EFFECTIVE DEMAND AND THE MARKET PRICE OF PRODUCTION

A. INTRODUCTION

The great merit of Marxian value theory is that it provides a consistent and rigorous framework for understanding how capitalist enterprises command and redistribute the available labour in a given economy. The process of competition among producers has important implications for how society's labour gets distributed: how, in a purely capitalist economy, the social division of labour is decided. Through the integration of demand into a Marxian theory of prices it becomes possible to show the implications of changes in demand on how that labour-time is distributed, both among competing industries as well as inter-temporally between periods. Furthermore, the present analysis provides a value theoretic framework for analysing the distribution of social labour under conditions of excess or insufficient demand. It thus permits an analysis of the process of adjustment of prices and thus allows for the first time a systematic analysis of how the specific characteristics of industries affect the dynamic adjustment of prices in competitive conditions and the implications of those adjustments for the distribution of social labour. The task in this chapter is to lay the foundation for a dynamic theory of market processes by showing how demand can be consistently integrated in to a Marxian theory of value.

In the previous chapter it was argued that the question of how to integrate demand comes down to the question of what it means to say a commodity has value. Specifically, if a commodity produced with average expenditure of labour fails to exchange against money, is the labour expended socially necessary? The orthodox theorists, emphasizing the first of the two meanings of socially necessary, say yes: the labour expended is of average intensity and duration. The monetary theorists emphasize the second meaning of socially necessary disagree. The labour has not been expended in accordance with existing social need. In the former case demand has no role in the determination of value and in the latter case it does. The existence of the two meanings attributed to this modifier thus brings into relief the question of how best to integrate demand into Marx's theory. A satisfactory resolution to the problem thus requires a reconciliation of these two meanings.

The key methodological thesis which is necessary to provide a consistent interpretation of the role of demand concerns the process by which the meanings of key terms in Marx's analysis systematically evolve. The first task is to reconcile the dual meanings of the modifier "socially necessary" in the definition of value. This tasks requires a distinction to be made between the effects of exchange on the determination of abstract labour and the effects od demand on the determination of socially necessary labour-time. The following section provides a consistent interpretation of the meaning of socially necessary abstract labour-time in which the dual meanings of the modifiers are reconciled. The key to this interpretation is the idea that Marx's methodology entails a systematic evolution in the meaning of the key term value.

Once the apparent contradiction inherent in the meaning of value is resolved, the next task is to show how the evolution of the meaning of value systematically changes the relationship between a commodity's value - the socially necessary abstract labour-time required to reproduce the commodity - and its value-form - the quantity of socially necessary abstract labour-time the commodity represents in equivalent exchange. The relationship between these two magnitudes is the way in which Marx theorizes the distribution of labour through exchange. As such it is fundamental to a consistent interpretation of his theory of price.

The analysis of the changes in the meaning of value, combined with the analysis of the relationship between value and value-form, provide the basis for the argument concerning the integration of demand. The integration of demand into the analysis implies the introduction of a new form of value - the market price of production - which defines the socially necessary abstract labour-time under conditions of excess or insufficient demand. By interpreting the determination of the market price of production in the way suggested by Marx in Chapter 10 of Volume III of Capital, a consistent theory of the relationship between value and price emerges.

The test of this interpretation is two-fold. First it must be shown that this reading of the text reconciles the apparent contradictions in Marx's own explanation of how demand affects the determination of value. The second task is to show that this interpretation does not fall prey to the arguments against integrating demand raised by the orthodox theorists. Specifically it will be demonstrated that this interpretation maintains the connection between value and the conditions of production, it provides a strictly quantitative determination of value and price, and finally, it affirms that labour expended in production is the sole source of value.

B. THE MEANINGS OF VALUE

The failure to incorporate the second meaning of socially necessary labour results from a failure adequately to theorize how the meaning of value changes throughout the analysis in Capital. While many theorists recognize the evolution in the form of value as new contingencies are introduced into the analysis, what is not clearly elaborated is how the new contingencies affect the meaning of value itself. In other words, how do these new contingencies systematically change what it means to say a given expenditure of labour is socially necessary abstract labour-time? As a result of this oversight, the interrelationship of value and value-form remains poorly understood. It is precisely this relationship which holds the key to understanding how demand affects the determination of value and price. The present task, then, is to show how an interpretation of the way in which the value categories undergo a systematic transformation throughout the analysis, provides a way to reconcile the dual meanings of socially necessary labour and thus provides a satisfactory role for demand in a Marxian theory of price dynamics.

There are two distinct aspects to this task. The first is to argue that the introduction of new contingencies into the analysis at each stage of the argument (or level of abstraction) affects the meaning of value. While value continues to be defined as socially necessary abstract labour-time, what that definition means is transformed at each stage of the analysis with the introduction of new contingencies. By examining the meanings of the two modifiers, "socially necessary" and "abstract", at each stage of the analysis, it will be shown how these meanings systematically evolve. The apparent contradiction between the dual meanings of these modifiers are shown to result from a failure to distinguish between the different stages of the analysis and not from inconsistencies in the analysis itself.

The second aspect of the investigation will be to elucidate how the evolution in the meaning of value changes the relationship between value and value-form. Here I will adopt a non-dualist interpretation of the relationship between a commodity's value (the socially-necessary abstract labour-time required to produce the commodity) and its value-form (the quantity of socially-necessary abstract labour-time which a commodity represents in equal exchange). I will argue that the introduction of demand conditions implies a further evolution of the form of value =66rom price of production to market price of production. It is this new value form - the market price of production -which provides a value theoretic basis for an analysis of the effect of changes in demand on the distribution of value. Specifically, it is used to show how shifts in demand redistribute value across industries within a given period. Furthermore, because this value-form applies to conditions in which markets are not assume to clear, it permits a value theoretic analysis of market adjustment processes in the short run. The inconsistencies produced by the existing interpretations of the interrelationship of value and price are in this way overcome.

I will begin by outlining an argument concerning the evolution in the meaning of value and the implications of this evolution for understanding the relationship between value and value-form. I will then illustrate this argument by defining four distinct stages of the evolution of value and value-form to show how the meaning of these two categories change with introduction of further contingencies into the theory. I then provide a detailed examination of the integration of demand into the theory of prices. Here, I focus on a consistent interpretation of the market-value and show how the present reading allows for a reconciliation of the apparent contradictions concerning Marx's proposed third method for the determination of market value under conditions of excess demand.

1. Synchrony and Diachrony

In order to see the connection between the evolution of the form of value and changes in the meaning of value it is necessary to explore how the key theoretic term value takes its meaning in the text. Althusser points to two characteristics of the process of attributing meaning to the theoretic terms which are relevant to the present argument (1968, p. 67-9). The first characteristic he refers to as synchrony. The meaning of a term is synchronic if the term takes its meaning form its relationship to other theoretic terms in the analysis. It is defined only in relation to these other terms. As a result its meaning is confined to those contingencies which have been introduced into the analysis and arises from its relationship to these other terms. Meaning is not attributed a priori, nor are terms defined with reference to contingencies which as yet lie outside the analysis. In fact, from the point of view of the theory, whatever has not yet been introduced into the analysis does not yet exist. At several points in the text, Marx explicitly makes reference to such categories: they do not yet exist since the terms necessary to define them have not yet be introduced or adequately developed. For example, early in Volume I in his discussion of the value of labour-power, Marx writes: "Wages is a category that, as yet, has no existence at the present stage of the analysis" (1954, p. 51).

A second characteristic of the terms in the discourse, which is implied by their synchrony, is the idea that with the introduction of new terms into the theory, the meanings of the existing terms undergo a systematic re-evaluation. This diachronic development of the terms results from the fact that the introduction of new concepts alters the relationship among the existing concepts and thus expands the meanings of those terms. The synchrony of the concepts implies that the meanings cannot be static and unchanging as is the case in the more familiar method of model building. However, the evolution of these meanings is not random since the relationships among the existing terms is not nullified by the introduction of new terms; instead, the meanings are expanded or developed along with the systematic expansion of the analysis as new contingencies are introduced.

Wolff, Callari and Roberts introduce the concept of the diachronic development of the meaning of value in the following way:

Early in Capital, vol. 1, Marx defines the value of a commodity as "the [abstract] labor-time socially necessary for its production"...This general definition is consistently maintained across the three volumes of Capital, but its precise meaning must be developed with reference to the specific social conditions of production and exchange being considered at each stage of Marx's argument. (1984, p. 123) Indart supports this reading when he writes: "concepts -according to Marx's dialectical method - are not defined in one stroke; concepts are developed in a step-by-step manner as the analysis moves from one level of abstraction to another, closer to the concrete-in-thought" (1990, p. 728).

What is implied by such a reading of Marx's text is that apparently contradictory statements may each be valid depending upon the stage of the analysis at which they appear. The importance of this characteristic of Marx's methodology for the present analysis is this: it allows for a reconciliation between apparently contradictory meanings attributed to socially necessary labour-time. For example, the apparent contradiction between the first and third method of the determination of market value to which Itoh (1988, p. 231) refers results from the failure to distinguish between different levels of abstraction to which the different definitions apply. Prior to the introduction of demand conditions socially necessary labour refers only to the technically determined average labour requirements.

