus-value.

explain value of labor-power

For example, in Marx's theory of relative surplus-value, technological change that reduces the labor-time required to produce the means of subsistence reduces the price of means of subsistence, which in turn reduces variable capital and increases surplus-value and the rate of surplus-value. This theory does not require that variable capital be proportional to the labor-time required to produce means of subsistence; the same general conclusions follow even if the quantities are not proportional. Similarly, a reduction in the labor-time required to produce the means of production reduces the price of the means of production, which in turn reduces constant capital and the composition capital.

However, the crucial point for our purposes is that this partial explanation in Volume 1 of the actual quantities of constant capital and variable capital *does not determine* the magnitudes of these variables in Marx's theory of value and surplus-value. It does not determine the magnitude of constant capital that is the first component of the value of commodities; instead the first component of the value of commodities is the actual money capital advanced to purchase means of production in the real capitalist economy, which is taken as given, as a known empirical magnitude. Similarly, this partial explanation does not determine the magnitude of variable capital that is subtracted from the new-value produced in order to determine the surplus-value produced; instead the variable capital that is subtracted from new-value is the actual money capital advanced to purchase labor-power. In this way, the actual total surplus-value is determined in Volume 1, not a hypothetical total surplus-value.

After prices of production have been explained in Volume 3, Marx then briefly provides a more complete explanation of the given actual quantities of constant capital and variable capital - that these actual quantities are equal to the *prices of production* of the

means of production and means of subsistence, and not equal to their values (see Chapter 4 for an extensive discussion). But the important point again is that this more complete explanation of the given actual quantities of constant capital and variable capital *does not change the quantities* of constant capital and variable capital themselves. The quantities of constant capital and variable capital remain the same - the actual quantities of money capital advanced to purchase means of production and labor-power in the sphere of circulation, which are taken as given. What changes in Volume 3 is the explanation of these given actual quantities – from a partial explanation to a more complete one.

CPTV similar logic

Kurz on classical economists on wages

6. Sequential determination

The final characteristic of Marx's logical method to be discussed is that Marx's theory is based on the *sequential determination* of the key variables, not simultaneous determination (as in Sraffian theory). Sequential determination follows from the other characteristics of Marx's method discussed above: (1) The total surplus-value is determined prior to its division into individual parts, and the total surplus-value is taken as given in the determination of the individual parts. (2) Constant capital and variable capital are taken as given in the determination of total value, total surplus-value, and industry prices of production. (3) Constant capital and variable capital are explained subsequently in two stages, as discussed in the previous section, on the basis of prior results.[11] Simultaneous determination is not appropriate for Marx's theory for these reasons. This characteristic of Marx's logical method is discussed in both Chapters 3 and 4, and also in Chapter 9 on the "temporal single system" interpretation of Marx's theory.

The "cost of production" theories of value mentioned above in Section 3 are all based on the logical method of sequential determination in the sense of given initial money costs, but not in the sense of the prior determination of the total surplus-value.

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[11]   Marx sometimes referred to the "intermediate stages" in his theory (some of these passages will be discussed in Chapter 3). The main "intermediate stage" is the determination of the total surplus-value and the rate of profit prior to its distribution and the determination of prices of production. The term "intermediate stages" obviously suggests the logic of sequential determination. In the logic of simultaneous determination, there are no "intermediate stages"; everything is determined at once.

6. Predecessors of this "macro-monetary" interpretation

The "macro-monetary" interpretation of Marx's theory presented in this book has been developed from other prior interpretations of Marx's theory in recent decades which have challenged the standard interpretation and inspired me in various ways. With respect to the "macro" aspect of the prior determination of the total surplus-value, the main influences have been Paul Mattick, Roman Rosdolsky, and David Yaffe. Mattick emphasized that the total amount of surplus-value is determined prior to its distribution in his analysis of the limits of Keynesian economic policies and in his critique of Baran and Sweezy's argument that monopolies are able to overcome the tendency of the rate of profit to fall (the "law of the rising surplus"). Mattick argued that monopolies could not affect the total amount of surplus-value produced, but could affect only the distribution of surplus-value between monopolistic and competitive industries.[12] Rosdolsky called attention to Marx's distinction between capital in general and competition in the *Grundrisse*, in which Marx emphasized that the total surplus-value is determined prior to its distribution (at the level of abstraction of capital in general) and that the distribution of surplus-value (at the level of abstraction of competition) does not affect the total amount of surplus-value produced. And Yaffe developed further Mattick's analysis of government policies, and emphasized that the

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[12] Mattick was also the first to rigorously extend and develop Marx's theory to the all-important 20th century question of the effectiveness (or lack thereof) of Keynesian policies. He is the *only theorist* who predicted, back in the "golden age" of the 1950s and 60s, that this period of relative prosperity, like all period of prosperity in capitalism in the past, would be temporary; that the Keynesian policies that are supposed to stabilize capitalism have their intrinsic limits, and that once these limits are reached, then capitalism would fall again into another global great depression. We are now witnessing before our very eyes the awful truth of Mattick's prediction 50 years ago. This is an unsurpassed theoretical achievement, much greater than all the bourgeois Nobel Prize winners (but of course much too subversive for a Nobel Prize).

distinction between the production and distribution of surplus-value corresponds to the two main levels of abstraction in Marx's theory of capital in general and competition.

