THE UTILITY OF VALUE:
THE "NEW SOLUTION," UNEQUAL
EXCHANGE, AND CRISIS

James N. Devine

I. INTRODUCTION

Even after more than a century, the debate on Marx's "law of value" seems
Epsteinian-like, unkillable. This is primarily because Marx's uses for the law are
so often forgotten. Far too often, the law is dubbed a "labor theory of value," and
then continued with (or reduced to) David Ricardo's labor theory of prices.1 As
such, it has been rejected by many—and indeed should be. Steedman (1977)
prevents the reduction ad absurdum of this approach: Ricardoian labor-values, he
argues, are ambiguous and unnecessary to the calculation of prices. To Elster
(1985, p. 331), Ricardoian "labor value fails because there is no use to which the
concept can be put." Instead, they argue, prices of production can be calculated
more straightforwardly from statesman technical coefficients of production, as-
suming equalized profit rates.

The goal of this paper is not to highlight the mathematical and theoretical
flaws in Steedman's approach, but to take up Elster's challenge, to argue that

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ISBN: 0-89222-990-4

21
value analysis is useful, an important tool for understanding the capitalist world and a basis for developing hypotheses and predictions. The law of value does more than give intellectual something to debate. This paper applies the so-called "New Solution" to Marx's transformation problem of Duéndel (1980), Elye (1922), Lipietz (1982, 1985), and Elbaim and Erlich (1986) to examine the issues of transfer of value, unequal exchange, crises, and inflation. Here understanding is stressed more than hypothesis-generation and prediction.

To close the decks and to avoid yet another paper on "what Marx (really) said," seven controversial principles are assumed to be true: 2

1. Unlike Ricardo's labor theory, Marx's law of value is not chiefly a price theory. A commodity has simultaneously a value and a value-form (i.e., prices). The main purpose of the form is not the mathematical derivation of the latter. Rather, the key question concerns the relationship between values and prices.

2. Values form an alternative accounting framework to prices: a commodity has a value, the amount of socially necessary abstract labor time needed to reproduce it, by definition. 4

3. In the first two volumes of Capital, Marx (1967a, 1967b) assumed that values = prices so as to reveal the totality of capitalism. This broke through the fetishism of commodities to show the social production of surplus-value hidden by markets and prices, and to explore questions of capitalist accumulation. 5

4. But Marx was quite conscious of value/price deviation in the real world early on, the meritorious commodities such as Virgin land or conscience with no value but having a price (1967b, p. 302). Indeed, the equation of prices with values contradicts the nature of capitalism as a social system except under unhealthy conditions (e.g., zero exploitation).

5. The value-price deviation reflects the conflict between socialized production and class relations (seen in values) and individual appropriation of income (through prices).

6. The "problem" of the "transformations" concerns the macropolitical link between values and prices, that is, Marx's propositions that total value = total price, that total surplus-value = total profit, and that the value profit rate = the price profit rate. 6

7. The current literature overemphasizes prices of production and equilibrium in general. Value-production-price relations should be seen as a special case of value-market-price relations. That is, we should not be restricted to forming equilibrium states such as those of the Staffans. 7

Based on these propositions, section II argues that the New Solution solves the problem of the macroeconomic relationship between values and market prices. The special case of prices of production is not considered, nor are matrix models of
the economy. The discussion interprets the existing literature and sets up the mathematical framework for the rest of the paper.

Section III examines the distribution of surplus-value, including the meaning of the transfer of value between capitalists and other groups. This phenomenon is part of the contrast between socialized production and individual appropriation. Workers create and contribute value and surplus-value to the capitalist system. But prices determine the claims that various social groups have on value and surplus-value. These issues are studied in greater detail in section IV, which focuses on types and meaning of "inequity exchange."

The mathematics incorporates the roles of fixed capital and unproductive labor. Thus, this paper applies value analysis to understand a relatively realistic picture, indicating the flexibility of the New Solution. Nonetheless, many real-world issues are not treated, for example, household labor, heterogamous labor (Dewey, 1989), and the role of the state.

The last section examines dynamic implications of the static analysis. Commodity fetishism stabilizes the capitalism system but is intertwined with the contradictions between socialized production and individual appropriation. The latter has implications for theories of crisis and inflation. Because we can use value to analyze capitalism as a totality, it is an appropriate part of macroeconomic theory (a "macrofoundation").

This paper uses these distinctions not often emphasized in the value literature, not even that of the New Solution: ex ante versus ex post value, contributions to versus claims on value, and synchronous versus diachronic causation. Also, the focus is on individual values and prices rather than sectoral values and prices.8 These emphases are important in a dynamic disequilibrium view of capitalism emphasizing individual appropriation. It is also due to Marx, I feel. But their justification here is only their use in understanding our world, not their trueness to Marx.

II. VALUE/PRICE UNITY: THE NEW SOLUTION

Rather than emphasizing Sraffian matrix algebra, the new solution retacks price/value relations (see Dumont 1980; Foley 1982; Lipietz 1982, 1985; Ehrbar and Glück 1986). In most cases, the ex ante calculation of price/value ratios becomes an empirical question, while individual price/value deviations are as important as their similarities. The price/value link appears on the microsocietal level, as in point (6) above. The micro link between values and prices is interpreted as saying that the money price of the mass of new commodities in a commodity-producing society (total "net revenue") expresses the total social living labor. Then the issue is how this value comes to be realized in the money prices of particular commodities. Price/value relations become relatively trivial, so we can move on to applications.
Start with the two accounting frameworks that coexist under capitalism. For each commodity i, values are defined as:

\[ A_i = C_i + V_i + S_i = C_i + VA_i \]  

(1)

where C, V, and S are conventionally defined and VA = value added or living labor (S+V). All are measured in socially-necessary abstract labor time per unit commodity. In a dynamic world, two types of values exist. First, there are notional or ex ante values, reflecting the amount of abstract labor socially necessary to produce a good in the absence of realization problems. These have been stressed in much of the literature, especially in matrix models, where costs determined values. They constrain the second type of value, ex post or realized values: if the market “cannot stomach” as much as labor produced, some of that labor turns out to be wasteful (socially unnecessary) ex post and does not form part of value (Marx 1967a, p. 107). In Sections II-IV, the latter values are central: the macrosocietal identities below are between realized values and prices. The notional/realized contrast reappears in Section V.