However, once deviations of demand from supply are introduced, average labour expenditure can no longer be assumed to be socially necessary since some of this labour may have been expended in excess of existing socially need. This possibility "did not exist" prior to the introduction of market conditions and thus market value refers only to average labour-time. With the introduction of market conditions the meaning of socially necessary labour-time undergoes a diachronic development: it expands to include the new contingencies made possible by the introduction of the market. Market value thus takes on a new definition and is henceforth determined with reference both to the technical conditions of production and to the relative strength of demand and supply in the industry. Marx makes this argument specifically in reference to the second meaning of socially necessary labour-time.

For instance, let us assume that proportionally too much cotton goods have been produced, although only the labour-time necessary under the prevailing conditions is incorporated in this total cloth production. But in general too much social labour has been expended in this particular line; in other words, a portion of this product is useless. It s therefore sold solely as if it had been produced in the necessary proportion. This quantitative limit to the quota of social labour-time available for the various particular spheres of production is but a more developed expression of the law of value in general, although the necessary labour-time assumes a different meaning here. Only just so much of it is required for the satisfaction of social needs. The limitation occurring here is due to the use-value. Society can use only so much of its total labour-time for this particular kind of product under prevailing condition of production. (1959, p. 636)

It is the apparent inconsistency in the two meanings of socially necessary which has prevented the consistent integration of demand conditions and relegated Marx's theory of price to a theory of long-run supply prices. In order to provide a consistent interpretation of the meaning of socially necessary labour, and of value itself, it is necessary to recognize how the meaning of value evolves with the introduction of new contingencies into the theory at each stage of the analysis.

2. Value and Value Form

The present analysis draws upon a non-dualist interpretation of the relationship between value and price. Central to the non-dualist approach is the idea that exchange is integral to the determination of both the value of a commodity and its value-form. It accepts Rubin's proposition that the process of exchange is the means by which independent concrete labour is counted as socially necessary abstract labour. By distinguishing the process of exchange, which underlies the determination of abstract labour, from the effect of demand which underlies the determination of socially necessary labour-time, it is possible consistently to maintain the idea that exchange affects the determination of value without collapsing the distinction between value and price.

There are two important tenets underlying the nondualist approach. First, there exist two value magnitudes associated with each commodity - its value and its valueform. Value refers to the socially necessary abstract labour-time required to reproduce the commodity; value-form is the quantity of socially necessary abstract labour-time which the commodity represents in equivalent exchange (Wolff, Callari and Roberts, 1984, p. 123). Roberts refers to this tenet as the double structure thesis: "...there are two numbers 'attached' to every capitalist commodity, its value and its price of production; they differ, in general, and a Marxian analysis is interested in both (the difference between then represents a transfer or redistribution of surplus value across industry boundaries)"(1995, p. 1).

The second key tenet is the idea that both the value and the value-form can be measured in units of labour and money.

Actually, after tracing the development of the value-form into the price form in Volume 1, Chapter 1, Marx regularly referred to sums of money as "values"...The value congealed in a commodity is always expressed as a money price, a sum of money because it is always related to the universal measure of value, money...therefore, both before and after the transformation of magnitudes [exchange value to price of production], inputs and outputs have the same dual dimensionality. (McGlone and Kliman, 1995, p. 35)

The transformation is not a transformation of values denominated in labour units into prices of production denominated in prices as the orthodox theorists argue; nor is it a transformation from values denominated in socially necessary labour-time into prices of production in units of abstract labour expressed in money units as Mohun presents it. Rather, it is a transformation between value expressed in both socially necessary abstract labour and money and measuring the requirements of production, into value-form (prices of production), with the same dual dimensionality measuring the quantity of the total value attributed to each commodity in equivalent exchange. Thus "...social labour and money are not two mutually exclusive measure of value but two aspects of the same measure. Value is simultaneously measured in both labour and money (Ramos-Martinez 1995, p. 3). By defining the value of money (or more properly, the monetary equivalent of labour) as the ratio of the total value expressed in money units to the total value expressed in labour units it is possible to translate between the two measures.

The third tenet is the most significant; it is the idea that the value of the commodity cannot be determined without reference to the value-form. The interdependence of value and value-form results from the necessity of evaluating the inputs into the production of commodities as products of capital. The importance of evaluating the value of commodity inputs as products of capital was first identified by Wolff, Callari and Roberts: "Since Marx's object here is a social situation in which circulation processes are effective pre-conditions for production, the relevant magnitude must be the price of production of the consumed means of production and not the abstract labour-time physically embodied in them" (1984, p. 126).

The value-form (price of production), is the quantity of socially necessary abstract labour-time the commodity represents in equal exchange. It is this magnitude which represents the value of the constant capital which enters into the production of the commodity and forms its value. By defining the value of the means of production with reference to their value form, Marx's theory of value is distinguished from the Ricardian interpretations that provides the basis for the transformation problem.

...[F]or Ricardo, the value is determined by the labour necessary to produce a commodity as use-value while for Marx, value is determined by the labour necessary to produce the commodity as capital. This implies that for Marx, value, which is the monetary form of social labour, is determined in the process of production and circulation considered as a whole and thus not exclusively determined in the process of production". (Rodriguez-Herrera, 1996, p. 78)

Seen in this light it is not appropriate to evaluate the value of the means of production entering into the value of a commodity as a use-value since they must be obtained as products of capital by exchange. It is the magnitude of socially necessary labour-time represented by the means of production in equivalent exchange (i.e. its value-form) which determines the value transferred to the commodity in production not the labor required to produce these means of production as use-values.

Value and value-form, therefore, are two distinct magnitudes, denominated either in labour or money units, which are attached to each commodity. The are interrelated since the value-form is necessary to determine the magnitude of value. The non-dualist interpretation of the relationship between the substance and form of value thus posits a role for exchange in determining the magnitude of value. The distinguishing characteristic of the non-dualist approach is the recognition that value is dependent upon the prevailing rule of exchange equivalence. Because the socially necessary abstract labour-time transferred by the means of production depends upon the value-form of that capital and not on its embodied or technically required labour, both production and exchange affect the determination of the commodity's value as well as the value-form.

These two aspects of Marx's methodology, the synchronic and diachronic development of the concepts and the non-dualist interpretation of the relationship between value and form of value provide the basis for theorizing the evolution in the form of value which allows for a consistent integration of demand. The introduction of new contingencies into the analysis changes the conditions of exchange equivalence which are relevant at each stage. These conditions are a key constitutive element in the determination of both value and value-form: they determine what it means to say labour is abstract socially necessary labour-time. The introduction of competition first within an industry and then across industries implies that the conditions of equivalent exchange must be re-evaluated. The introduction of intra-industry competition implies that the condition for equal exchange is subject to the constraint that identical commodities produced under different conditions of production must sell at the same price. As a result the form of value evolves from exchange-value to market-value. With the introduction of inter-industry competition, the rule of equivalent exchange expands to include the additional condition that different commodities produced in different industries must exchange at prices which yield to the average producer in that industry an equal rate of profit. The form of value undergoes a further metamorphosis from market-value to price of production (Marx, 1959, p. 180).

I contend that the evolution in the form of value does not end with the formation of the price of production. In Chapter 10 of Volume III, Marx introduces a further contingency into the analysis - the possibility that labour expended in production is not socially necessary due to the lack of effective demand. The deviation of demand from supply is introduced as a further contingency to be incorporated into the analysis and this new contingency requires a further evolution of the form of value. The amount of socially necessary abstract labour-time the commodity represents in equal exchange is no longer determined by that which provides the average producer in the industry with an equal rate of profit. For example, a commodity produced in an industry with excess supply represents less socially necessary abstract labour-time than is implied by the price of production. Determination of the value-form according to the average conditions of production thus no longer represents the socially necessary abstract labour-time that the commodity represents in an equivalent exchange. The determination of value by this average producer is likewise no longer sufficient to determine the socially necessary abstract labour-time required to reproduce the commodity. The determination of the value and the value-form must now include a determination of how much of the labour expended in the industry is required to satisfy the existing social need as expressed by the effective demand.

It is necessary to introduce a method to determine the quality of the labour expended in each industry which is socially necessary according to the second meaning which, for the first time, becomes relevant to the determination of the value-form. The market price of production is the form of value relevant to the analysis at the level of abstraction which incorporates demand conditions into the analysis.

Under conditions of excess supply, the market-price of production is determined according to the conditions of production of the more efficient category of producers: "the effect is the same as if each individual [producer] had expended more labour-time upon his particular product than is socially necessary" (Marx 1954, p. 109).

In equivalent exchange, this commodity now represents less labour than what is required to reproduce the entire quantity on the basis of equal rates of profit for the average producer in the industry. Each individual commodity likewise represents less value.