With respect to the "monetary" aspect of my interpretation of Marx's logical method – that the initial givens in Marx's theory are the initial quantities of money capital M advanced to purchase means of production and labor-power – the main influence has been the "New Interpretation" first presented in the early 1980s by Duncan Foley and Gérard Duménil (independently). The main innovation of the New Interpretation from my perspective has to do with the determination of *variable capital*. Instead of deriving variable capital from a given quantity of means of subsistence (as in the standard interpretation), variable capital is *taken as given* directly, as the actual money wage advanced to purchase labor-power in the real capitalist economy (similar to my interpretation). And the important point is that this *same actual quantity* of variable capital (money wages) is taken as given in both the theory of value and surplus-value and in the theory of prices of production. Therefore, according to this interpretation, Marx did not fail to transform variable capital from values to prices of production in Volume 3, because variable capital is not supposed to be transformed. However, the New Interpretation continues to interpret *constant capital* in the standard way – that constant capital is derived from given physical quantities of means of production, first as the labor-value of the means of production in Volume 1 and then as the price of production of the means of production in Volume 3. Therefore, in my view, the New Interpretation argues that Marx made a mistake with respect to constant capital (which must be corrected), but not with respect to variable capital.

The New Interpretation is examined at length in Chapter 9 in Part 2. It is argued that by taking only the money variable capital as an initial given, the New Interpretation "goes

only halfway" in breaking away from the standard interpretation of Marx's theory, and that it should "go all the way", and with parallel logic, also take the money constant capital as an initial given as well.

Another important influence on my interpretation of the determination of constant capital and variable capital has been the work of Guglielmo Carchedi (1984, 1991), which has not received the attention that it deserves. Carchedi was the first to argue that both constant capital and variable capital are taken as given, as equal to the *prices of production* of the inputs. And the *same magnitudes* are taken as given in both the Volume 1 theory of value and the Volume 3 theory of prices of production, and thus there is no "transformation" of these magnitudes to be made. Therefore, Carchedi goes a step further than the New Interpretation, and argues that Marx did not make a mistake with respect to either constant capital or variable capital; Marx did not transform the magnitudes of constant capital and variable capital, because these magnitudes are not supposed to be transformed. Carchedi also further develops Marx's theory of prices of production to include the case in which there are different levels of technology and productivity within each industry, and also extends Marx's theory to the case of technological change. However, there is one very important difference between Carchedi's interpretation and my interpretation – Carchedi argues that *all* the key variables in Marx's theory in *Capital* are defined in units of *labor-time*, including constant capital, variable capital, and surplus-value, and even the Volume 3 variables of cost price, price of production, and profit. I argue, as we have seen, that these key variables in Marx's theory are components of *capital*, and capital is defined in terms of money (money that becomes more money) and thus so are these components of capital.

With respect to the sequential determination aspect of my interpretation of Marx's logical method, the most important influence has been the "temporal single system" interpretation (TSSI) first presented in the 1980s by John Ernst, Andrew Kliman, Ted McGlone, Alan Freeman, and others. Prior to the TSSI, the Sraffian interpretation of Marx's theory in terms of a system of simultaneous equations was almost universally accepted. Even the other recent reinterpretations of Marx's theory to be discussed in Part 2 of this book generally accepted the method of simultaneous determination. At first, I wasn't sure about this point myself; I thought that Marx's theory might be compatible with simultaneous determination. But then I realized, in large part because of the arguments of the proponents of the TSSI, that the other aspects of Marx's logical method that I emphasize – the prior determination of the total surplus-value and the money capital advanced (M) taken as given – require sequential determination of these variables. Therefore, I came to the conclusion that the TSSI is correct in the sense that Marx's theory is not based on the logic of simultaneous determination, but is instead based on the logic of sequential or temporal determination. This is a very important contribution.

This book attempts to build on these prior challenges to the standard interpretation of Marx's theory, and to explore in greater depth these key aspects of Marx's logical method, and their role in the theory of value and surplus-value in Volume 1 and in the theory of the distribution of surplus-value and prices of production in Volume 3.

The chapters that follow in Part 1 will discuss further the theoretical rationales for these important aspects of Marx's method, and will present extensive textual evidence from all four drafts of *Capital* to support this "macro-monetary-sequential" interpretation of Marx's logical method. Part 2 examines other recent challenges to the standard interpretation, each in a separate chapter.