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Capital as a Social Process: A Marxian Perspective.

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Abstract

This paper analyzes the very important notion of capital from a Marxian perspective as opposed to a neoclassical one. It is argued that when capital is viewed as a historically determined social process (relation), rather than as a thing or a collection of things, it tends to assume certain specific forms more often than others depending on the particular stage of economic history. Capital thus refers simultaneously to social relations and to things. Given this frame of reference, notions such as money and property capital are more easily accommodated and consequently are not written off as financial or fictitious capital—not real capital—because they “produce nothing.” The paper also focuses on Marx’s important analysis of the time of production and the turnover of capital in terms of the production of surplus-value (profit). It then examines Marx’s equally important and prescient analysis of how the turnover speed of capital is affected by the time of circulation of commodities (the realization of surplus-value) and the growing use of credit (in its various forms) in the capitalist system. Finally, the paper turns its attention to the economic role of time as it relates to interest-bearing capital and Adam Smith’s important distinction between productive and unproductive labor—one whose clear comprehension rests on viewing capital as a social construct. **JEL Codes:** B10; B14; B24

Keywords: Capital; commodity capital; credit; crises; exchange-value; interest-bearing capital; money capital; productive capital; productive and unproductive labor; time of production and circulation; turnover speed of capital; rate of surplus-value (profit)

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“It is self-evident that where things and their interrelations are conceived not as fixed, but as changing, their mental images, and ideas, are likewise subject to change and transformation; and they are not encapsulated in rigid definitions, but are developed in their historical and logical process of transformation”(Capital III, 1967 [orig. 1894], pp. 13-14).

I. Introduction

Among the most difficult and crucial concepts to be found in economics today is that of defining what capital is and how to measure it in a logically coherent fashion. Indeed, its importance to the profession over the years is attested by the numerous methodological and conceptual controversies it has generated ever since John Bates Clark introduced his conception of capital as “a quantum of wealth, or a fund”—it was conceived by Clark as “an abiding entity” that somehow could be quantified independent of any prices. That is, in neoclassical theory the value of this abstract capital determines its physical (marginal) productivity.¹ This immediately brings up the difficult question of how do we aggregate heterogeneous capital goods such as screwdrivers, computers, machine tools, and blast furnaces into one homogeneous entity (abstract capital) in order to ascertain its (physical) productivity? The “Capital Controversies” of the 1960s tried to resolve this critical issue in a theoretically consistent fashion, viz., how is the value of capital determined by its physical (marginal) productivity rather than the common (and erroneous) practice of assuming its value in order to ascertain its productivity—a line of reasoning which degenerates into a circular argument.

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¹Clark offered the following definition of capital: “We think of capital as a sum of productive wealth, invested in material things which are perpetually shifting—which come and go continually—although the fund abides. Capital lives, as it were, by transmigration, taking itself out of one set of bodies [machine tools, blast furnaces, etc.] and putting itself into another again and again” (1965, pp. 119-120). In fact, Clark likens capital to a waterfall which changes every second as it passes over the fall but itself remains the same.

The momentous academic exchanges that took place among the giants of the economics profession at the time did little, if anything, to settle the matter of how capital could be consistently defined and/or measured; on the contrary, by resorting to “parables,” or what Paul Samuelson called the “J.B. Clark neoclassical fairytale,” to defend neoclassical production and capital theory from its critics, the basic tenets of modern neoclassical production and distribution theory have been called into question ever since (see Hunt and Lautzenheiser, 2011; Ferguson, 1969; Harvey, 2014; Kliman, 2011; Robinson, 1970; Samuelson, 1966; and Sraffa, 1960).

Notwithstanding this, most economists seem oblivious to the implications of the unresolved debate and when called upon to explain what they mean by capital would no doubt respond that, “capital (or capital goods) includes all manufactured aids used in producing consumer goods and services. Included are all factory, storage, transportation, and distribution facilities, as well as tools and machinery” (McConnell, Brue, and Flynn, 2015, pp. 11-12; and, for a similar definition, see Samuelson and Nordhaus, 2005, p. 9). Capital, in other words, by being relegated to the status of an economic resource is invariable conceptualized in a static manner—as a thing or a collection of things.² Given this frame of reference, notions such as money and property capital (stocks, bonds, patents, etc.) are not easily accommodated and consequently are written off, at best, as financial or

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²Thomas Piketty (2014) in his seminal work defines capital more broadly to include “the sum total of nonhuman assets that can be owned and exchanged in some market. Capital includes all forms of real property...as well as financial and professional capital (plants, infrastructure, machinery, patents, and so on) used by firms and government agencies...I use the words “capital” and “wealth” interchangeably, as if they were perfectly synonymous” (pp. 46-47). Although land or natural resources are included in his definition of capital, labor or labor-power (human capital) is not; but, one may ask, why should the latter be excluded when, like land, labor-power’s services can be bought in the market and “owned” by capitalists for a specified time—the contractual period.

fictitious capital—not real capital—because they “produce nothing.” But one could argue by the same token that tools, machinery, and equipment in and of themselves are no more capital than money or titles to ownership—even if they are “owned and exchanged on a market” à la Piketty. For are not plant and equipment when standing idle just means of production—definite use-values, to employ the terminology of the classical school.

Moreover, why should money be excluded from the status of capital when used to buy means of production and labor (more correctly labor power) in order to produce goods and services for profit, or when lent out in the form of loan capital for the same purpose? Is it not also an economic resource when functioning in this capacity? This is just a sample of the many ambiguities that arise when we regard capital as being the inherent property of certain objects of utility.

As an alternative to this approach, this paper will treat capital as a social process or construct with specific historical origins; i.e., we shall not view capital as being confined in a rigid fashion to any of its various forms, be it plant, machinery, labor, or loan capital. In fact, by observing in which forms it manifests itself most frequently over time we shall discover, as well as appreciate, its inherent historical character. And this, of course, brings us to Marx, for it is thanks to his penetrating analysis of the capitalist mode of production and distribution which enables us today to understand capital as a dynamic (multi-dimensional) social concept, or better still, as a process or rule of a socio-historical character. From the outset then, it will be expedient to present capital as a historically determined concept. Next, the paper focuses on Marx’s important analysis of the time of production and the turnover of capital in terms of the production of surplus-value (profit). The fourth section

examines his equally important and prescient study of how the turnover of capital is affected by the time of circulation of commodities (the realization of surplus-value) and the growing use of credit (in its various forms) in the capitalist system. Section five turns its attention to the economic role of time as it relates to interest-bearing (loan) capital and Adam Smith's important distinction between productive and unproductive labor—one whose clear comprehension rests on viewing capital as a social construct. The final section summarizes the major arguments presented in the paper.

II. Capital as a historically determined process.

The conceptualization of capital, Marx argues, becomes a reality on any sort of a social scale with “the creation in the 16th century of a world-embracing commerce and a world-embracing market” (Capital I, 1977, p.146). Only when a growing number of articles of utility are produced by independent producers for the sake of exchange does it make (economic) sense to talk about capital. Marx traces the historical origins of merchant's capital to the “carrying or colonial trade” undertaken by the Dutch, Genoese, and Venetians during the 16th and 17th centuries, whereby the principal gains were made by the exchange of products of different values between economically undeveloped societies. The objective here is to generate profit via the circulation process by “buying cheap and selling dear,” or, as Marx refers to as “profit upon alienation” (Capital III, p. 329). He contends that wherever merchant capital has the upper hand over industrial capital, the former stands “for a system of robbery, so that its development among the trading nations of old and modern times is always directly connected with plundering, piracy, kidnapping slaves, and colonial conquest; as in Carthage Rome, and later among the Venetians, Portuguese, and Dutch, etc.”(ibid., p.

331). The colonial or carrying trade generated huge profits for the European merchants during the 16th and early 17th centuries and brought enormous quantities of precious metals into Europe, thus increasing the quantity (stock) of money (precious metals) in circulation and ushering in the price revolution of the 16th century (see Brewer, 1990, pp. 43-45; Ekelund, Jr. and Hebert, 2004, pp. 55-60; Mandel, 1971, pp. 106-110; Rubin, 1979, pp. 20-26; and Capital III, pp. 333-34).