The condition of exchange equivalence at this stage includes the determination by the market as to whether the labour expended in production is socially necessary in the sense of having been expended in accordance with existing social need (effective demand). The replacement of the price of production by the market-price of production as the form of value thus provides a way to determine both value and value-form under condition of non-market clearing. It represents a further development of the value-form which provides a key stepping stone between the static ideal long-run price of production and the dynamic movements of market prices. It further allows for the first time, a theory of how change in demand redistribute value across industries. Finally, it provides a crucial link which allows for a theory of how changes in demand redistribute value intertemporally between periods. It is, in other words, a veritable missing link in Marx's value theory which provides the connection between the theory of long-run supply prices, the theory of changes in the monetary expression of labour and theories of crisis. Before moving towards the determination of the market price of production, however, I want to provide further support to this interpretation of the value-form by identifying the specific contingencies which are introduced into the analysis at each stage of the analysis to show how value and value-form systematically evolve throughout the analysis in Capital. 3. Evolution in Value and Value-Form

There are at least four distinct stages of Marx's analysis corresponding to four distinct forms of value - exchange-value, market value, price of production and market price of production. In order to trace the diachronic development of value and value-form, a number of questions need to be addressed. The synchrony inherent in the theory implies that the meaning of value depends upon the relationship of value to only those elements of the theory which have been introduced into the analysis. The first step, therefore, is to make clear the key theoretic assumptions which prevail at each stage of the analysis. Second, it needs to be shown what new contingencies are introduced at each successive stage and how the introduction of these new contingencies transforms the meaning of value. In other words, how does each new contingency affect what it means to say that a given expenditure of labour represents socially necessary abstract labour-time. Once this is done, it can be seen how the evolution in the meaning of value affects the interrelationship between value and value-form: how exchange at each level of abstraction effects a redistribution of value among producers. With the introduction of demand in the final stage of the argument, the redistribution of value through changes in the distribution of effective demand will be made apparent.

a. The Levels of Abstraction

The first stage of the analysis, is concerned with the analysis of those characteristics common among all productive capitals. This stage has been characterized by Rosdolski (1977, pp. 41-50) as the analysis of "capital in general". Here the analysis abstracts from the consideration of competition among capital and focusses on an analysis of the determinants of the production of value. However, there are three important elements of exchange which are maintained. The first concerns those characteristics necessary to establish the specificity of commodity production. To this end, "[o]nly such products can become commodities with regard to each other, as result from different kinds of labour, each kind being carried on independently and for the account of private individuals" (Marx, 1954, p. 49). In addition, in order to be a commodity, an article must be a use-value. "Nothing can have value, without being an object of utility. If the thing is useless, so is the labour contained in it: the labour does not count as labour, and therefore creates no value" (Marx, 1954, p. 48). These principle features of commodity production, the independent production of use-values for the purpose of exchange are fundamental to the development of the meaning of value and underlie all further elaborations of both value and value-form.

A second important assumption concerns the condition of exchange equivalence imposed. Since the value-form is determined by the amount of socially necessary abstract labour-time represented by the commodity in equivalent exchange, the rule of exchange equivalence is a central element of the analysis. At the outset, Marx assumes that all commodities exchange at their values. This condition of exchange equivalence implies that the labour-time required for the reproduction of the commodity determines the ratio at which they exchange. However, in Volume III, this rule of exchange equivalence is replaced by exchange on the basis of equal average rates of profit across industries. This change in the condition defining equivalent exchange is the means by which the diachronic development of the value-form occurs. It allows Marx "to stress from the beginning the importance of value-form, and of circulation conditions, while nevertheless getting those circulation conditions 'out of the way' of his primary focus" (Wolff, Callari and Roberts, 1984, p. 124).

The third characteristic of the analysis at this level of abstraction concerns the existence of money. Money is introduced at the beginning as the universal form of appearance of value. The assumption of production for exchange and exchange at values are integrated with a commodity money which differentiates capitalist exchange form a barter economy. The implication is that although the value-form of the commodity is quantitatively identical to its value, it is qualitatively distinct. The exchange-value of the commodity is distinct from its value. Because gold is both a representative of price denominated in currency units and a measure of value in units of labour-time, it provides the link between labour value and price which permits the development of the relationship between value and value-form.

The second stage of the analysis introduces the existence of competition for the first time. Marx distinguishes two types of competition; the first - competition among producers within an industry -results in the transformation of the form of value and the creation of the market-value (Marx, 1959, p. 180; Indart, 1990, p. 728-9). The analysis explicitly abstracts from product differentiation: producers in the industry are assumed to produce identical products (Horverak, 1988, p. 281). Each capital is subject to constant returns to scale and produces only one commodity eliminating from consideration the issues of joint production. The ratio of unpaid to paid labour-time, the rate of exploitation, is assumed to be the same for each producer (Marx, 1959, p. 175).

It is further assumed that the producers can be grouped into three categories depending upon their relative labour productivities -average, below average and above average (Marx 1968, p.204; Rosdolski, 1977, p. 91). The assumption that the commodity exchanges at a price proportionate to its value is retained. Due to the lack of product differentiation it follows that competition implies that the law of one price prevails in the industry: regardless of the actual labour-time required to produce the output for any individual capital, it must sell at its market-value. As a result the rates of profit for the three groups of producers differ: the producers with above average productivity realize a surplus profit while the less efficient producers realize a lower than average rate of profit. Output and inputs continue to be exchanged at their values and all output produced is assumed to be sold.

The introduction of competition among industries, the next level of abstraction implies two important changes to the analysis. First is the transformation of the condition defining exchange equivalence. The condition which defines an equal exchange requires that the average capital in each industry receive an equal rate of profit. The total surplus value produced is in this way reallocated on the basis of the total capital engaged in each industry and the composition of that capital. "...[C]ommodities are not exchanged simply as commodities, but as products of capitals, which claim participation in the total amount of surplus value, proportional to their magnitude, or equally if they are of equal magnitude" (Marx 1959, p. 175). Capitals of equal size, whatever their composition, receive equal aliquot shares of the total surplus value produced by the total social capital (1959, p. 174).

This assumption of exchange according to equal average rates of profit requires a number of associated assumptions concerning the mobility of capital. Any barriers preventing such mobility must be abstracted from at this stage of the analysis. Furthermore, the development of the credit system, while still not explicitly introduced, must be assumed (Lianos and Droucopoulos, 1992, p. 91).

A second key assumption concerning exchange is first made possible by the consideration of competition among industries. It concerns the possibility of a discrepancy between the demand for any one commodity and its supply. Marx introduces this contingency in his discussion of the determination of market-value after having discussed the various possible determinations of market-value under the prevailing assumption that demand and supply coincide.

While the magnitude of effective demand for the commodity has until this point in the analysis simply been assumed, it becomes 'of essential importance as soon as the product of an entire branch of production is placed on one side, and the social need for it on the other. It then becomes necessary to consider the extent, i.e., the amount of this social want" (1959, p. 185).

The introduction of this new contingency requires the reevaluation of what it means to say that a commodity represents a given amount of socially necessary abstract labour-time. Just as it is a condition for the sale of commodities at their value that they contain only the socially necessary labour-time, so it is for an entire sphere of production of capital, that only the necessary part of the total labour-time of society is used in the particular sphere, only the labour-time which is required for the satisfaction of social need (demand).

If more is used, then, even if each individual commodity only contains the necessary labour-time, the total contains more than the socially necessary labour-time; in the same way, although the individual commodity has use-value, the total sum of commodities lose some of its use-value under the conditions assumed...the rise or fall of market- value which is caused by this disproportion, results in the withdrawal of capital from this branch of production and its transfer to another... (1968, p. 521, emphasis added)

While Marx introduces this contingency in his discussion of the determination of market-value, more than once he states that the analysis applies to the determination of the price of production as well with the appropriated modifications (1959, p. 179; p. 198). Because the introduction of this contingency changes what it means to say that labour is socially necessary abstract labour-time, I argue that it implies a change in the level of abstraction and a further development of value and value-form. Marx indicates this progression in the following passage:

Our analysis has revealed how the market value (and everything said concerning it applies with the appropriate modifications to the price of production) embraces a surplus- profit for those who produce in any particular sphere of production under the most favourable conditions. With the exception of crises, and of over-production in general, this applies to all market-prices, no matter how much they may deviate from market-values or market-prices of production. (1959, p. 198)

The diachronic development of the analysis can thus be characterized by the systematic inclusion of new contingencies into the analysis introducing, step by step, the various elements of competition. The effect of the introduction of these contingencies is a systematic evolution in the meaning of value. How then does the meaning of socially necessary abstract labour-time evolve? b. An Evolution in the Meaning of Value

In Chapter 2, the failure of Marxian theorist to reconcile the dual meanings of the modifiers in the definition of value was seen to contribute to their failure to provide a consistent account of the relationship between value and price. By recognizing the diachronic nature of Marx's method - the systematic development of the meanings of the key theoretic term "value" - it is now possible to reconcile these apparent contradictions.

Recognition of the diachrony inherent in the method makes it immediately clear that the dual meanings of the modifiers are not alternative ways of defining value. Rather, they represent distinct stages in the systematic evolution of the meaning of value which apply to different levels of abstraction. To illustrate the change in the meaning of value, I begin with the meaning of abstract labour, since the determination of abstract labour is critical to the non-dualist interpretation of value which underlies this analysis.

