EFFECTIVE DEMAND AND THE MARKET PRICE OF PRODUCTION

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A. Introduction

Marxian theory has been held back by its failure to integrate its theory of prices with its theory of crises. In spite of orthodox Marxian attempts to theorize price dynamics, Marxian price theory remains a long-run theory of prices in which demand plays a decidedly secondary role. The orthodox interpretation thus stands in stark contrast to Marx's theories of crises in which short run changes in demand play a central role in the onset of crises. By reexamining the role of demand in the determination of value, it is possible to produce value categories which provide the basis for a theory of market adjustment processes. It then becomes possible to ask under what conditions will changes in demand lead to self-correcting changes in prices, and under what conditions will crises be provoked. Rethinking demand thus constitute an crucial step towards the integration of Marxian theories of crisis and price theory. In so doing, value theory can be restored to its central place in the critique of political economy.

The importance of this development should not be underestimated. The great merit of 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 capitals has important implications for how society's labour gets distributed. By integrating demand into a Marxian theory of prices, it becomes possible to show the implication of changes in demand on how that labour-time is distributed, both among competing industries as well as inter-temporally between periods. The analysis provides a value theoretic framework for analysing the distribution of social labour under conditions of excess or insufficient demand. 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.

Two distinct tasks present themselves. The first concerns a consistent explanation of Marx's argument concerning how demand affects the determination of value. The challenge is to show how the non-dualist interpretation of value permits a meaningful role for demand while preserving the idea that it is the expenditure of labour in production which creates value. Marx introduces demand by examining the determination of market value -an analysis which abstracts from competition among industries and focusses on how competition among producers within an industry using different techniques of production leads to the formation of a single market value. The first step is to show how demand affects the determination of market-value.

The second step is to apply this argument to the determination of prices of production in order to show how value is affected by demand under condition of inter-industry competition. I will argue that introducing demand requires us to relax the assumption of market clearing which underlies the formation of prices of production. As a result the value category undergoes a further development and value takes the form of the market price of production. It is the development of this new form of value that permits the value theoretic analysis of market adjustment processes.

Implicit in this interpretation of the role of demand ins the idea that at each level of abstraction, at each stage of the analysis, new contingencies are introduced into the theory. These new contingencies require a re-evaluation of the meanings of the key theoretic term – value. The result of this re-evaluation is a change in the form that value takes at each stage of the analysis. I contend that an appreciation of the evolution of the form of value – from value to market value to price of production to market price of production – is vital to a consistent interpretation of Marxian value theory. Only in this way is it possible to provide a satisfactory integration of demand. Before addressing the two questions I have laid out, it will be helpful to examine briefly an argument concerning the evolution of the forms of value which allows for a consistent interpretation of the meaning of "abstract socially necessary labour-time" and which provides a meaningful role for demand in the determination of value.

B. Demand and the Determination of Value

In the previous section, I argued that by incorporating demand directly into the determination of value, a more consistent interpretation of the meaning of "socially necessary abstract labour-time" results. This interpretation incorporated both senses in which labour-time can be said to be "socially necessary" and thus provides a direct role for demand in the determination of value. However, Marx only hints at how value ought to be determined when market conditions are introduced into the analysis. The task of this section is therefore to show:

i) how value is determined under conditions of excess or insufficient demand;

ii) how the resulting form of value makes possible the analysis of market adjustment processes.

1. Demand and the Determination of Market Value

a. A Non-dualist Approach

In the previous chapter I argued that the orthodox interpretation of the determination of market value in Chapter 10 of Volume I of Capital failed to incorporate demand into the determination of market value. Instead, demand affected value only indirectly by changing the relationship between market price and market value (and, later, the price of production). As a result, the importance of the second meaning of socially necessary labour was overlooked and the orthodox interpretation missed the important ways in which changes in demand redistribute value among industries and across periods. One consequence of this misrepresentation is a failure to make sense of Marx's own discussion of the determination of market value. The textual evidence can not be definitive. However, support for the present reading can be provided by showing how inconsistencies encountered by the orthodox interpretation are eliminated by recognizing a role for demand in the determination of value.

The problem presented in Chapter 10 is how to determine a commodity's value once the existence of a number of capitals operating with different techniques of production is introduced into the analysis. No inventory adjustments or product differentiation are considered (1959, p. 186). However, in contrast to neo-Classical and Sraffian theory, the analysis does not assume a single average or typical producer. The importance of this distinction has been overlooked in the literature and yet it is this characteristic of Marx's analysis which provides the basis for the theory of the market adjustment process. It is worthwhile, therefore to carefully consider how this element of the theory is developed.