Thus, along with the existence of the simplest circulation of commodities C-M-C, that is, the transformation of commodities (C) into money (M), and the change back into commodities (C) there emerges alongside it the inverted form,

$$(1) \quad M-C-M' \text{ with, } M' = M + \Delta M$$

Where: M= money (gold in value terms); C= commodities in value terms; and ΔM = surplus money (value) realized during the circuit. In other words, as opposed to the simple circulation of commodities where the aim is to sell in order to buy use-values for ultimate consumption, we have with the establishment of commodity production the emergence of a form in which the goal is to buy in order to sell. And not only to sell, but to sell dearer for

...the circuit, M-C-M would be absurd and without any meaning if the intention were to exchange by this means two equal sums of money £100 for £100. The miser's plan would be far simpler and surer; he sticks to his £100 instead of exposing it to the dangers of circulation (ibid., p. 147).

Money, or better still, value that circulates in this particular manner becomes, Marx would argue, transformed into capital. In fact, "as a matter of history, capital, as opposed to landed property invariably takes the form of money; it appears as moneyed wealth, as the

capital of the merchant and of the usurer” (ibid., p. 146). And in the case of the usurer or money-lender the circuit of capital is reduced to its two extremes, M-M’. That is to say, money is endowed here apparently with the power to augment its magnitude without being used for the purpose for which it came into existence, viz., the exchange of commodities. In Marx’s words, “Interest-bearing capital [M-M’] is the consummate *automatic fetish* [emphasis in the original], the self-expanding value, the money making-money, and in this form it no longer bears any trace of its origins. The social relation is consummated as a relation of things (money, commodities) to themselves” (TSV III, p. 455; and p. 462). Marx treats these two forms of capital (merchant’s and usurer’s capital) as derivative forms which “appear in the course of history before the modern standard of capital (Ibid., p. 165). This is a crucial observation because, as we shall see later on, the history of capital is quite different from the history of the capitalist mode of production. The former, under the guise of merchant’s and usurer’s capital is to be found in quite developed form in the ancient world, while the latter is scarcely more than two and one half centuries old. In this connection, Marx observes that,

The less developed the production, the more wealth in money is concentrated in the hands of merchants [and usurers] or appears in the specific form of merchants’ [usurers’] wealth. Within the capitalist mode of production—i.e., as soon as capital has established its sway over production and imparted to it a wholly changed and specific form—merchant’s [and usurer’s] capital appears as a capital with a *specific function*. In all previous modes of production ... whenever production ministers to the immediate wants of the producer, merchant’s [usurer’s] capital appears to perform the function *par excellence* of capital (Capital III, pp. 326-27).

Tentatively then, in the pre-capitalist stage of commodity production we shall define capital as a value in the form of money (gold) which is in the process of augmenting its magnitude by

means of a surplus value (ΔM). Also, we will speak of potential capital when value in the form of money is intended to function in such a way that it will augment its magnitude by means of a supplementary value. Value here, as in other parts in this paper, should be understood in a Marxian sense. By way of a digression then, it will be expedient to give a brief overview of Marx's definition of value.

A product is said to have value only if it is a use-value (object of utility) of some sort and if a quantum of socially necessary labor time has been expended in its production or acquisition. For Marx, "value is a relation between persons [producers]... expressed as a relation between things [commodities]" (Capital I, p. 74). The utility of an object, in the Marxian scheme, is a necessary but not a sufficient condition for an article to have value or be transformed into a commodity. His examples of use-values without value (and therefore without exchange-value) are "air, virgin soil, natural meadows" (Capital I, p. 40). For these, or any use-values, to have exchange-value it is necessary that they embody,

... the expenditure of simple labour-power, i.e., of the labour-power which, on an average apart from any special development, exists in the organism of every ordinary individual (ibid, p. 44).³

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³ Marx, like Ricardo before him, based his entire investigation upon the concept that it is the quantity of socially necessary labor expended on a commodity that determines the magnitude of the product's value which, through distribution, resolves itself into profit, wages, and rent. Marx praised Ricardo for disposing of Adam Smith's theory of value which suffered from a number of unresolved problems and contradictions, not the least of which was that it made rent one of the determinants of the value of commodities (see Capital II, pp. 241-50.) For Marx, the source of rent is surplus-labor in the form of surplus-value, while the natural fertility of the soil is one of the conditions determining the productivity of labor in terms of use-values—it is the basis but not the source of rent (see Capital III, p. 646). That is, although "land" *per se* has no exchange value because it is not the product of socially necessary labor, it has an "irrational price" which, according to Marx, is nothing but the capitalized rent it yields to landowners. The latter are able to demand payment for the use of land (broadly defined) because they have a monopoly in landed property; thus, rent is a socially (historically) determined category (see Ramirez, 2009, pp 76-78). Here, as elsewhere, Marx is following the Ricardian distinction between value in use and value in exchange (for further details, see Ricardo's important chapter entitled, *Value and Riches* in *Principles of Political Economy and Taxation* 2005 [orig. 1817], pp. 200-210). For a concise exposition of Marx's theory of value, its strengths and weaknesses, and how it differed from that of Smith and Ricardo, see Meek (1975 [orig. 1956], pp. 53-71); Roll,

Labor-power is to be understood as the capacity to work of the laborer; its expenditure over a given period of time is defined as labor. In other words, labor is to a flow what labor-power is to a stock (for further details, see Capital I, Ch, VI; Meek, 1975; and Ramirez, 2007, pp. 28-30). This simple average labor-power, in order to be expended and remain the same under its various modifications, must have attained a certain level of social development. Thus, when Marx speaks of socially necessary labor-time he means no more time than is needed on an average to produce a given commodity under standard technical conditions of production.⁴ For as he correctly remarks,

The introduction of power-looms into England reduced by one-half the labour required to weave a given quantity of yarn into cloth. The hand-loom weavers, as a matter of fact, continued to require the same time as before; but for all that, the product of one hour of the labour represented after the change only a half an hour's social labour, and consequently, fell to one-half its former value (ibid., p. 39).⁵

Briefly then, if you have a value (a good with exchange-value) in your possession, then you have an article of utility (use-value); the converse, however, is not necessarily true.

(1992, pp. 236-41); Rubin (1970, pp. 186-87); Sowell (1976 [orig. 1967], pp. 64-75); Sweezy (1970 [orig. 1942], pp. 26-47).

⁴ It should be noted that the labor time spent on the production of a commodity must not be viewed “as the time spent by a particular labourer on that particular commodity: one must not think that the ‘lazier or less skilled a man is,’ the more valuable will be his product” (Roll, 1992, p. 238).

⁵ Ricardo (2005 [originally 1817]) makes essentially the same argument regarding socially necessary labor in Chp. XX of his *Principles of Political Economy and Taxation*. He writes: “Suppose, with a given capital, the labor of a certain number of men produced 1000 pair of stockings, and that by inventions in machinery the same number of men can produce 2000 pair ... then the value of the 2000 pair of stockings ... will be neither more nor less than that of the 1000 pair of stockings before the introduction of machinery; for they will be the produce of the *same* quantity of labor. But the value of the general mass of commodities will ... be diminished; an effect is also produced on the portion of goods still unconsumed, which were manufactured previously to the improvement; the value of those goods will be reduced ... to the level of the goods produced under all advantages of the improvement” (pp. 200-201).

From our discussion so far we can ascertain that 1), capital's intensive and extensive application emerges in the 16th century; 2) this application most frequently assumes the form of usurer's (interest-bearing) and merchant's capital (i.e., mainly relegated to expediting the circulation of commodities via "profit upon alienation"); and 3), capital is not a thing, but a social (historical) process which ascribes to certain values the character of capital values, if and only if, these values augment their magnitude during the capital circuit (M-C-M').