As noted in Chapter 2 above, Marx initially defines abstract labour as homogenous labour - labour shorn of its particular characteristics. "[O]nly in so far are abstraction is made from their special qualities, only in so far as both possess the same quality of being human labour, do tailoring and weaving form the substance of the values of the same articles" (1954, p. 52). Abstract labour which produces value is thus distinguished from concrete labour which produces use-value. Marx placed great importance upon this distinction: "[T]his point is the pivot on which a clear comprehension of Political Economy turns" (1954, p. 49). This definition of abstract labour provides the basis for the orthodox theorists assumption that labour is simply assumed to be homogeneous =66rom the outset of the analysis and thus does not require the process of exchange to effect the reduction. This position is supported by Marx's remarks concerning the skilled labour. "Skilled labour counts as =2E.. multiplied simple labour" (1954, p. 51). However, way in which Marx defines abstract labour, commonly overlooked in the orthodox literature is with reference a portion, or aliquot part of the total social labour. 'Labour in the abstract, a potion of the total labour of society (1954, p. 194).' This meaning attributed to abstract labour suggests that exchange indeed plays a role in its determination. This view is supported in the text: 'It is the expression of equivalence between different sorts of commodities that alone brings into relief the specific character of value-creating labour, and this it does by actually reducing the different varieties of labour embodied in the different kinds of commodities to their common quality of human labour in the abstract" (1954, p. 57). The following passage is even more explicit: As a general rule, articles of utility become commodities only because they are products of the labour of private individuals or groups of individuals who carry on their work independently of each other. The sum total of the labour of all these private individuals forms the aggregate labour of society. Since the producers do not come into social contact with each other until they exchange their products, the specific social character of each producer's labour does not show itself except in the act of exchange. In other words, the labour of the individual asserts itself as a part of the labour of society, only by means of the relations which the act of exchange establishes directly between the products, and indirectly, through them, between the producers. (1954, p. 78)

The problem encountered by the Rubin School and the Value-form Theorists in their attempt to incorporate this second meaning of abstract labour was that it resulted in the loss of the dual dimensionality. Abstract labour became quantifiable only with reference to money. Furthermore, demand appeared to represent an additional source of value since changes in demand lead to changes in the magnitude of value of individual commodities. These problems however, result from failing to recognize the diachronic nature of the analysis and thus failing to distinguish the effects of exchange from those of demand.

Prior to the introduction of interindustry competition, it is not possible to define abstract labour as a part of the total labour of society. The process of exchange cannot effect the reduction for in order to do so, a number of different types of commodities using different types of labour is necessary. At this stage of the analysis these "do not yet exist". Instead, it is necessary to revert to the first definition: Marx must assume at the outset that all labour is homogeneous labour. The rule of exchange equivalence that commodities exchange at their values requires the assumption that the particular commodity be assumed to contain simple homogeneous labour-time. Otherwise, the requirement of equal exchange would result in commodities exchanging at varying proportions according to the type of labour employed. The initial meaning of abstract labour as simple homogeneous labour is thus necessary to define value at this stage.

The introduction of competing capitals using different types of labour in Volume III, however, changes what it means to say labour is abstract labour. The second meaning of abstract labour, labour as an aliquot part of the total social labour, now becomes salient. Abstract labour is no longer simply homogeneous labour: it is labour considered as an aliquot part of the total labour attributed to each commodity according to the prevailing rule of exchange equivalence. Whatever the particular quantity and type of concrete labour employed, the commodity, through exchange, becomes the bearer of a certain proportion of the total labour. The portion of the total is not determined on the basis on the labour expended in the production of the commodity itself, nor can it be. Because the labour gets distributed through the process of exchange in proportion to the total capital advanced in each industry, the quantity of abstract labour attributed to each commodity can only be made with reference to the totality.

Each commodity is not only the product of its own industry specific conditions (as such it is a value), it is also, as a bearer of exchange-value, simply the product of a specific aliquot share of the aggregate means of production and concrete labour employed. And as such...it represents a particular magnitude of abstract labour, the simple sum of the concrete labours it contains , not as itself but as a part of the whole. (Roberts 1995, p. 28, emphasis in original)

According to Roberts' analysis, each unit of abstract labour is comprised of a proportion of each type of concrete labour employed in the whole economy. It is thus homogeneous, in that it is not representative of any one type of labour, and it can be considered as an aliquot part of the total social labour because it is comprised of a portion of each particular type of labour expended. Exchange is the means by which the determination of abstract labour is effected but this does not imply that exchange affects the magnitude of value. Since the total concrete labour in the economy defines the magnitude of total abstract labour, exchange merely redistributes this labour to each industry on the basis of the quantity of capital advanced.

The existence of interindustry competition is thus necessary for the full meaning of abstract labour to be apprehended. Failing to appreciate the diachronic nature of Marx's method, Marxian theorists lose this rich conception of abstract labour and are unable to reconcile the dual meanings.

Reconciliation of the dual meanings of abstract labour permits a more consistent integration of exchange in the determination of value; it is the reconciliation of the dual meanings of socially necessary which provides a consistent integration of demand. The initial definition of socially necessary refers only to the conditions of production abstracting from demand conditions. Socially necessary labour-time is defined as "that required to produce an article under the normal conditions of production, and with the average skill and intensity prevalent at the time" (Marx 1954, p. 47). This definition, discussed in Chapter II above, provides the basis for the determination of market-value and prices of production in linear production theory. However, in several places in the text Marx refers to a role for demand in the determination of socially necessary labour-time. Labour of average duration and intensity may fail to be socially necessary according to this second meaning. "For the labour spent upon [use-values] counts effectively only in so far as it is spent in a form that is useful for others. Whether that labour is useful for others, and its product consequently capable of satisfying the wants of others, can be proved only by the act of exchange" (1954, p. 89). More than once in the text Marx indicates that labour expended in excess of that required to satisfy existing social need cannot be considered to be socially necessary.

...[S]uppose that every piece of linen in the market contains no more labour-time than is socially necessary. In spite of this, all these pieces taken as a whole, may have had superfluous labour-time spent upon them. If the market cannot stomach the whole quantity at the normal price..., this proves that too great a portion of the total labour of the community has been expended in the form of weaving. The effect is the same as if each individual weaver had expended more labour-time upon his particular product than is socially necessary. Here we may say, with the German proverb: caught together hung together. All the linen in the market counts but as one article of commerce, of which each piece is only an aliquot part. (1954, p. 109)

Marx goes on to argue that each individual article is but a portion of the total socially necessary labour: "the value also of each single yard is but the materialized form of a part of the social labour expended on the whole number of yards" (1954, p. 109). The inability to reconcile the two meanings of socially necessary has lead to a failure to integrate demand into the theory of value in a consistent and meaningful way. Once again, recognition of the diachrony of the analysis provides the key.

The initial meaning of socially necessary applies to the determination of value at the initial stage of the analysis prior to the introduction of the market. Marx explicitly assumes that the first two methods for the determination of market-value that he discusses apply to conditions in which demand is assumed to be equal to supply at the market value so determined (1959, p. 183). The third method for the determination of market value is only introduced after this assumption is relaxed and the deviation of demand from supply is explicitly brought into the analysis. Only then does the second meaning of socially necessary become salient. It is no longer sufficient that labour be expended with average intensity and duration, if that labour is expended in production beyond the social need for it, then that labour is wasted and the commodity represents less socially necessary abstract labour-time. At this level of abstraction, therefore, the determination of socially necessary labour-time cannot be made independently of demand conditions.

Prior to the introduction of inter-industry competition, there is no basis on which to theorize the social division of labour, Hence, the misallocation of labour-time among industries cannot be theorized: the use-value of the commodity must therefore be assumed. However, with the introduction of a number of competing industries, the possibility arises for the first time that the distribution of demand will deviate =66rom the distribution of production. With the introduction of this possibility, the expenditure of labour in one industry can no longer be determined to be socially necessary solely on the basis of its being labour of average duration and intensity. It is indeed the effect of the law of value, not with reference to individual commodities or articles, but to each total product of the particular social spheres of production made independent by the division of labour; so that not only is no more than the necessary labour-time used up for each specific commodity, but on the necessary proportional quantity of the total social labour-time is used up in the various groups. For the condition remains that the commodity represents use-value. But if the use-value of individual commodities depends on whether they satisfy a particular need then the use-value of the mass of the social product depends on whether it satisfies the quantitatively definite social need for each particular kind of product in an adequate manner, and whether the labour is therefore proportionately distributed among the different spheres in keeping with these social needs, which are quantitatively circumscribed. (Marx, 1959, p. 635) This does not imply that the determination of the labour expenditure in production is no longer relevant to the determination of value (Rosdol- ski, 1977, p. 92). The Rubin school makes this mistake and it results in the conclusion that demand creates value and the collapse of the distinction between value and price. Upon introducing the possibility of the disproportion of labour expended in an industry and the effective demand for the commodity produced, Marx introduces a method for determining the value of a commodity under conditions of excess demand and supply (1959, p. 185).

Again, the recognition of the diachrony of the analysis permits us to see that the meaning of socially necessary is not contradictory. As was the case with abstract labour, the meaning of this modifier systematically evolves with the introduction of further contingencies into the analysis. The dual meanings are an attempt to systematically theorize the nature of value in capitalist economies, economies characterized by the independent expenditure of labour time which is only subsequently integrated into a social division of labour through the market. It is therefore a mistake to attempt to theorize the meaning of either of these modifiers by suppressing one of the two meanings each contains. In the case of abstract labour, both meanings are necessary to theorize the role that exchange plays in the determination of value. Abstract labour can be theorized to be the result of exchange with losing the distinction between value and price and without implying that exchange creates value. In the case of socially necessary labour, retaining the dual meanings of the modifiers allows for a consistent integration of demand in which the effects of exchange and demand are not conflated. The role of demand in effecting a redistribution of labour-time among producers can therefore, for the first time, be theorized. This latter task requires the application of the diachronic development of the meaning of value to the relationship between value and value-form. c. The Redistribution of Value