Marx begins by identifying three groups 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 constellations of producers in an industry depending upon the contribution of each group of producers to the total quantity of the use-values produced in the period. In the first constellation, the individual value of the producers in the median group is equal to the industry average and the contribution by the two extremes is equally divided above and below the mean. In the second, one of the extreme groups predominates such that the individual value of the median group is not equal to the average value. With this starting point, Marx then considers the possibilities for the determination of the market value of the commodity given variations in the level of effective demand for the commodity (Marx, 1959 p. 182-3).

Three distinct demand conditions are considered. 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 extremes. The question the Marx sets out to answer is this: how is the market value determined in each of these three cases?

The first case is the one most widely recognized in the literature. Here the market value equals the average value for the industry as a whole. The market value will equal the individual value of the median group only if the weight of the two extremes is equally divided above and below the median group. However, it can never equal the individual value of one of the extreme groups of producers (1959, p. 183-4). 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 but does not play a role in the determination of the market value (Rosdolski, 1988, p. 91). This case provides the basis for the orthodox claim that demand does not have a direct role in the determination of value.

The examination of the second case, however, reveals the error of the orthodox interpretation and shows that demand does directly affect the magnitude of market value. 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 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. When demand deviates from supply, however, 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: 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 contribution of the individual producers in the industry 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. This special case is important because it allows us to analyze the distribution of abstract labor while abstracting from market dynamics. Specifically, it allows an analysis of how the equalization of the rates of profit across industries redistributes social labor within and across industries. 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 systematically across industries. What his analysis suggests is that 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. Both production conditions and market conditions are therefore necessary to determine the market value once the possibility of deviations of demand and supply is introduced into the theory. Marx thus provides a way to use value theory to analyze the process of adjustment of prices which occurs due to discrepancies between demand and supply.

This reading of the role of demand is further reinforced by the third case that Marx considers. At this point in the text Marx reintroduces the concept of use-value and asks how changes in demand affect the commodity's use-value and the use-value of the labour employed in the production of the commodity. 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 societies labour is devoted to the production of a given commodity (Horverak, 1988, p. 281). The magnitude of effective demand, or the quantity of a commodity required to satisfy some social want...

> ...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). The existence of excess or insufficient demand creates a deviation of market price from market value, but not as the orthodox interpretation suggests, from the market value as determined by the average. Instead Marx makes explicit that there are two distinct deviations which occur.

> Should their quantity 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 accor dance 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 consider able, the market-price will likewise be considerably above or below the market-value.(1959, p. 185-6)

The traditional interpretation of the relationship between market-value and market-price overlooks 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 has led 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 was 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. The value categories can only be defined by assuming a correspondence between supply and demand. A value theoretic analysis of how demand redistributes labour-time within and across periods is lost.

The passages cited above have largely been dismissed because of their apparent contradiction with other aspects of Marx's value theory. In light of the present reading of the determination of market value, it is now possible to return to the orthodox objections to incorporating demand into the determination of value to show why these objections are not valid. It is also now possible to assess earlier attempts to theorize the role of demand to show why, in spite of the great merit of these efforts, they fail to provide an adequate explanation of how demand affects the determination of value.

b. A Critique of Previous Attempts to Integrate Demand

i. The Orthodox Approach

In Chapter 2, above, Rubin's arguments concerning why demand can have no direct role in the determination of value were examined. From the perspective of the present interpretation the shortcomings of this argument now can be identified. The two central elements of the argument concern, first, the inability to quantify the value of individual commodities due to the indeterminacy introduced by market conditions {For example, Foley (1982) and Bellofiore (1989) argue for an interpretation of Marx's theory of value as a macro theory of exploitation due to problems in quantifying the value of individual commodities}; second, the claim that since changes in demand affect the magnitude of value, labour-time no longer constitutes the sole source of value (Rubin 1973, p. 209; Shaikh 1981, p. 300). These claims follow from a misspecification of the relationship between demand and 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.

Many previous attempts to integrate demand into the determination of value did so by conflating 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. This position has been advocated by a number of writers inappropriately referred to as the "Rubin School" and is maintained by some theorists working within a non-dualist framework (see, for example, Carchedi, 1996 p. 174). Rubin himself, correctly rejects this approach as it undermines the basis for a value-theoretic account of price changes by reducing the analysis to a single dimension. Since money becomes the sole measure of value, the double structure of labour and money which is necessary to establish a theory of price adjustment processes is lost. {Roberts (1997) argues for the importance of maintaining two systems of accounting in order to maintain that labour is exploited. Here a similar argument can be made for maintaining two systems of accounting. Without labour values it cannot be established why a particular price should be set at one level rather than another nor can it be shown how deviations of prices from values affect the distribuiton of value through changes in the value of money.}

In the present analysis however, production conditions are essential to the determination of value. First, 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 first meaning of the term "socially necessary" is retained and so is the requirement for determining the average conditions of production. Second, the limit to the effect of demand in the determination of market value is 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. What the orthodox interpretation overlooks is the evaluation of the portion of the total social labour devoted to each commodity as to whether it is distributed in socially necessary amounts. If too much labour has been allocated towards the production of a particular commodity, then that labour is not socially necessary and counts as less than average labour. If not enough has been allocated then that labour is counted as more than average. Counting all labour as average labour only applies to the special case in which demand is assumed to be equal to the existing supply. In the general case, demand must be considered and therefore the quantity of socially necessary labour-time will not in general correspond to the total. The magnitude of the market value, however, remains a strictly quantifiable variable and thus Rubin's objection that the introduction of demand to the determination of value undermines the quantitative determination of value is not valid. 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 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 can be seen to be a major impediment to the consistent integration of demand.