III. Industrial Capital, the Time of Production, and the Turnover of Capital.

The intensive and extensive application of merchant's and usurer's capital during the 16th, aided and abetted by the large inflow of precious metals and the European price revolution, lays the foundation for the emergence of the capitalist mode of production. The nascent capitalist (merchant) class is able to extract ever-greater amounts of profits at the expense of workers (craftsmen) and landowners whose incomes are not able to keep up with the rise in prices. In this connection, Mandel (1971) observes that "rents, as well as wages, lagged behind prices; so landlords gained nothing from labour's loss. The latter's loss thus benefited the capitalist entrepreneurs only. Between 1500 and 1602 in England, [the] index of wages rose only from 95 to 124 whereas the index of prices rose from 95 to 243" (p. 107). In turn, the merchant-capitalist accumulates these larger profits in the form of "capital goods" in exporting industries that are primarily characterized by the "putting-out system" of production (see Hunt and Lautzenheiser, 2011; Roll, 1992; and Rubin, 1979). That is, as opposed to the handicraft industry where the independent craftsman owned his own tools and raw materials and sold the finished (wool or textile) product to the merchant, now it is the merchant-capitalist who owns the means of production and furnishes the craftsman (worker) with raw materials and pays him

to work those materials into a finished product. In other words, the craftsmen working in the emerging textile and wool (exporting) industries of the 16th and early 17th centuries are gradually transformed into workers who, instead of selling goods to the merchants, sell instead their capacity to work or what Marx refers to as labor-power.

Thus, merchant's (and interest-bearing) capital, by subordinating "production more and more to exchange-value by making luxuries and subsistence [goods] more dependent on sale than on the immediate use of the products...dissolves the old relationship. It multiplies money circulation.⁶ It encompasses no longer merely the surplus of production, but bites deeper and deeper in the latter and makes entire branches of production dependent upon it (see Capital III, p. 330; and TSV III, pp. 527-532). This transition, however, from one mode of production into another, although greatly facilitated by merchant's and usurer's capital, is incapable of explaining it. For the capitalist mode of production, as opposed to the manorial (feudal) handicraft system that preceded it, is characterized on the one hand by the separation of the immediate producers from their means of production, and on the other, by the concentration of the latter in the hands of a single social class—the bourgeoisie. In this connection, the role of the "putting-out system" in effecting this social change from one mode of production into

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⁶Marx, in TSV III, commends none other than Martin Luther—seminal figure in the Protestant Reformation—for his keen understanding of the important economic (and political) role played by usurers (and interest) in dissolving the old social (feudal) relationships and helping lay the foundation for the emergence of the capitalist system during the 16th century. In his interesting discussion of Luther's works on trade and usury, written in 1524 on the eve of the Peasant War, Marx writes: "Luther tells us how usurer's capital arises through the ruination of the citizens [small townspeople and peasants], the gentry, the nobility, and the princes ... On the one hand, the usurer comes into the possession of the surplus labour of plebeians, peasants, members of the craft guilds ... On the other hand, the usurer appropriates rent from the owners of rent, that is, from the prodigal, pleasure-seeking rich. Usury centralizes property, especially in the form of money... [it] is a powerful means for establishing the pre-conditions for industrial capital—a mighty agency for separating the conditions of production from the producers ... in short, as a factor leading to the centralization of the conditions of production in the form of capital (pp.529- 532); see also Mandel (1971, pp. 100-102).

another cannot be separated from other important, and closely related, economic and social forces that took place in England during the last third of the 15th and 16th centuries; namely, the enclosure movement and the forceful expropriation of tenant farmers from the land because sheep raising became more profitable to the feudal lords than cultivation of the soil. Clearly, a full discussion of these historical events would take us too far afield to discuss in this short essay, but suffice it to say that they arose, in part, to satisfy the growing demands of the booming wool and textile industries in England, as well as from the Protestant Reformation which led to the massive confiscation of church (Catholic) property; it should be noted that the church was, at the time, the most important owner of English land (for further details, see Capital I, Chp. XXVII; Brewer, 1990, pp. 42-48; Mandel, 1971; Howard and King, 1985; Roll, pp. 77-83; and Rubin, 1979).

With this new stage in the development of commodity producing societies, the circuit of capital takes on a new expanded form, namely:

$$(2) \quad \begin{array}{c} L \\ \diagup \\ M - C \quad \dots P \dots C' - M' \\ \diagdown \\ MP \end{array} \quad \text{with } C' = C + \Delta C$$

And where L= labor- power (capacity to work); MP = means of production; P = productive capital (value terms); and C' = commodity capital (value terms). In words, the merchant-capitalist comes to the commodity and labor markets with capital (potential) in the form of money (precious metals). Potential money capital with which he intends to purchase a sum of commodities in the form of means of production and labor-power that constitute his

productive capital (P). By means of whose social function he expects to obtain commodities which have a greater value than that of its constituent elements (L & MP). These, in turn, the capitalist will exchange for money—the universal equivalent—with which he will be enabled to start the process anew on a larger scale. Incidentally, the dots in the expanded circuit merely indicate that the process of circulation is interrupted with the functioning of productive capital—productive in the sense of generating a surplus-value (M').

Thus, the more capital takes this expanded form and the less the discontinuities present in the various phases of the circuit, the more developed is the capitalist mode of production, for

... the formula of the circuit of money capital, $M-C \dots P \dots C'-M'$, is the matter-of-course form of the circuit of capital only on the basis of already developed capitalist production, because it presupposes the existence of wage-labourers on a social scale ... capitalist production does not only create commodities and surplus-value, but also reproduces to an ever increasing extent the class of wage labourers, into whom it transforms the vast majority of direct producers (Capital II, p. 32).

As a matter of terminology, capital which takes on this expanded form on an ever more frequent basis is dubbed industrial capital by Marx—industrial in the sense that it assumes and discards its various forms in the total circuit of capital and “... it comprises every branch of industry run on a capitalist basis... its existence implies the class antagonism between capitalists and labourers. To the extent that it seizes control of social production, the technique and social organization of the labour-process are revolutionized and with them the economico-historical type of society” (ibid, pp. 48 and 55; see also Marx & Engels, 1848, pp. 62-65). To be sure, the movement of capital-value is not confined to a single circuit; it is repeatedly being turned over by the capitalist in order to accumulate more surplus value via the exploitation of wage-labor.

In fact, industrial capital is distinguished from earlier forms of capital by its continuous repetition,

$$(3) \begin{array}{c} L \\ \swarrow \quad \searrow \\ M^0 - C^0 \dots P^0 \dots C^1(C + \Delta C) - M^{1'} \end{array} \begin{array}{c} L \\ \swarrow \quad \searrow \\ (M + \Delta M) - C^{1'} \dots P^1 \dots C^{2''} - M^{2''}, \text{ and so forth.} \\ \swarrow \quad \searrow \\ MP \end{array}$$

Notice that over time the various individual industrial capitals comprising the total social capital of society must constantly go through their various forms viz., money, productive and commodity, in order to accumulate capital and reproduce it on an extended basis; however, at any given point in time, the individual industrial capitals may exist in all three of them simultaneously. Put differently, at any given point, there may be individual capitals entering their money phase ($M \dots M'$), while others are in their productive ($P \dots P$) or commodity ($C \dots C'$) forms. Marx's incisive (and relatively neglected) analysis in Capital II, Chp. IV, thus views the reproduction of the total social capital of society as a constantly repeating cycle where every point of departure is also a point of return. In his words, "... every one of these circuits is considered a special form of the movement in which various individual industrial capitals are engaged, this difference always exists only as an individual one. But in reality every industrial capital is present simultaneously in all three circuits. These three circuits ...are made continuously side by side ... The reproduction of capital in each of its forms and stages is just as continuous as the metamorphosis of these forms and the successive passage through the three stages. The entire circuit is thus really a unity of all three forms" (p. 101).

Any interruption of this circular movement, then, may be the result of a discontinuity of its individual phases—money, productive and commodity capital. Thus, if the social capital is interrupted in its first phase ($M - C$) it becomes a hoard. If it is interrupted in its production phase ($P.. P$) we have as a consequence idle means of production and unemployment. Finally, if capital stops its movement in the process of realization ($C' - M'$), the capitalists are left with piles of unsold commodities in warehouses and shops and are unable to restart their individual circuits and the accumulation of surplus-value (see Capital II, p. 103).⁷ Capital, in the Marxian paradigm, must be viewed as a continuous self-expanding value that exists simultaneously and spatially in its different forms (circuits) and rests on the existence of a class society based on wage-labor—the generalized buying and selling (commodification) of labor-power. Human labor-power, means of production, and money are just commodities (use-values), and only acquire the social character of capital at a definite historical epoch in commodity production (see Capital II, p. 35). Capital thus refers simultaneously to social relations and to things—it is the contradictory unity of a social process and the different material forms it assumes (see Harvey, 2014, pp. 70-71).