By distinguishing a commodity's value, the socially necessary abstract labour-time required to reproduce a commodity, from its valueform, the amount of socially necessary abstract labour-time that that labour represents in equivalent exchange, it is possible to see how competition among producers both within and across industries redistributes labour-time. The integration of the diachronic development of the meaning of value with the non-dualist interpretation of the relationship between value and value-form provides the theoretic space for the analysis of demand. There are three steps to this integration. First, because the value-form depends upon conditions of equivalent exchange, and because these conditions systematically evolve throughout the analysis with the introduction of new contingencies, the value-form itself evolves. Each of the forms of value that are produced through this development - exchange value, market-value, price of production, market-price of production - depends upon a different rule of exchange equivalence and thus applies to a different level of abstraction of the analysis. Second, value-form is a constitutive element of value since the means of production and wage goods can only be obtained through exchange. It is the value-form of these commodities which determines the socially necessary abstract labour-time which re-enters production as constant and variable capital and thus forms a part of the value of the commodity in the following period. Third, the changing relationship between value and value-form at each level of abstraction reveals the redistribution of value - socially necessary abstract labour-time - that is effected by exchange. Because both value and valueform are determined only as a result of exchange, changes in the condition defining equivalent exchange changes the relationship between value and value-form. The quantitative difference between the two represents the redistribution of labour due to competition at a given level of abstraction of the analysis. The demonstration of the redistribution of socially necessary abstract labour is a principle function of Marx's theory of price. In order to specify the evolution of this relationship, the conditions for exchange equivalence at each stage of the analysis must be identified. It will then be possible to determine the value and value-form at each stage and to demonstrate that the difference between these two magnitudes reveals the redistribution of value among producers.

i. Exchange Value The initial condition for exchange equivalence is that commodity's exchange according to their value - the socially necessary abstract labour-time required to produce them. At this stage socially necessary labour-time is defined by the average expenditure of labour and abstract labour is labour that is assumed to be homogenous undifferentiated labour. The value-form of the commodity - the socially necessary abstract labour-time the commodity represents in equivalent exchange - at this level of abstraction is "exchange-value". The condition of exchange equivalence implies that the value-form is quantitatively identical to its value. The determination of the value of the constant and variable capital can thus be made with reference to either their value or their value-form. However, because the exchange-value of the commodity can only be expressed through exchange, the outward or extrinsic expression of the value-form can only be made in terms of money units. This why Marx introduces money as the general equivalent at the outset of the analysis. The exchange-value is represented as the quantity of money for which the commodity exchanges according to the prevailing rule of exchange equivalence. This quantity of money represents the price-form, value-form expressed in units of currency or gold. The fact that exchange-value is visible only as a quantity of money does not, however, preclude the determination of the quantity of abstract socially necessary labour-time that that money represents. Indeed, this is precisely the function of money as a universal equivalent and in its role as a measure of value. Both money and labour units are therefore valid expressions of the magnitude value and value-form.

Finally, because of the quantitative equivalence between value and value-form, there is no distribution of value as a result of exchange at this initial level of abstraction.

ii. Market-value With the introduction of competing capitals the condition of exchange equivalence is transformed. While commodities continue to exchange according to the socially necessary abstract labour-time required to produce them, the conditions of production of individual producers are distinguished from the average conditions facing producers in the industry. Once this distinction is made, the condition of equivalent exchange must be modified. Commodities no longer exchange on the basis of the labour required to produce them as individual articles, but according to the average conditions faced by producers. The imposition of the requirement that commodities produced under different conditions of production exchange at the same price thus transforms the value-form from exchange-value to market-value.

Because the rule of exchange equivalent implies that commodities continue to exchange at their values, the value and the value-form continue to have the same magnitude. There is thus no redistribution of value into or out of the industry. The development of the valueform, however, does permit a distinction to be made between the individual value of commodities produced by a given technique of production and the market-value. The exchange condition imposed by competition, i.e., the constraint that the output of the individual capitals be exchanged at the same price, effects the redistribution of the labour expended in the industry away from the less efficient and to the benefit of the more efficient producers. The condition that supply in the industry equals the effective demand at the market-value ensures that each labour hour expended contributes to total value produced in the industry. How this value is distributed depends upon the organic compositions of capital and the output per unit of capital advanced. The different individual values of the various producers thus imply an surplus profit for producers in category of above average productivity and a below average rate of profit for those in the category of below average productivity. A change in the conditions of production of any one producers will affect the total value produced and the individual rates of profit of each of the producers. The process of exchange therefore, can be seen, even at this relatively abstract stage of the analysis, to effect a redistribution of the total social labour, although the social totality is thus far defined only with reference to the industry (Roberts 1995, p. 19).

iii. Prices of Production At the third level of abstraction the condition of equal exchange of value incorporates two requirements. In addition to the intra-industry constraint that each commodity must be sold at a single price, an inter-industry constraint is added: no industry can realize a rate of profit which is greater than average. This condition of exchange equivalence is not a simply a statement of a longrun tendency for market prices; the condition of exchange equivalence defines what it means to say that two commodities represent equal quantities of value in exchange. It is a condition, in other words which serves to define the value-form "price of production" at a level of abstraction which incorporated inter-industry competition. The price of production is the amount of socially necessary abstract labour attributed to the commodity in exchange when exchange takes place at prices which provides an equal average rate of profit to each industry. As with any value-form the price of production can be measured in either labour units or money. The surplus value attributable to each commodity is an "aliquot share" of the total surplus labour which is distributed across industries on the basis of the total capital advanced. This share of surplus labour is distributed to each industry is allocated to the various producers within the industry according to their relative productivities due to the constraint of exchange at one price. As before the determination of the value-form represents a redistribution of the total social labour through exchange; this redistribution is due to the tendency for profit rates to be equalized through competition. The social totality is now defined to include all productive capital.

The total value in the period is defined by the total expenditure of concrete labour. At this level of abstraction, however, the value of the individual commodities produced in the period cannot be determined on the basis of the production processes considered independently. The determination of abstract labour and therefore the value of each commodity can only be effected through the exchange process. The determination of the quantity of abstract labour-time represented by a given expenditure of concrete labour in a particular industry cannot be undertaken apart from the actual exchange of the commodities themselves. The quantity of abstract socially necessary labour-time represented by the means of production and the surplus value created in each industry is determined on the basis of exchange. The determination of the labour substance represented by the means of production and the wage goods, can no longer be made by the labour represented by their market values since the producer is required to advance an equivalent in money of the prices of production of these inputs. The labour-time represented by these elements in production is therefore that proportion of the total social labour of the period represented by the prices of production of these inputs. The value is comprised by the prices of production of the wage goods and constant capital plus the surplus (abstract socially necessary) labour-time expended in each industry per unit of output.

The relationship between the value and value-form at this level of abstraction thus reveals how value is redistributed both within and across industries due to the constraints imposed by capitalist competition. Concrete labour-time contributes to the total value in the period due to the assumption that demand and supply are equalized within each industry at the price of production. This concrete new labour-time coupled with the abstract labour-time reentering production via the means of production comprises the total private labour-time for the period. The process of exchange establishes how that private labour is to be counted as socially necessary abstract labour-time. On the basis of exchange both the value and the value-form are determined. The difference between the two shows how that labour-time is redistributed across industries due to the tendency for profit rate equalization. Industries with low organic compositions of capital are forced to sell their output at prices of production which are below their value. The labour expended in these industries is captured by industries with high organic compositions of capital as they are able to sell their output at prices of production which exceed the labour they require to reproduce it. "Again, exchange of commodities effects a redistributive transfer of surplus value, this time on an inter-industry basis, from relatively more labour-intensive sectors...to relatively less labour-intensive sectors..."(Roberts, 1995, p. 19). The equalization of profits across industries does not eliminate the differences among producers within each industry and therefore the redistribution of labour-time within each industry remains. The amount of the surplus labour-time available for redistribution now depends on the total capital advanced by the industry relative to the other industries. It is distributed to the various producers in the industry according to their compositions of capital given the constraint that each commodity exchanges at a single price. The distribution of value within the industry at this level of abstraction must therefore be analyzed with reference to the individual prices of production within the industry. As before, exchange does not affect the magnitude of value; it effects the allocation of value to the different commodities through the determination of the form of value.

iv. Market Price of Production With the introduction of demand into the analysis, the condition for equivalent exchange must again be re-evaluated. Equal exchange defined according to prices of production no longer constitutes equal amounts of socially necessary abstract labour-time. The labour-time represented in the prices of production of the commodity can no longer be assumed to be socially necessary in the sense of having been expended in accordance with existing social need. Demand conditions must therefore be incorporated in the determination of what constitutes an equivalent exchange of value.

The market price of production is the form of value which defines the socially necessary abstract labour-time that the commodity represents in equivalent exchange at the level of abstraction which incorporates demand. In industries with excess supply, the market price of production is determined with reference to the less efficient techniques of production and is correspondingly lower than the price of production. In industries with excess demand, the market price of production is determined with reference to the more efficient techniques of production and is correspondingly higher. Exchange of commodities according to their market prices of production thus constitutes equivalent exchange of socially necessary abstract labour-time where the second meaning of socially necessary is incorporated in the analysis. The conditions of production limit the extent to which the market price of production can diverge from the price of production. The labour-time expressed by the market price of production can never exceed the labour-time represented by the less efficient techniques of production nor fall below that represented by the more efficient producers. Should demand exceed or fall short of supply when the price of the commodity is such that the less or more efficient producers receive an average, or general rate of profit, then the market price diverges from the market price of production. The form of value is thus dependent on conditions of demand, but limited by the conditions of production.

Value at this stage must similarly take into account the possibility of excess or insufficient demand. The labour advanced in each period is therefore determined not by the socially necessary abstract labour-time expressed in the prices of production of the constant and variable capital, but in their market prices of production. This is the socially necessary abstract labour-time represented by the constant and variable capital in the period. To this magnitude of labour-time, the surplus labour expended in the period is added to find the value available for redistribution through the process of exchange.