In order to show why changes in demand do not affect 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 overall level of demand in that period unchanged. 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 can be 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. This result holds regardless of the differences in productivity among producers within each industry because the change in demand affects the market value by the same amount in each industry regardless of the differences in conditions of production. {Some interpretations of the role of demand define the market value as being equal to the value of less or more efficient producers regardless of the magnitude of the shift in demand. This interpretation would obviously result in differences in the overall magnitude of value depending upon the characteristics of the individual industries affected by the demand shifts. See, for example, Guissani 1995, p. 192)}

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 supply may be offset by a single strong shift in demand in an industry experiencing excess demand such that only one price value deviation occurs. The reduction in value in the industries with excess supply is not, in this case, offset by the increase in value in the industry experiencing excess demand since the increase in value in the latter case is limited to the individual value of the least efficient conditions of production. In this case the sum of values clearly appears to be affected by the change in demand.

The puzzle is solved, however, when one takes into account the affect of the price value deviation on the value of money. If the value of money is defined as the ration between the value produced in the period and the total prices in the period, then price value deviations which occur due to changes in demand will have the effect of reducing the value of money such that the total value in the period remains defined by the total labour expended in the period. The presence of strong shifts in demand does not therefor imply that shifts in demand affect the overall magnitude of value.

{In a similar way, changes in demand reflecting excess or insufficient demand in the aggregate, whether accompanied by weak or strong shifts in demand, have the affect of altering the ratio of total value and prices in the period and may effect a change in the value of money. In this case the total magnitude of value in one period may exceed or fall short of the magnitude of labour expended in the period. This does not however, imply that changes in demand create or destroy value. Any increase in demand in one period which is not offset by reductions in demand in a previous or following period will result in a change in the value of money such that the total value created cannot exceed or fall short of the total labour expended. Changes in demand may affect the total value realized in the period, but they cannot affect the magnitude of total value created overall. Value is instead redistributed inter-temporally through the vehicle of money. An analysis of the intertemporal distribution of value due to changes in demand lies beyond the scope of the present argument.}

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 maintains the quantitative nature of the analysis and which preserves the idea that labour is the sole source of value.

ii. Previous Attempts to Integrate Demand

Previous attempts to integrate demand have identified the dual nature of socially necessary labour and applied the logic to correctly distinguish market value and market price. However, each has failed to apply the analysis consistently to produce a theory of price dynamics.

Rosdolski (1977) gives the earliest and clearest English language exposition of the role of demand. His treatment has the great merit of making clear the link between the use-value of a commodity and the second sense in which labour can be socially-necessary (p.89). Further, he explicitly recognizes the diachronic nature of the analysis of the forms of value and thus correctly concludes that Marx's treatment of the determination of market value applies to the determination of prices of production once the existence of a number of competing industries is brought in to the theory (p. 94-5). Unfortunately, Rosdolski restricts his analysis to the determination of market-value and thus fails to show how demand affects the determination of prices of production. The role of demand in redistributing labourtime among industries is thus absent from Rosdolski's treatment.

Indart (1990) and Horverak (1988) also give careful expositions of the effect of changes in demand on the determination of market value. Indart is careful to distinguish between the different stages of the theoretical development of the value forms and thus recognizes that the analysis applies to the determination of prices of production once the appropriate changes are made (p.728). However, Indart assumes that the determination of the value form by the least or more efficient technique of production can only apply to situations in which capital cannot freely flow between industries (p. 732; p. 734). He thus concludes that the effect of demand conditions is limited to cases involving ground rent and cannot be applied to short-run price adjustment processes.

Horverak, on the other hand, does attempt to show how competition in an industry leads to changes in prices and value in the short-run. However, while he consistently shows how demand affects the determination of market-value, in his example he reverts to the determination of market- value by the industry average and thus fails to show the effect of changes in demand on the price adjustment process (1988, p. 295). Because his example focusses on only one industry in isolation, it also fails to show how demand redistributes value among industries.

It remains therefore to show the effect of demand on the determination of value at the level of abstraction which takes into account the existence of inter-industry competition. In the following section, it is shown i) how shifts in demand affect the determination of the market price of production, ii) how this new value category provides a value theoretic analysis of market adjustment processes; and iii) how shifts in demand redistribute labour-time among competing industries.

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