All of this makes it clear that, in order to create surplus-value by means of the advanced capital, the capitalist mode of production compels the individual capitalists, on penalty of

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⁷ Interestingly enough, Keynes who concentrated on the realization problem, recognized Marx's contribution in this area. He even suggests that Marx's analysis of the realization problem crisis in capitalism is close to that of his own discussion of the problem: "The excess of M' over M is the source of Marx's surplus value ... [he] was approaching the intermediate truth when he added that the continuous excess of M' over M would be inevitably interrupted by a series of crises, gradually increasing in intensity, or entrepreneur bankruptcy and underemployment, during which, presumably M must be in excess. My own argument ... should at least serve to effect a reconciliation between the followers of Marx and those of Major Douglas, leaving the classical economists still high and dry in the belief that M and M' are always equal!" For further details, see Brandis (1985, pp. 643-659); Ramirez (1990, p. 160); Dillard (1984, p. 424); and Sardoni (1986, pp. 419-441).

extinction, to repeat their circuits over and over again on an ever expanding scale. For Marx, the worker is nothing but “a machine for the production of surplus-value,” while the capitalist, as personified capital is, “in its eyes only a machine for the conversion of this surplus-value into additional capital” (Capital I, p. 595). In this connection, Harvey (2014) cogently observes that, “Capital exists as a continuous flow of value through the different physical states ...The continuity of the flow is a primary condition of capital’s existence... If I can circulate my capital faster than you, then I have a competitive advantage. There is considerable competitive pressure to accelerate the turnover time of capital. The tendency towards speed-up is easily identifiable in capital’s history” (p. 73).

To be precise, this movement which is supposed to be of a periodical nature, not an individual act, is called by Marx the turnover of capital—it encompasses both the time of production and circulation (see Capital II, p. 153). Needless to say, the turnover time of individual capitalists will differ greatly owing to the different conditions of production and circulation. For instance, the turnover of capital will be much slower when employed in the construction of large-scale installations such as, nuclear power plants, high-speed railways, etc., than when employed in the light and food industries where the turnover may take a few weeks or months. More precisely, let us designate the year as the unit of measure of the turnover time by T , the time of turnover of any individual capital by t , and finally, the number of turnovers by n . Hence, the number of turnovers of any individual capital is given by,

$$(4) \quad n = T/t$$

To illustrate, if a capital completes its turnover in 2 months it will have six turnovers during the year, while if it completes it in 24 months it will only have completed half of its turnover within a year. From the standpoint of the capitalist, “the time of turnover of his capital is the time for which he must advance his capital in order to create surplus-value with it and receive it back in its original shape” (ibid., p. 156).

The speed at which industrial capital will turnover will depend, above all, as suggested in our example above, on the composition of capital in its productive phase. Namely, we know that capital-value in this latter form consists of means of production (i.e., factory buildings, machinery, raw materials, fuel, etc) and labor –power. In the process of production these various factors transfer their capital-value to the product at different rates. On the one hand, we have those elements of productive capital that fully participate in production but transfer their value to the commodity over a number of turnover periods before they are scraped; these factors are called fixed capital and they include the instruments of labor (factory buildings, machinery, equipment, and so on). On the other hand, we refer to those elements which are consumed in a one single turnover period as circulating capital (viz., labor power, raw materials, auxiliary materials, fuel, etc).

Now, lest there be confusion, fixed and circulating capital refer to the manner in which value is *transferred* to the commodity being produced during the turnover period, not to the production of value and surplus-value. The latter distinction is brought into focus by separating capital into its constant (c) and variable (v) components. Constant capital in the Marxian scheme is comprised of machinery, plant and equipment *plus* materials and accessories used in the circuit of capital, and as the name implies, it transfers its existing value to the product (in

the case of machinery and equipment it only transfers part of its value in a single turnover via the depreciation of fixed capital). Thus, it is composed of fixed as well as circulating elements. Variable capital, meanwhile, is constituted only of labor-power which has been integrated into the productive phase of the circuit of capital; it is circulating capital by virtue of the way in which it circulates, namely, it transfers the full value it creates by its expenditure (labor) to the commodity in the course of a single turnover. It is variable capital because during the working period it not only reproduces its own value (wages) but a surplus-value which is seized by the capitalist by virtue of his ownership of the means of production—this is what Marx meant by “exploitation” and it arises in a competitive economy not because the worker is paid *less* than she is worth but because she produces *more* than she is worth (see Ekelund, Jr. and Hebert, 2004, p. 238; and Meek, 1975 [orig. 1956], pp. 183-84).⁸ The Venn Diagram depicted in Figure 1 below brings this distinction into sharper focus.

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⁸ In Capital I Marx defines surplus-value in the following terms: “The fact that half a day’s labour is necessary to keep the labourer alive during 24 hours, does not in any way prevent him from working the whole day. Therefore, the value of labour-power, and the value which labour-power creates in the labour process, are two entirely different magnitudes; and this difference of the two values was what the capitalist had in view when he was purchasing the labour-power” (p. 193). In other words, surplus-value is a historical category inherent to capitalism that results from the development of the productive forces of society, i.e., the capitalist, by virtue of his ownership of the means of production (itself a historical process), is able to appropriate this surplus-labor in the form of surplus-value without compensation. Marx defined the rate of surplus-value as the ratio of surplus-value (s) to variable capital (v), so, if a worker’s labor-power is worth \$30 per working day but she generates through her labor \$50 of surplus-value for the capitalist, then the rate of surplus-value ($s'=s/v$) is 166.7 percent. For further details, see Meek’s classic discussion of both the strengths and weaknesses of the labor theory of value (ibid., Chp. IV); See also Roll (1992, pp. 241-47).

Figure 1

Marx went to great lengths to emphasize that the critical distinction, insofar as the creation of value is concerned, is that between variable and constant capital, and criticized the classical economists for viewing capital merely from the standpoint of circulating and fixed capital, thus obliterating or “fetishizing” the more important distinction between constant and variable capital. In his words, “It is evident at the outset that the definition of capital invested in labour-power as circulating or fluent capital is of secondary one...For in this definition ...the capitals invested in labour [power] are of the same importance of those invested in raw materials, etc. A classification which identifies a part of the constant capital [raw materials] with the variable capital [wages] does not deal with the *differentia specifica* of variable capital in opposition to constant capital” (Capital II, p. 224). Marx believed that the economists of his day, with the exception of David Ricardo, uncritically (and deliberately) adopted Adam Smith’s erroneous and confused view, viz., that the part of capital laid out in wages was no different from that spent on raw materials, and only differed formally from that disbursed on fixed capital in terms of

whether it transferred its value to the product in one lump sum or piecemeal. In doing so, Political Economy was able to obfuscate and “fetishize” the social process of production into one where the capital advanced (in wages, raw materials, and machinery) merely reappears in the value of the commodity when sold so that the process can start anew. In other words, “the transformation of the capitalist process of production into a complete mystery is happily accomplished and the origin of surplus-value existing in the value of the product is entirely withdrawn from view” (ibid., p. 225).