The relationship between value and value-form at this stage thus shows the redistribution of value as a result of competition across industries taking into account variations in the relationship of demand and supply. It shows how value is redistributed due to both the tendency for profit rate equalization and the inevitable discrepancies between the labour expended in each industry and that which turns out to be socially necessary. The value is determined by the socially necessary abstract labour-time expended and advanced in production. However, since this magnitude depends upon exchange to determine the magnitude of abstract labour and upon demand conditions to determine the magnitude of socially necessary labour-time it can only be known once the products are exchanged for money. While retaining a strictly quantitative determination, the value of any individual commodity is thus relative in the sense of existing only in relation to all other expenditures of labour-time. Value defines the quantity of socially necessary abstract labour-time expended in each industry but this can only be determined with reference to the social totality of labour expended and the effective demand for each commodity. Because the commodities do not exchange at these values, a second determination is necessary. The value-form is the determination of how the socially necessary labour-time expended in each industry is redistributed according to the dictates of competition: the law of one price, the tendency for profit rate equalization across industries and the given distribution of effective demand for each commodity. Exchange attributes to each industry a proportion of the total social labour according to the total capital advanced in the industry given the distribution of demand. At this level of abstraction the average capitals will no longer receive equal rates of profit. However, the "aliquot share" of the total social labour attributed to each industry can be determined on the basis of the total demand for each commodity. The share of the total social labour attributable to each industry is, however, limited by the extreme conditions of production. Both demand and supply conditions are thus necessary to determine the value-form and the value represented by each commodity.

At each stage of the analysis the relationship between value and form of value reveals a redistribution of socially necessary abstract labour-time through the process of competition. The theory of value thus permits an investigation of how capitalist competition determines who gets credit for what labour. The next task is to show how the integration of demand affects the determination of value and value-form. In the following section I provide an examination of Marx's method for the determination of market-value under conditions of excess or insufficient demand. By incorporating the interpretation of the meaning of value developed thus far, it is possible to resolve the inconsistencies encountered by previous attempts to integrate demand and see for the first time how changes in demand effect a redistribution of value.

C. DEMAND AND THE DETERMINATION OF MARKET-VALUE

In Chapter 2, I demonstrated how both the orthodox and monetary interpretations of the determination of market-value in Chapter 10 of Volume III of Capital failed to incorporate demand consistently into the determination of market-value. In the orthodox approach, demand affects value indirectly by changing the relationship between market-price and market-value. As a result, the importance of the second meaning of socially necessary labour-time is overlooked. In the monetary approach, demand directly determines the value of the commodity: a commodity's value is fully determined by conditions of demand. Here, the second meaning of socially necessary is incorporated at the expense of the first: the determination of value according to the conditions of production is lost.

One consequence of the failure to reconcile the dual meanings of this modifier, is a failure to make sense of Marx's own discussion of the determination of market-value in Chapter 10 of Volume III of Capital. While appeal to textual evidence can not be definitive, support for the present reading can be provided by showing how inconsistencies encountered by the orthodox and monetary interpretations are eliminated by recognizing a role for demand in the determination of value.

The key to a consistent integration of demand lies in recognizing the synchronic and diachronic nature of the meaning of value. Market-value is first defined according to a rule of exchange equivalence which includes the condition of market clearing such that demand and supply are assumed to be equal. The rule of exchange equivalence is then expanded to include on evaluation of whether labour expended in an industry is expended in accordance with existing social need. The question of the determination of market-value in conditions of excess or insufficient demand is then theorized. Only after addressing this question does Marx go on to analyze the relationship between market-value and market-price. The diachrony of the analysis implies that the determination of the market-value under conditions of excess or deficient demand must be retained: the meaning of market-value has evolved and this new meaning must be incorporated into the interpretation of the subsequent arguments concerning market-value. Failure to do so has lead to an interpretation of the determination of market-value which does not consistently incorporate demand and thus fails to theorize consistently the relationship between market-value and market-price.

Marx begins the analysis of the determination of market-value, by identifying three categories of producers according to the labour requirements for the production of the commodity - those whose production conditions allow the individual value of their output to be lower that the average, those whose individual value is above average and those whose individual value is equal to the average for the industry (Rosdolski, 1988, p. 91). He then identifies two different patterns of distribution of total output in the industry according to the relative size of the contribution of each group of producers to the total quantity of the usevalues produced in the period. The first pattern of distribution is symmetric: the individual value of the producers in the middle category group is equal to the industry average and the contribution by the two extremes is equally divided above and below the average. In the second the pattern of distribution is asymmetric: one of the extreme categories predominates such that the individual value of the commodities produced by the category of average producers is not equal to the average value (Marx, 1959 p. 182-3). With this starting point, Marx then uses these two possible distributions of output to consider the various possibilities for the determination of the market-value of the commodity.

Three distinct demand conditions are introduced. In the first, demand is equal to supply at the average value for the industry as a whole. In the second, demand exceeds or falls short of supply at the average value but is equal to supply at a value which lies within the range determined by the least and most efficient producers. In the third, demand exceeds or falls short of supply at a value determined by one of the two extreme categories. The question the Marx addresses is this: how is the market-value determined in each of these three cases?

The first case, in which demand and supply coincide at the average value is the one most widely recognized in the literature. Here the market-value equals the average value for the industry as a whole. In this case, demand is assumed to be just sufficient to absorb the existing supply of the commodity at a market-value determined by the average. The market-value will equal the individual value of the median group in the case of symmetrically distributed techniques of production - i.e., if the weight of the two extremes is equally divided above and below the median group. However, in the case of an asymmetric distribution of producers, it can never equal the individual value of one of the extreme groups of producers (1959, p. 183-4). The market-value thus lies within the range determined by the individual value of two extreme categories and does not coincide with the individual value of any of the three.

Determination of the market-value according to this first method introduced by Marx, provides the basis for linear production theory in which the average labour requirement determine the commodity's value. The first meaning of socially necessary labour-time is used: production according to the "normal conditions of production, and with the average degree of skill and intensity prevalent at the time" (1954, p. 47).

The examination of the second case, however, reveals that, "the determination of market-value appears in this way if we look exclusively at the mass of commodities thrown on to the market, ignoring the possibility of an imbalance between supply and demand" (Rosdolski, 1977, p. 91). Here Marx ask how is the market-value determined if demand exceeds or falls short of supply at the average value? To illustrate how demand affects the determination of market-value in this case he takes the example of an asymmetric distribution of output - an industry in which the less efficient producers predominate. In this case, when demand and supply coincide, the market-value lies above the individual value of the median group. It is not equal to the individual value of any of the three groups of producers due to the asymmetric constellation of producers in the industry. However, Marx argues that when demand deviates from supply, the market-value can equal the individual value of one of the two extreme groups of producers. What is most revealing about this example is the fact that it is the relative strength of the shift in demand that determines whether the market-value will equal the individual value of one of the extremes. In order for the market-value to equal the individual value of the less efficient group of producers (the predominant group), the demand for the commodity at the average value need only slightly exceed supply. However, in order for the market-value to equal to the individual value of the most efficient producers, supply must significantly exceed demand. If demand is only slightly greater than supply, the individual value of the unfavorably produced commodities regulates the market-price... Should demand be weaker than supply, the favorably situated part, whatever its size, makes room for itself forcibly by paring its price down to its individual value. The market-value cannot ever coincide with this individual value of the commodities produced under the most favourable conditions, except when supply far exceeds demand. (1959, p. 184-5)

This passage thus reveals what the orthodox interpretation fails to see: the relative strength of demand affects the determination of the market-value directly by affecting the way that the labour expended on the production of the commodity is counted. Reference to the market-value does not imply determination by the industry average except in the special case in which demand and supply coincide at the average value. However, in the general case it cannot be assumed that markets clear and as a result profit rates across industries will differ. Marx's analysis in this chapter provides a way to analyze how the market-value is determined when the possibility of excess or insufficient demand is introduced and profit rate differ across industries. In this case, the market-value moves within the range determined by the conditions of production according to the strength of effective demand for the commodity in question, "provided the demand is large enough to absorb the mass of commodities at values so fixed (Marx, 1954, p. 185).

At this point in the text Marx considers the third method of determination of market-value - how market-value is determined when demand exceeds or falls short of supply when the market-value is equal to one of the two extreme techniques. In order to ask this question, it is necessary to move to the next level of the analysis, the level at which the relationship among competing industries is brought into the analysis. It can only then be asked whether the labour expended in the production of a given commodity is in proportion to the total demand for the commodity or whether relatively too much or too little of society's labour is devoted to the production of a given commodity (Horverak, 1988, p. 281). The introduction of competing industries thus requires a reconsideration of the initial assumption that the commodity is a use-value. The use-value of the commodity is no longer simply assumed, it must be established through competition in the market.

... [T]o say that a commodity has a use-value is merely to say that it satisfies some social want. So long as we dealt with individual commodities only, we could assume that there was a need for a particular commodity - its quantity already implied by its price without inquiring further into the quantity required to satisfy this want. This quantity is, however, of essential importance, as soon as the product of an entire branch of production is placed on one side, and the social need for it on the other. It then becomes necessary to consider the extent, i.e., the amount of this social want. (1959, p. 185)

Until this point in the text, the effective demand for the commodity has been assumed to be sufficient to absorb the supply at the market-value "no matter which of the three aforementioned cases regulates this market-value. This mass of commodities does not merely satisfy a need, but satisfies it to its full social extent" (Marx, 1959, p. 185). As long as the market-value lies within the range defined by the techniques of production, the labour expended on the commodity satisfies the full social extend of the need for it. However, with the introduction of the existence of competing industries, the question of the distribution of demand arises and the possibility of a divergence between demand and supply must be taken into account. The existence of excess or insufficient demand creates a deviation of market-price from market-value. However, Marx makes explicit that there are two distinct deviations which occur - a deviation of the market-value from the average labour requirements and a deviation of the market-price from the market-value. Should [the quantity produced] be smaller or greater, however, than the demand for them, there will be deviations of the market-price from the market- value. And the first deviation is that if the supply is too small, that market-value is always regulated by the commodities produced under the least favorable circumstances and, if the supply is too large, always by the commodities produced under the most favourable conditions; that therefore it is one of the extremes which determines the market-value, in spite of the fact that in accordance with the mere proportion of the commodity masses produced under different conditions, a different result should obtain. If the difference between demand and the available quantity of the product is more considerable, the market-price will likewise be considerably above or below the market-value. (1959, p. 185-6, emphasis added)

Market-value is thus not a fixed magnitude determined solely with reference to the conditions of production independent of exchange as linear production theory assumes. Nor is it simply equal to the market-price as in the monetary approach. Instead, the market-value varies with the market-price according to the strength of effective demand within the limits imposed by the conditions of production. Outside these limits there is a deviation of market-value from market-price. The conditions of production in the industry thus impose a strict limit to the range in which the market-value can move. "For according to Marx's conception, market-value can only move within the limits set by the condition of production (and consequently the individual value) of one of the three categories of producers" (Rosdolski, 1977, p. 92).

Neither the orthodox nor the monetary approaches incorporate this conception of the determination of market-value and its relationship to market-price. Orthodox interpretations of the relationship between market-value and market-price overlook changes in the market-value that result from changes in demand. This oversight is unproblematic as long as only those cases in which demand and supply coincide are being considered. However, the impact of changes in demand on the determination of market-value becomes crucial for questions of involving dynamic price adjustments. Failure to incorporate demand leads to the interpretation of Marx's theory of prices as a long-run theory in which demand plays a secondary role. In order to analyze the dynamic adjustment of prices over time it is necessary to abandon the value categories and to make the argument with reference to market-prices. As a result, orthodox price theory is unable to use value categories to analyze how changes in demand affect the distribution of value. A value theoretic analysis of how demand redistributes labour-time within and across periods is lost.

Monetary interpretations on the other hand, fail to recognize the deviations between market-value and market-price which occur whenever demand exceeds or falls short of supply at a market-value determined by one of the two extremes. Their identification of market-value with market-price leads down one of two blind alleys. In the case of the Rubin School and the Value-form theorists, the conditions of production are abandoned as a basis of determining the value of commodities once demand is introduced. The project of theorizing the quantitative determination of market-prices using value categories is rejected. In the case of the New Interpretation, the value of money is misspecified and the theory fails to translate consistently between money magnitudes and quantities of socially necessary abstract labour-time at the level of the individual commodities.

The present interpretation allows for a quantitative analysis of value in which demand affects the determination of value without collapsing the distinction between market-value and market-price. It does this by recognizing the diachronic development of the meaning of socially necessary labour-time. Prior to the introduction of demand, market-value is calculated as the ratio of total value to total output. Socially necessary labour-time is defined as the average quantity of labour-time expended in production. However, with the introduction of demand, the meaning of socially necessary labour-time expands. In the case of excess supply, not all of the labour expended in production can be considered socially necessary in the sense of having been expended in accordance with the existing social need as expressed by effective demand. Accordingly, through the process of exchange, this quantity of labour is represented by a value-form (market-value) which represents less socially necessary abstract labour-time. The market-value in this case is determined by the ratio of total revenue realized by the producers in the industry to the total number of units sold. The market-value is thus below that determined by the technical average which counts all labour expended as socially necessary.

There is a limit, however, imposed by the conditions of production of the most efficient producers below which the market-value cannot fall. If excess supply should persist when the market-value is equal to the individual value of the group producers with above average efficiency, then there will be a deviation of the market-price below the market-value. The conditions of production do therefore still play a role in determining value at this stage. Both production conditions and demand conditions are necessary to determine market-value once the restrictive condition that demand equals supply in all industries is removed.

This interpretation of the role of demand is recognized by a number of authors but has largely been dismissed because of its apparent contradiction with other aspects of Marx's value theory. It is now possible to return to the orthodox objections to incorporating demand into the determination of value to show why these objections do not apply to the present interpretation. In Chapter 2, above, I outlined Rubin's arguments concerning why demand can have no direct role in the determination of value. First, the normal equilibrium state of affairs is confused with the breakdown of equilibrium so that the concept of socially necessary labour-time is undermined. Second, price and value are conflated since the deviation of market-price from market-value is ignored. Finally, the connection between socially necessary labour and the productive power of labour is broken so that changes in the latter occur without changes in the former. Underlying these objections are two overriding concerns: that the determination of value remains quantifiable and that nothing other than the expenditure of labour-time in production contributes to value. I argue that the present interpretation of the role of demand does not undermine a quantitative determination of value nor does it imply that demand is a source of value.

Theorists within the monetary approach to the determination of value conflate market-value and market-price. If value is identified with price then the magnitude of value depends upon all those factors which affect the effective demand for the commodity and the conditions of production become entirely redundant to the determination of value. In the present analysis however, market-value and market-price are distinct categories. As a result, the deficiencies of the monetary approach are avoided.

Production conditions are essential to the determination of value and changes in the conditions of production affect the determination of value as in the orthodox approach. the determination of excess or insufficient demand cannot be made without first identifying the average labour-time required to produce the commodity. Demand is always determined to be in excess or insufficient relative to the average social labour expended in the production of the commodity. The limit to the effect of demand in the determination of market-value is also set by the conditions of production in each industry. The range within which the market-value can move in each industry is determined by the more or less efficient producers. Shifts in demand which exceed the limits imposed by the conditions of production produce deviations between value and price. The magnitude of the market-value thus continues to depend upon the production conditions of all producers in each industry and it changes, as in the orthodox interpretation, with any change in those production conditions. All of Marx's analysis concerning the change in market-value which result form changes in the conditions of production - the length and intensity of work, the ratio of constant to variable capital, turnover time - continue to be relevant to the determination of value.

The second objection, however, becomes immediately relevant - how is it that demand can affect the magnitude of market-value but not create or destroy value? How, in other words, can the idea that labour is the sole source of value be reconciled with the idea that demand affects the magnitude of value? The answer is immediately obvious once the analysis is placed in the context of many competing industries. While changes in demand affect the determination of the market-value of an individual commodity, they need not affect the overall magnitude of value of all commodities. If demand is analyzed at the level of abstraction of a single industry, then the fact that the overall magnitude of value is unchanged remains obscured. The question, in the case of excess supply, of where the excess labour goes and in the case of excess demand where the extra labour comes from remains unanswered. However, when we move to the level of abstraction of inter-industry competition it can be seen that demand merely redistributes the value created in the period. The total expenditure of new labour in the period as well as the socially necessary abstract labour-time transferred via the means of production create a limit to the quantity of value to be distributed. Demand cannot change this magnitude: it cannot be a source of value as Marx repeatedly stresses. The failure integrate demand adequately has resulted from a failure adequately to distinguish between the different stages of the analysis and to apply the conclusions concerning the affect of demand on the determination of value to the appropriate level of the analysis.

In order to show how changes in demand redistribute value without affecting the magnitude of value in the aggregate, two types of changes in demand need to be distinguished. A shift in demand shall refer to the redistribution of demand within a period which leaves the aggregate level of demand in that period equal to the aggregate supply. A change in demand shall refer to the case in which demand exceeds or falls short of supply in the aggregate. Shifts in demand themselves can be categorized in two ways. A weak shift in demand is one in which the market-value moves within the range determined by the least and most efficient groups of producers in the industry and no price value deviation occurs. A strong shift in demand results in the determination of market-value by one of the extreme producers and a deviation of market-price from market-value.

With these distinctions in mind it can be seen that in the case of weak shifts in demand, the market-values of individual commodities are affected by changes in demand without affecting the total value circulating in the period. A increase in demand in one industry must be equally offset by a decrease in other industries such that the overall magnitude of value remains constant. The total demand provides a limit such that all labour expended in the period is socially necessary. This result holds regardless of the differences in productivity among producers within each industry because shifts in demand affect the market-value by the same amount in each industry regardless of the differences in conditions of production. The conditions of production will determine the magnitude of the change in market-value within the limits of the extreme producers in each industry. This change may be larger in some industries and smaller in others depending upon the ratio of total value to output in each industry. In the aggregate however, as long as no industry is experiencing a strong shift in demand, there will be no deviation of market-price from market-value. The total value in the economy will in this case have been redistributed among the industries leaving the overall level of value unchanged.

In the case of strong shifts in demand there will be individual price-value deviations for some commodities in the system. These price value deviations need not necessarily cancel one another: for example a number of weak shifts in demand in industries with excess demand may be offset by a single strong shift in demand in an industry experiencing excess supply such that only one price-value deviation occurs. The increase in value in the industries with excess demand is not, in this case, offset by the decrease in value in the industry experiencing excess supply since the decrease in value in the latter case is limited to the individual value of the most efficient conditions of production and not to the market-price at which the output sells. In this case the sum of market-value will exceed the sum of market-prices. The socially necessary abstract labour-time attributed to the commodities will be greater than the total labour expended in the period. Demand appears in this case to contribute to the magnitude of value.