By treating the social relations of production (labor and capital) as if they were simply material things or technical relations, it was just a simple step for the “vulgar economists”—as opposed to the classical economists—to adopt the so-called “Trinity Formula” whereby capital earns profit, land earns rent, and labor earns wages. Marx devoted a whole chapter in Vol. III to refuting this categorization of revenues and their sources by arguing that labor, means of production (not capital), and land are essential factors in the production of use values but not exchange value. Labor creates value but only under certain historical conditions, viz., a class society based on the generalized buying and selling of labor-power; capital, as we have indicated, is a social relation of production manifested in certain things (machinery, raw materials, etc.) used in the production process; and finally, land, although an agent of production in creating use-values such as wheat, has nothing to do with the production of exchange-value; it is the private ownership of land—a social relation—which enables the landlord class to capture a part of the surplus value materialized in the agricultural product (see Brewer 1984, pp. 180-83; Ramirez, 2009, pp. 71-91; and Roll, 1992, pp. 252-54). Marx viewed the “Trinity Formula” as the complete mystification of the capitalist mode of production, the

conversion of social relations into things, and led him to remark mockingly that, “ It is an enchanted , perverted, topsy-turvy world, in which Monsieur le Capital and Madame la Terre do their ghost-walking as social characters and at the same time directly as mere things. It is the great merit of classical economy to have destroyed this false appearance and illusion ... this personification of things and conversion of production relations into entities, the religion of everyday life” (Capital III, p. 830; see also TSV III, pp. 514-515).⁹

To summarize, fixed capital transfers (does not create) its value to the commodity in proportion to its physical wear and tear as well as obsolescence (moral depreciation) due to technical progress. For example, the amount of value transferred to a finished product each year by a machine with an operative life of 20 years is 5 percent. That is, $1/20^{\text{th}}$ of the value reimbursed in money form each year must be set aside as a depreciation fund. Circulating capital, meanwhile, transfers its full value to the finished product in one turnover, part of which reimburses the capitalist’s expenditure on variable capital—the latter not only reproduces its own value but creates an additional (surplus) value during the working period of the production phase.

Insofar as the effect of scientific and technical progress on the time of production is concerned, Marx argued that it would have an ambiguous effect. On the one hand, the introduction of technology usually increases the proportion of fixed capital which decreases the

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⁹ Even though Piketty (2014) is fond of quoting Marx in his seminal work (e.g., pp. 7-13) and argues that his own analysis is in the tradition of the classical economists, there is no doubt that Marx would be highly critical of Piketty’s definition of capital and his *de facto* “conversion of social relations into things.” On the one hand, he ascribes to nonhuman resources (machinery and land) the capacity of producing exchange-value (as opposed to merely transferring their existing value or helping produce use-values); yet, on the other, he excludes labor-power which, in the Marxian paradigm, is the only factor of production capable of producing an exchange-value greater than its own value—the source of profit and the return to capital.

rate of turnover of capital, and thus the rate of surplus-value (and profit); on the other, the application of scientific principles to practical tasks cheapens the existing equipment and accelerates its obsolescence which increases the turnover of capital and the rate of profit. Capitalists, under the yoke of completion, are constantly striving to minimize the losses incurred by the moral depreciation of fixed capital by speeding up the turnover of capital which, in turn, necessitates the maximum use of machinery and intensification in the exploitation of workers. Marx observes that, “The chief means of reducing the time of production is higher labour productivity, which is commonly called industrial progress. If this does *not* involve a simultaneous considerable increase in the outlay of social capital resulting from the installation of expensive machinery” (Capital III, p. 70). He then goes on to cite and describe recent technological improvements in metallurgy and chemistry, such as the Bessemer and Siemens processes which drastically cut the costs of producing iron and steel despite the increase in the proportion of fixed (constant) capital (see Capital III, p. 71).

Marx was careful to distinguish between the time of production and the labor process or working time. He observes correctly in Chp. XIII of Vol. II that the time of production is--due to interruptions in production and physical and chemical changes--inherently longer than the actual working time (labor-process) during which surplus-value is actually created or produced; anything, therefore, that shortens the working period, such as making the same number of workers work more intensely, or more decisively, increasing the productivity of labor via new investments in machinery and technical improvements, will *ceteris paribus* shorten the turnover period of capital, thus boosting the creation of surplus-value and profit. On this point, Marx argues that an acceleration in the turnover of the total capital advanced will also result in

an acceleration in the turnover of its variable part, and a concomitant increase in both the mass (S) and annual rate of surplus value (S'). For example, suppose that we have two firms, A and B, with an advanced variable capital of \$10,000 each. Assume also that the rate of surplus-value (s'), the ratio of surplus-value to variable capital (s/v), is 100 percent in both of them and that firm A turns over its capital over once during the course of a year while enterprise B does so on a monthly basis. Under these conditions, the yearly mass of surplus value is \$10,000 in firm A, while it is \$120,000 (\$10,000 x 12) in enterprise B. Clearly, the faster the advanced variable capital is turned over, the more surplus value is produced during a year and the higher is the annual rate of surplus-value. More precisely, the annual rate of surplus value is equal to what Marx calls the real rate of surplus value (s') times the number of turnovers (n) of the capital in a year relative to the advanced variable capital (v), that is,

$$(5) \quad S' = s'nv/v, \text{ where } s' = s/v$$

It should be noted here that the v in the numerator is the variable capital advanced in each turnover (a flow variable), while the v in the denominator is variable capital *initially* advanced (a stock variable). The two v's are only equal if the turnover time is precisely one year and Marx in Vol. III was not always altogether clear or consistent about this. In Marx's Vol. II formulation, given in Chp. XVI, the annual rate of surplus-value produced during a given time period is calculated relative to the variable capital initially advanced, viz., $S' = s'nv/v$, and Marx observes that "Only when n is equal to 1, that is, when the variable capital initially advanced is turned over once a year, and hence equal to the [variable] capital employed or turned over during a year, the annual rate of surplus-value [S'] is equal to its real rate [s']" (Vol. II, p. 305). The mass

of surplus value and its annual rate thus change in direct proportion to the number of turnovers of the variable capital advanced, *ceteris paribus* (for details, see Ramirez, 2014, pp. 63-65).

IV. Time of Circulation, Credit, and the Turnover of Capital.

Up until now we have confined our discussion of the turnover of industrial capital insofar as it “...is held fast in the sphere of production” (ibid., p. 238). But the time of turnover is also affected when commodities are in the process of being sold or bought, or when they are transported from their place of production to their markets. Thus, several key factors affecting the time of circulation of commodities remain to be investigated, because the longer the former is, the shorter is the time of production and thus the production of surplus-value (profit).

The most important, Marx would argue, is “... the period during which capital exists in the state of commodity-capital” (ibid., p. 248). That is, the time of turnover will be long or short depending on the duration of the selling period. The latter may be shortened by increasing the size of the market and/or the purchasing power of the population.¹⁰ An important condition for this to occur is by improving the means of transportation and communication, such as the use of railways and the telegraph [and the internet today], both of which “...cut down absolutely the wandering period of commodities” (ibid., p. 249). Marx argues that the inherent technical progress arising from capitalist production creates a synergism between improvements in the means transportation and communication and the size of the market, with one feeding upon

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¹⁰ Once again, Keynes was well aware of Marx’s implicit theory of effective demand as evidenced by the following passage: “The great puzzle of Effective Demand with which Malthus had wrestled ...could only live on furtively, below the surface, in the underworlds of Karl Marx, Silvio Gesell or Major Douglas” (1936, p. 32).

the other so that the development of the means of transport and communication compel the capitalist to “...work for ever remote markets, in a word—for the world market” (p. 251)—the analysis undertaken in Vol. II is completely consistent with his (and Engels’) more polemical presentation in the Communist Manifesto (see Marx & Engels, 1848, pp. 62-64).

Insofar as effective demand is concerned, Marx alludes to the contradictory effect of the capitalist mode of production on the purchasing power of the working class in Chp. XVI, Vol. II, and elsewhere in *Capital*. On the one hand, workers as buyers are important for the realization (sale) of commodities in the market, but as sellers of their own commodity—labor power—the capitalist class has an interest in keeping their real wages to a minimum in order minimize costs (see Howard and King, 1985, pp. 216-17). Thus, he observes that, “the sale of commodities, the realization of commodity capital and thus of surplus-value, is limited, not by the consumer requirements of society in general, but by the consumer requirements of a society in which the vast majority are always poor and must always remain poor” (ibid., p. 316). Marx’s analysis here, and elsewhere in Vol. II, is particularly important because, as noted by David Harvey (2014), he is highlighting the inherently contradictory nature of the capitalist mode of production between the production and realization of surplus value. In Harvey’s words, “Capitalism as a social formation is perpetually caught in this contradiction. It can either maximize the conditions for the production of surplus value, and so threaten the capacity to *realize* surplus value in the market, or keep effective demand strong in the market by empowering workers and threaten the ability to create surplus value in production” (p. 81). If one adopts this correct interpretation of Marx’s writings, then Marx’s criticism of those who advance a crude underconsumptionist theory, viz., one that explains crises as a result of a lack

of purchasing power, makes perfect sense (see Sherman and Evans, 1984, pp.259-61; and Roll, 1992, pp. 258-260). He writes, in a short but important digression on crises in Chp. XVI, Vol. II, the following passage that deserves to be quoted in full:

“It is sheer tautology to say that crises are caused by the scarcity of effective consumption, or of effective consumers...That commodities are unsaleable means only that no effective purchasers have been found for them, i.e., consumers (since commodities are bought ... for productive or individual consumption). But if one were to attempt to give this ... a profounder justification by saying that the working-class receives too small a portion of its own product and the evil would be remedied as soon as it receives a larger share, one could only remark that crises are always prepared by precisely a period in which wages rise generally and the working class gets a larger share of that part of the annual product which is intended for consumption. From the point of view of these advocates of sound and simple (!) common sense, such a period should rather remove the crisis. It appears, then, that capitalist production comprises conditions independent of good or bad will, conditions which permit the working-class to enjoy that relative prosperity only momentarily, and at that always only as the harbinger of a coming crisis” (pp. 410-411).

Turning to the second phase of the time of circulation, the buying time, the aforementioned improvements will greatly facilitate the conversion of money into the elements of productive capital (means of production and labor-power). Moreover, during this phase the capitalist must always have a part of the advanced capital in the form of money for,

... money must be advanced from time to time in rather large quantities and lump sums. It returns more or less rapidly, but always in installments according to the turnover of capital. One portion of it...the part converted into wages, is just continually expended again at short intervals. But another portion ... that which is reconverted into raw materials, etc., must be accumulated for rather long periods as a reserve fund for either buying (immediate purchase) or paying (credit) (Capital II, p. 255).

In other words, in order for there to be a real accumulation of capital on an extended basis (i.e., conversion of surplus-value into productive capital), there must also be a concomitant

accumulation of money capital by capitalists which, once it has reached a certain volume, can be profitably put to work in the economy. The credit system plays a key role in the process of realizing and producing commodities because the times of production and circulation are different in different sectors of the economy, say, steel vs. textile production. For example, some capitalists appear on the market as sellers before other capitalists (and consumers) can appear as effective buyers; in addition, the renewal of fixed capital does not take place at the exact time when the depreciation funds have reached their critical level. Capitalists will renew their fixed capital and/or introduce new technical inventions at opportune phases of the business cycle, viz., when a significant and profitable expansion of the market is taking place; at that precise moment, they will have to borrow the money capital they need if the depreciation or accumulation funds have not yet reached their critical level. Credit, in the form of commercial and bank credit, allows commodities to be sold with actual payment deferred for a specific period of time.¹¹ By doing so, it speeds up the process of realizing (selling) commodities and thus the reconversion of surplus-value into productive capital with which to continue the process of capitalist reproduction on an extended scale. However, credit, by separating the acts of buying and selling for longer periods, lays the basis for speculation and crises because it makes it possible for production to increase without any direct relation to the absorptive capacity of the market; i.e., “by stimulating the circulation of and consumption of commodities over and beyond the real purchasing power available, credit puts off the date of the periodical crises, aggravates the factors of disequilibrium, and thereby makes the crisis more violent when

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¹¹ These written “promises” to pay at some agreed upon future date are called bills of exchange (the financial derivatives of their time), and they were usually used by capitalists to settle debts, purchase goods, or presented to banks for actual money, albeit at a discount—essentially a bank loan (see Capital III, pp. 479-81).

it breaks” (see Harvey, 2014, pp. 81-83; Harvey, 1982; Howard and King, 1985, pp. 218-220; Kliman, 2014, pp. 19-21; Mandel, 1971, p. 238; Nelson, 1999; O’Hara, 2000, pp. 83-90; Ramirez, 2014, pp. 65-68; Shuklian, 1991; and Sweezy, 1994, pp. 1-11).

Marx was well ahead of his contemporaries in his understanding of the decisive role played by the credit system in shortening and expanding the various circuits of capital; he focused on three major channels: First, credit plays a pivotal role in equalizing (averaging) the rate of profit by helping speed up the flow of capital from one industry to another, thus leading to the transformation of exchange values (labor values) into prices of production (“natural prices”) — the so-called transformation problem (see Dobb, 1939; Howard and King, 1989, pp. 42-50; and Rubin, 1979, pp. 266-270);¹² second, as indicated above, it reduces the costs of circulation by speeding up the circulation of commodities and shortening the turnover time of capital;¹³ and third, credit acts as a powerful lever for expropriating the capital of small capitalists by big ones—it accelerates the concentration and centralization of capitals via the formation of stock companies which, in turn, further stimulates the scale of production and the creation of surplus-value (profit) and the development of capitalism on both a national and international

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¹² This is the problem that Ricardo (and before him Smith) was unable to solve and led to the disintegration of the Ricardian School during the 1820s and 1830s. It basically revolves around the issue of how is it possible for the labor theory of value to retain its validity when the commodities being exchanged are produced by capitals of unequal organic compositions [constant (c) relative to variable (v) capital], of different durability, and advanced for different periods of time. Marx attempted to solve the problem by arguing that commodities do not sell at their simple labor values, but at their prices of production (i.e., cost price, $c + v$, plus average rate of profit) which deviate from these labor values in a systematic fashion. In other words, the total surplus value of society remains the same and is redistributed (via the forces of competition) so as to equalize rates of profit and selling prices. For further details on the voluminous literature surrounding this topic, see Blaug (1986, pp. 229-236); Ekelund, Jr. and Hebert (2004); Hunt and Lautzenheiser (2011 pp. 222-231); Meek (1975, pp. 16-28), Howard and King (1989, Chp. 3); Rubin (1979, pp. 267-270); Seton (1957, pp. 149-60); Sweezy (1970, pp.109-130); and Wolfson (1990, pp. 179-195).

¹³ Barba and de Vivo (2012) also suggest that Marx “conceives a possible positive influence of credit on the average rate of profit (e.g., when it allows the capital to circulate more rapidly)” (p. 1486). See also Ramirez (2014, pp. 61-68).

scale (see Vol. III, pp. 435-38). Marx, however, believed that the “financialization” of the accumulation process would only enable the capitalist mode of production to develop in an highly erratic and contradictory fashion, punctuated by recurring and ever-growing crises, because, as indicated above, it sharpens the basic contradiction of capitalism, viz., that between the social character of production (concentration of thousands of workers in giant enterprises) and its private capitalist form of appropriation [now primarily in the form of interest, i.e., as mere compensation for owning capital that is now divorced from the function of the capitalist manager (see Vol. III, pp. 436-7)].¹⁴

Marx also believed that the credit system would ultimately make the joint stock company the dominant economic unit of advanced capitalism as evidenced by the following passage:

The credit system is not only the principal basis for the gradual transformation of capitalist private enterprises into capitalist stock companies, but equally offers the means for the gradual extension of co-operative enterprises on a more or national scale. The capitalist stock companies ... should be considered as transitional forms from the capitalist mode of production to the associated one ... This is the abolition of the capitalist mode of production within the capitalist mode of production itself... (Capital III, pp. 438 and 440).