The puzzle is solved, however, when one takes into account the affect of the price value deviations on the monetary expression of labour. The monetary expression of labour is defined as the ratio between the total market-prices and the total market-value produced in the period (Ramos, 1995). Since total market-prices are now less than the total market-values, the price value deviations which occur due to changes in demand will have the effect of reducing the monetary expression of labour. Each unit of currency will therefore represent less value than before. Multiplying the market-values of all commodities by the monetary expression of labour will therefore result in a reduction of the quantity of socially necessary abstract labour-time represented by each commodity. In this way the total value in the period remains limited to the total labour expended in the period.

A simple example may serve to illustrate this point. Suppose there exist 3 identical industries, each with 3 conditions of production distributed symmetrically. Each industry produces 10 units using 10 hours of labour so that the market-value of all 3 commodities is 1 hour. If 30 dollars are used to circulate these 30 use-values then the monetary expression of labour is 1$/hour. Suppose the least efficient technique in each industry uses 1.2 hours and the most efficient uses .8 hours. The market-value in each industry cannot therefore exceed $1.20 nor fall below $0.80.

If the first two industries experience weak shifts in demand such that the market-value and market-price rises together to $1.20 and the third industry suffers a corresponding strong shift in demand such that the market-price falls to $0.60 below the market-value of $0.80. Total demand at $30 is still equal to total supply, but the sum of market-value at $32 exceeds the sum of prices by $2. It appears that market-value has risen due to the shift in demand. However, the shift in demand causes a change in the monetary expression of labour which must be used to determine the socially necessary abstract labour-time represented by each commodity. The monetary expression of labour falls to $30/32 or 0.9375 $/hour. The total socially necessary labour-time in each industry is determined by the market-value multiplied by the monetary expression of labour. In the first two industries it is therefore $12*0.9375=3D 11.25 hours and in the third $8*0.9375=3D 7.5 hours. The total socially necessary abstract labour remains unchanged at 30 hours once the change in the monetary expression of labour is taken into account.

The presence of strong shifts in demand does not therefore imply that shifts in demand affect the overall magnitude of value. The effect of the change in demand on the monetary expression of labour is the key to understanding how shifts in demand redistribute labour-time without altering the magnitude of value.

The orthodox objections to the idea that demand directly affects the determination of a commodity's value result from a failure to interpret consistently Marx's comments on the determination of market-value. Demand can be integrated into the determination of the value of individual commodities in a way which does not sever value from determination by the conditions of production; maintains the quantitative nature of the analysis; and which preserves the idea that labour is the sole source of value.

D. CONCLUSION

Recognition of the synchronic and diachronic character of Marx's methodology allows, for the first time, an integration of the dual meanings of socially necessary labour and a role for demand in the determination of value. This interpretation resolves the apparent contradictions in the statements Marx makes concerning the meaning of socially necessary abstract labour-time. As well, it eliminates the apparent contradictions in Marx's discussion of the integration of demand in the determination of market-value in Chapter 10, Volume III of Capital. Finally, it overcomes the traditional objections to the incorporation of demand by overcoming two principle difficulties. First, the quantitative determination of value based upon the conditions of production of commodities is retained. Second, the expenditure of labour in production remains the sole source of value and surplus-value.

While Marx introduces the integration of demand at the level of abstraction of market-value, the effect of demand can only be fully analyzed at the next stage of the analysis with the introduction of inter-industry competition. A complete integration of demand thus requires the application of the arguments presented in this chapter to the determination of the market-price of production. Only at this level can the analysis of the way in which demand effects a redistribution of labour-time among industries be analyzed. Furthermore, this new value-form can be shown to provide the basis for a theory of the price adjustment process which overcomes the problems encountered by the orthodox approach and provides a challenge to competing theories to explain how prices adjust out of equilibrium.

BIBLIOGRAPHY

Aglietta, Michel. A Theory of Capitalist Regulation: The U.S. Experience. London: New Left Books, 1976.

Althusser, L., Balibar, E. Reading Capital. London: New Left Books, 1968.

Bellofiore, Riccardo. "A Monetary Labor Theory of Value." Review of Radical Political Economics, 21:1&2, 1989.

Carchedi, Guglielmo. Frontiers of Political Economy. London: Verso, 1990.

Carchedi, Guglielmo. "Non-equilibrium Market-prices," in Marx and Non-equilibrium Economics. Edward Elgar, 1996.

DeVroey, Michel. "Value Production and Exchange," in The Value Controversy. London: Verso, 1981.

Dumenil, G. "Beyond the Transformation Riddle: A Labor Theory of Value." Science and Society. 47:4, pp. 427 50. 1983-4.

Eldred, Michael, and Hanlon, Marnie. "Rconstructing Value Form Analysis", Capital and Class. #13, pp. 26-40. 1981.

Foley, Duncan. "The Value of Money, the Value of Labor Power and the Marxian Transformation Problem," Review of Radical Political Economics. 14:2, 1982.

Freeman, A. and Carchedi, G. Marx and Non-equilibrium Economics. Edward Elgar, 1996.

Gerstein, Ira. "Production, Circulation and Value." The Value Dimension: Marx versus Ricardo and Sraffa. Ben Fine ed. London: Routledge and Kegan Paul. pp. 45-93.1986.

Gleicher, David. "A Historical Approach to the Question of Abstract Labour." Capital and Class. #21, pp. 97-122.1983.

Guissani, Paolo. "Demand, Supply and Market-prices," in Marx and Non-equilibrium Economics. Edward Elgar, 1996.

Horverak, O. "Marx's View of Competition and Price Deter mination", History of Political Economy. Duke Universi ty Press, 20:2, 1988.

Indart, Gustavo. "The Formation and Transformation of Market-value: A Note on Marx's Method." History of Political Economy 22(4), 1990. Itoh, Makato. The Basic Theory of Capitalism. Totowa, NJ: Barnes and Noble. 1988.

Lianos, Theodore P. and Droucopoulos V. "Price determina tion in Chapter X of Volume II of Marx's Capital," Re view of Radical Political Economics. 24:1, 1992.

Lipietz, Alain. "Credit Money, A Condition Permitting Infla tionary Crisis." Review of Radical Political Economy. 14:2, pp. 49-57. 1982.

Marx, Karl. Capital: A Critique of Political Economy, Volume I. Moscow: Progress Publishers, 1954.

Marx, Karl. Capital: A Critique of Political Economy, Volume III. Moscow: Progress Publishers, 1959.

Marx, Karl. Theories of Surplus-Value, Part II. Moscow: Progress Publishers, 1968.

McGlone, Ted, and Kliman, Andrew. "One System or Two? The Transformation of Values into Prices of Production Versus the Transformation Problem." Marx and Non-equi librium Economics. Freeman, A. and Carchedi, G. Chel tenham: Edward Elgar, pp. 29-48, 1996.

Moseley, Fred. "Marx's Logical Method and the 'Transforma tion Problem'." Marx's Method in Capital: A Re-exami nation. Moseley, ed. Atlantic Highlands, NJ: Humani ties Press International. pp. 152-183, 1993.

Naples, Michele. "Time, Money, Equilibrium: Methodology and the Labour Theory of the Profit Rate." Marx and Non-equilibrium Economics. Freeman, A. and Carchedi, G. Cheltenham: Edward Elgar, pp. 95-115, 1996.

Ramos-Martinez, A., and Rodriguez-Herrera, A. "The Tranfor mation of VAlues into Prices of Production: A Different Reading of Marx's Text." Marx and Non-equilibrium Economics. Freeman, A. and Carchedi, G. Cheltenham: Edward Elgar, pp. 49-76, 1996.

Ramos-Martinez, A. "The Montary Expression of Labour: Marx's Twofold Measure of Value." mimeo, 1995.

Reuten, Geert. "The Money Expression of VAlue and the Credit System: a Value-Form Theoretic Outline", Capital and Class. #35, pp. 121-41.

Roberts, Bruce. "Value, Abstract Labor, and Exchange Equiv alence." mimeo, 1995.
Roberts, Bruce. "Embodied Labor and Competitive Prices: A Physical Quantities Approach," Cambridge Journal of Economics. 1997 (forthcoming).

Rosdolski, Roman. The Making of Marx's Capital. London: Pluto Press, 1977.

Rubin, I. I. Essays on Marx's Labour Theory of Value. Montreal: Black Rose Books, 1973.

Salama, Pierre. "Value and Price of Production: A Differen tial Approach," in Ricardo, Marx,, Sraffa. Ernest Mandell and Alan Freeman eds. London: Verso, 1984.

Semmler, Willi. Competition, Monopoly, and Differential Profit Rates. New York, Columbia University Press. 1984.

Sekine, Thomas. "The Law of Market Value." Science and Society. #44, pp. 420-444. 1980.

Shaikh, Anwar. "The Poverty of Algebra," in The Value Controversy. London: Verso, 1981.

Shaikh, Anwar. "Marx's Theory of Value and the 'Transfor mation Problem'", in A Subtle Anatomy of Capitalism. Diane Elson, ed. 1977. pp. 106-139.

Wolff, R.D., Callari, A., Roberts, B. "A Marxian Alterna tive to the Traditional `Transformation Problem'." Review of Radical Political Economics, 16:2/3, 1984.