As indicated above, the separation of profit from interest effected by the generalized use of credit transforms the nature of the capitalist class in a decisive manner. The emergence of the joint stock company gives rise to a growing class of rentiers or money capitalists (bankers) who have no direct or personal contact with the production process itself or, for that matter, the

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¹⁴ Sweezy (1997, pp.1-4) was one of the first scholars (Marxist or otherwise) to coin the term “financialization” of the accumulation process as a means of propping up effective (aggregate) demand in order to counter the economic forces of stagnation plaguing the global economy under monopoly capitalism since 1974-75. For further details, see Sweezy (1994, pp. 1-11).

actual management of the capitalist enterprise; they live merely by virtue of their ownership of loan capital. In the words of Mandel, “The *private* character of capitalist appropriation, which remains personal and tangible in the capitalist enterprise which is family property, becomes more and more objective, abstract, in the joint stock company. The rule of capital assumes its most general and anonymous form” (p. 237).¹⁵

Another related and highly important contribution Marx makes in his discussion of joint stock companies (and the role of credit in expediting the turnover of capital) relates to how the separation of ownership from management generates moral hazard and excessive speculation just before the onset of the crisis. He writes, “The credit system appears as the main lever of over-production and over-speculation in commerce because the reproduction process...is forced to its extreme limits, and is so forced because a large part of the social capital is employed by people who *do not own it* (my emphasis) and consequently tackle things quite differently than the owner, who anxiously weighs the limitations of his private capital in so far as he handles it himself” (p. 441). Marx’s analysis anticipates, to some degree, Keynes’s own insightful observations decades later in Chp. 12 of the *General Theory* where he argues that the divorce of management and ownership which characterizes organized investment markets tends to generate destabilizing speculation because of “the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon

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¹⁵ This is also one of the major arguments advanced by John Kenneth Galbraith (1972) in his assault upon the neoclassical theory of the firm.

the holding of “liquid” securities ...(forgetting) that there is no such thing as liquidity of investment for the community as a whole” (p. 155).¹⁶

Although Marx correctly predicted that the joint stock company (corporation) would become the dominant economic unit of mature capitalism, he was clearly incorrect in believing that this would somehow presage the abolition of the capitalist mode of production—far from it, as attested by the resilience and adaptability of the capitalist system through subsequent depressions, recessions, world wars, and the implosion of the so-called “socialist system” in the former Soviet Union and its erstwhile satellites.

V. Time, Interest-bearing Capital, and Productive vs. Unproductive labor

Before concluding our analysis of the time of turnover of industrial capital, it will expedient to make a brief digression into the role of time in Marxian economics. For it is not infrequent for many economists, most prominently, Bohm Bawerk, who identified capitalist production with roundabout production, to criticize Marx on this score.¹⁷

The category of time is an integral component of Marx’s development of a theory of value and surplus value. However, it is not time *per se* or the difference in subjective time preferences

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¹⁶Kliman (2011) concurs with this assessment and remarks that, “I doubt if any of this would have surprised Marx. Indeed, he argues that moral hazard is *the* problem that makes the credit system ‘the principal lever of overproduction and excessive speculation.’ He also suggests that moral hazard is not a defect created by any financial system but an inevitable by-product of credit as such, since debtors inevitable take risks with creditors’ funds, even when they do business directly, instead of through the intermediation of financial institutions” (p. 20).

¹⁷ Bohm Bawerk in his *The Positive Theory of Capital* (1923) argued that any production process that uses tools and intermediate products was a capitalist production process. He states that, “The roundabout ways are fruitful but long...It is only because the labourers cannot wait till the roundaboutness delivers up its products ready for consumption that they become economically dependent on the capitalists” (quoted in Hunt and Lautzenheiser, 2011, pp. 312-313). In this regard, Mark Blaug (1986) contends that Bohm Bawerk did not consider “abstinence” as an independent factor of production nor did he believe that “interest owes its existence to the personal activity of capitalists” (p. 242). However, in light of the quotation above, it is hard not to conclude that the accumulation of capital is made possible because capitalists have the “moral character” to wait or abstain while workers want their reward now.

between workers and capitalists à la Bohm Bawerk which are central, it is the analysis of the socio-economic and technical (objective) factors evolving through time that distinguish the Marxian paradigm from the neoclassical one. That is, in assessing the role of time we must, above all, “...single out the characteristics of economic objects that are examined in their time dimension and the [historical] factors that influence these economic objects in the period under review” (Shemyatenkov, 1981, p. 117). These economic entities, as we have seen, include commodities with their dual nature of use-value and exchange-value, and the most important factor influencing the latter over time is socially necessary labor time—a manifestation of the time factor in the capitalist mode of production. That is, the focus should be on identifying (and explaining) those key factors which regulate the production of absolute and relative surplus value over time such as the length (and intensity) of the working day, the productivity of labor, and the turnover of capital.

Thus, for Marx, interest-bearing capital is not a direct payment for the “burden of waiting or abstaining” by some abstract [universal] “economic agent” but a transformed part of surplus value (profit), the product of loan capital—a payment for the use of a sum of money to make a profit (see Brewer, 1984, pp. 156-590; and Roll, 1992, pp.253-54). It is created by a division of profit (surplus-value) into interest and profit of enterprise. If the capitalist operates entirely with borrowed funds to run his enterprise, then interest takes part of the profit, while “...the remainder, which Marx calls the profit of enterprise, is a return to the active performance of the functions of a capitalist” (ibid., p. 158).¹⁸ In the Marxian scheme, the interest rate is

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¹⁸ In Marx’s words: “Interest ...is nothing but a part of the profit (itself nothing but surplus-value, unpaid labour) which the capitalist pays to the owner of the borrowed capital with which he “works,” either exclusively or partially. Interest is a part of profit—of surplus-value—which instead of being appropriated by the industrial capitalist

determined by the average rate of profit on industrial capital, and the supply and demand for loan capital. The average rate of profit can be taken as the upper limit of the rate of interest and its movement over time is dependent on the different phases of the business (industrial) cycle. During the boom phase, the rate of interest rises significantly and reaches a maximum during the crisis phase, when the demand for liquidity grows to the limit as many firms are threatened with bankruptcy. The minimum rate which, according to Marx, may fall to a level close to zero, is observed during a depression when, after the crisis, production and employment stagnate. On a secular basis, Marx believed that the rate of interest would have a tendency to fall because the average rate of profit has a tendency to fall over time, and also because the supply of loan capital would rise relative to its demand due to the development of the credit system which concentrates the “free money resources” of society into the hands of bankers and stock promoters (see Mandel, 1971, pp. 222-226).

Put differently, the extent of the postponement of social consumption is determined by both the accumulation and reproduction needs of capitalist production over the course of the industrial cycle and by the secular (long-run) tendencies inherent to the capitalist system, rather than by the thriftiness or “abstinence” of individuals (see Shemanyatenkov, p. 118). It is dictated by the constant need under competitive capitalism to save time in order to “Accumulate, accumulate! That is Moses and the prophets! ...Therefore, save, save, i.e., reconvert the greater possible portion of surplus-value, or surplus-product into capital” (Capital I, p.595). Hence, it is impossible to have an all-encompassing (universal) definition of the

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himself...is deducted by the industrial capitalist from his own revenue and paid to the owner of capital” (TSV III, pp. 470-71). For further details on Marx’s theory of interest, see Fine (1986, pp. 387-418) and Roll (1992, pp. 253-54).

economic role of time as the neoclassical economists would have us believe, for it will differ from one historically determined mode of production to another (e.g., capitalism vs. feudalism).

We see then that capital (more correctly capital-value) may assume some forms more often than others depending on the particular stage in economic history in which we find ourselves. Thus, during the formative years of the capitalist mode of production it was more apt to assume the form of money (bullion); while in the 18th and 19th centuries it came to be associated more and more (at least in England) with machinery, plant and equipment. But above all, with this particular stage in history, labor power becomes integrated into the circuit of money capital as productive capital. For only when the production by means of wage labor becomes universal does commodity production attain its most general expression. This, by the way, gives us a clue into the reason the majority of economists identify capital with means of production and labor-power since under this particular organization of production it assumes this social forms most frequently.

Capital, then, when conceived in this fashion, not only paves the way for resolving present-day controversies but also supplies us with the means to understand more fully certain topics in the history of economic thought. A case in point would be Adam Smith's important distinction between productive and unproductive labor. A distinction, whose clear comprehension rests upon whether the workers exchange the services of their labor-power directly against capital or against the revenue of the capitalist. In the former case, their labor is said to be of a productive nature, while in the latter situation it is deemed unproductive. In Smith's words,

There is one sort of labour which adds to the value of the subject upon which it is bestowed: there is another which has no effect. The former, as it produces a value, may

be called productive; the latter, unproductive labour. Thus the labour of a manufacture adds, generally, to the value of the materials which he works upon, that of his own maintenance, and *of his master's profit*. The labour of a menial servant, on the contrary, add to the value of nothing. Though the manufacturer has his wages advanced to him by his master, he, in reality costs him no expense, the value of those wages being generally restored, together with a profit ...But the employment of a menial servant never is restored (Smith, 1976, p. 351).

Smith is here deriving in an embryonic form, nothing but the notion that when the net income of the capitalist is used to buy use-values for ultimate consumption it is not being converted into capital. Consequently, if the services of a menial servant or, for that matter, of both the gravest and most frivolous professions, such as “lawyers, physicians ... [and] players, buffons, musicians” are used for his personal consumption or enjoyment, they are of an unproductive character (ibid., p. 352). Quite the contrary is the case if these very same services are used in running his business along capitalist lines; in this activity they are said to be productive. So, those workers whose labor yields a surplus value (M') are called productive, while those whose labor is merely of a useful nature are called unproductive. Though in both cases they be, materially speaking, the very same services performed, the nature of the social relations of production deems them productive of exchange value in one case, and unproductive in the other.

Smith, as Marx clearly recognized, was a pioneer in formulating a nascent theory of capital and revenue, one in which all wage labor, be it in agriculture or industry, is productive when exchanged for money in order to produce surplus-value (profit). In *Theories of Surplus Value I*, Marx praises him thus, “Productive labour is here defined from the standpoint of capitalist production, and Adam Smith here got to the very heart of the matter, hit the nail on the head.

This is one of his greatest scientific merits ... that he defines productive labour as labour *which is directly exchanged with capital*" (emphasis in the original; p. 157). Unproductive labor, on the other hand, is that which is directly exchanged against the revenues of the capitalist for the latter's own consumption (a maid, a cook, chauffeur, etc.). It is important to note, in passing, that Smith goes beyond the restricted conception of the Physiocrats who, despite having understood that surplus value is created in the process of production, nevertheless identified it solely with rent and thought erroneously that it was only generated by the labor of agricultural workers (see Rubin, 1979, p. 214; and TSV I, pp. 162-63).

Still, despite correctly deriving the distinction between productive and unproductive labor on the basis of their different social relations, rather than their technical-material properties, he, too, falls into the trap of conceptualizing social relations as being the inherent properties of things. In the very same passage quoted above, he offers an alternate definition for productive labor based on whether productive labor is embodied in a vendible commodity. He writes:

A man grows rich by employing a multitude of manufacturers: he grows poor , by maintaining a multitude of menial servants ... the labour of the manufacturer fixes and realizes itself in some particular vendible commodity, which lasts some time at least after the labour is past ...The labour of the menial servant, on the contrary, does not fix or realize itself in any particular subject or vendible commodity. His services generally perish in the very instant of their performance, and seldom leave any trace or value behind them, for which an equal quantity of service could afterwards be procured (ibid., pp. 351-52)

Smith does not realize that whether or not the services of the worker are directly embodied in use-values is immaterial to the distinction between productive and unproductive labor. Indeed, what really matters is whether the services of labor-power are used to produce a value whose magnitude is greater than its own exchange value. That, in the capitalist mode of production,

this surplus value is usually embodied in commodities should not in any way detract us from the fact that we are dealing with a social process. Apropos, Marx writes: “The cook in the hotel produced a commodity for the person who as a capitalist has bought her labour—the hotel proprietor; the consumer of the mutton chops has to pay her for her labour, and this labour replaces for the hotel proprietor (apart from profit) the fund out of which he continues to pay the cook... On the other hand, if I buy the labour of a cook for her to cook meat, etc., for me [to enjoy it] .. then her labour is unproductive, in spite of the fact that this labour fixes itself in a material product” (TSV, I, p. 165).

It is evident then that capital in the Marxian scheme is a dynamic, multi-dimensional, and socially-determined concept. In fact, by way of an analogy, we may think of capital as being a rule or function—in the mathematical sense—which ascribes to certain elements (values) in its domain the image (character) of capital values in its range provided that they augment their value via the production of a surplus-value. This can be depicted, perhaps more clearly, by means of the diagram below (Figure 2). As exchange-values then, money (gold), machinery, and labor-power are just the embodiments of so much necessary labor-time; they only differ quantitatively (and therefore the legitimacy of this analogy).

Figure 2

Where: x = money (gold) in value terms; y =machinery in value terms; z =labor-power in value terms; $K(.)$ = capital function; $K(x)$ = money-capital in value terms; $K(y)$ = constant capital in value terms; and $K(z)$ = variable capital in value terms.

While, on the other hand, as use-values they matter to us insofar as they are qualitatively different. The condition of being an exchange-value (value) is, therefore, both a necessary and sufficient one for being included in the domain of the K function. In our example, then, we would say that the K function has ascribed to the value in the form of money in its domain its image of money-capital in its range. In other words, the K function has mapped money into money-capital; or, more precisely, potential capital has been mapped (transformed) into real capital by the capital function (process). Admittedly, this is a somewhat abstract way of interpreting the meaning of capital, but the analogy of a mathematical function or rule is most useful in capturing the multi-dimensional character of capital. When viewing it as such, one

surely steers away from the misconception that it is the physical property of an object that determines whether it is capital or not. The major disadvantage of this analogy, of course, is that one can easily forget that we are dealing with a concept which is firmly rooted in socio-historical phenomena. For, as we mentioned above, the clear and distinct understanding of capital and all its ramifications becomes a reality only when the capitalist-laborer exchange relation becomes the predominant (universal) characteristic of the mode of production.

V. Summary and Conclusion

This paper analyzed the very important notion of capital from a Marxian perspective as opposed to a neoclassical one. It was shown that when capital is viewed as a historically determined process, rather than as a thing or a collection of use-values, it tends to assume certain specific forms more often than others depending on the particular stage of economic history. For example, when dealing with simple commodity production, capital, more often than not took the form of money (bullion) in the hands of merchants and usurers. With the advent of modern industry and the widespread buying and selling (commodification) of labor-power and means of production, capital came to be associated more and more with labor-power, raw materials, and machinery, leading Marx to comment, "In the pre-capitalist stages of society commerce ruled industry. In modern society the reverse is true ... merchant's capital appears as a capital with a specific function" (Capital III, pp. 237 and 330). It was shown that in the capitalist mode of production, capital, in the form of money, labor-power, and means of production, is repeatedly being turned over by the capitalist in its various circuits in order to generate and accumulate

surplus-value (profit)—the *raison d'être* of the capitalist system. At any given point in time, then, capital may be in its money, commodity, or productive forms, and any (prolonged) interruption of these circuits over time generates economic crises in terms of the production and/or realization of surplus-value (profit). It was also indicated that the repeated circuits of capital in their customary forms leads economists (and business people) to treat what are essentially social (historical) relations of production as simply material things or technical relations, and thus to the erroneous adoption of the so-called “Trinity Formula” whereby capital earns profit, land earns rent, and labor earns wages.

In turn, the paper argued that a cogent understanding of the various circuits of capital, viz., money, commodity, and productive circuits, rests upon Marx’s incisive analysis of how the time of production and circulation affect the turnover speed of capital, and thus the production and realization of surplus value (profit). It was shown that the credit system plays a pivotal role in both the production and realization of commodities (and surplus-value), but it does so in an erratic and contradictory manner over the course of the business (industrial) cycle. It was pointed out that Marx, well-ahead of his contemporaries, makes a compelling case for the view that the credit system in its various forms lays the basis for speculation and crises because it makes it possible for production to increase without any direct relation to the absorptive capacity of the market; i.e., the “financialization” of the economy via excessive credit intermediation nurtures and sustains the illusion of a smooth and continuous reproduction process of capital (in its various circuits) up to the eve of the crisis. In other words, he lays bare the growing contradiction (tension) of the capitalist system between the production and realization of surplus-value (profit)—the hallmark of Marxian analysis.

The paper delved briefly into the economic role of time in the Marxian paradigm and how it relates specifically to capital in the form of interest-bearing capital. It argued that the postponement of social consumption by capitalists is determined by the accumulation and reproduction needs of capitalist production over the course of the industrial (business) cycle, rather than by their thriftiness or “abstinence.” The paper was brought to a close by highlighting Marx’s discussion of Adam Smith’s valuable distinction between productive and unproductive labor. Using Marx’s conception of capital, it is maintained that a clear understanding of the distinction is possible if we focus on the different social relations of these workers in the capitalist system, rather than their technical-material properties.

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