On the other hand, prices are:

\[ P_i = c_i + wc + pr_i = c_i + nr_i \]  

(2)

where:  

- \( pr \) = profits;  
- \( c \) = constant capital costs;  
- \( wc \) = wage costs; and  
- \( nr \) = net revenue (\( wc + pr \)), all in money terms (pesos) per unit.

Below, capital letters indicate value categories and lower-case letters signify prices.

The New Solution revamps the total value/total price relation. First, Marx’s assertion that total price = total value is modified because it involves double-counting. Instead, the link between total VA and total net revenue is examined. Second, money need not be gold (as in some solutions to the transformation problem). That assumption is ensued to our age of credit money (cf. Lipietz 1985, chap. 6). Instead, money is the social expression of value, a claim on part of the total abstract labor done. The value of money (\( Vm \)) is defined as the ratio of aggregate living labor (\( Y \)) to the total net revenue (\( y \)). In symbols,

\[ \Sigma VA_i = Vm \Sigma y_i \text{ or } Y = Vm y \]  

(3)

where \( Vm \) is measured in hours of labor per peso. At any time, \( Vm \) is given, so that there is a clear link between total new value and total net revenue.

The net revenue for any commodity i multiplied by \( Vm \) is its owner’s claim on aggregate living labor realized in selling the commodity. Individual appropriation of living labor typically differs from the living labor actually required to produce the commodity. If this claim exceeds the VA needed to produce the commodity, the seller gains value in exchange. But on the societal level, as Marx argued,
value is neither created nor destroyed in exchange; value is "transferred" between sectors. So Equation (3) is a macroeconomic conservation principle showing that the sum of all value transfers in exchange is zero. 

In selling labor-power, as with other commodities, the claim on aggregate living labor is labor-power's price (the money wage) times $V_m$. That is, the value claim of the average wage is:

$$V_{CW} = V_m w = V_A (\Sigma w)/N$$

(4)

where $w$ is the average price of an hour of labor-power and $N$ is the total hours of labor-power sold. 

The third and probably most controversial assumption of the New Solution is that variable capital is measured in terms of the claim on $V_A$ by the wage:

$$S = V_{CW} N$$

(5)

That is, the capitalists' costs is value measured by workers' actual claim on value rather than the value of labor-power ($V/p$, the socially-determined subsistence level). The assumption that $S = V/p N$ might be valid if workers were produced means of production (i.e., chattel slaves) were paid in kind. But labor-power is unique among commodities in that its supply does not follow profit-maximization. Moreover, as Keynes emphasized, workers bargain not over real wages or the value of real wages, but over money wages. Whether they can pass higher consumer prices onto capitalists by raising money wages (and thus $V_{CW} - V/p$) depends on the class struggle and conditions of accumulation. In sum, $S = V_{CW} N = V/p N$, might be a long-run equilibrium condition (see Section V), but we do not want to restrict our analysis to that case. 

Equations (3) through (5) imply that the claim of the entire working class on (and the share of capital income} in total living labor equals their share in total net revenue ($V_{CW} N/Y = Y/P = w/N$). Because the ratio of total living labor done ($L$) to the total number of hours of labor-power sold ($N$) is the average intensity of labor ($o$),

$$V_{CW} = o N e / y$$

(6)

If $r = 1$, as Foley (1982) assumes, then the value claim of the wage is the workers' share of total net revenue (see Marx 1967a, pp 409-410 on the intensity of labor). 

Now the link between total surplus-value and total profits can be derived. (It is not merely assumed!) Subtracting Equation (5) from (3),

$$\Sigma S - V_m N w$$

(7)

This is Marx's second macroeconomic conservation principle. Farther, from Equations (7) and (5), the rate of surplus-value equals the aggregate profit-to-wage ratio:
The formula for the profit rate as a function of \( S \) is derived in the next section, in a more realistic model.

At this point, one question is inescapable, since Equations (3) and (7) are teleological. Should we read them with value categories determining prices or vice-versa? In fact, the equations should be read both ways. The effect of values on prices reflects the role at any time of the social totality in limiting and determining microeconomic decisions and results. In Marx, the productive and exploitative relations between classes in the capitalistic mode of production are more than the sum of individual relations and have a certain regularity and solidity that constrains and shapes individual actions at any time. Total value thus limits total revenue and total surplus-value limits total profits in the battle over distribut-} (see below). However, as seen Section VI, individual actions within this mode of production end up helping to determine the system's laws of motion, so that decisions based on prices affect values through accumulation. In sum, values constrain prices synchronically (in the cross-section) but behavior based on prices affects values diachronically (in the time-series).

Conside- synchronics and distribution lost.

III. DISTRIBUTION: CONTRIBUTIONS VERSUS CLAIMS

Now examine the distribution of value and surplus-value in a model of cap-
} tulation incorporating non-equivalent rates of surplus-value and of profit, unpro-
ductive labor and capital, and fixed capital. Before the model is developed, however, the fundamentals of distribution theory must be proved.

To Marx, before profits could be distributed, surplus-value had to be created at the societal level. The rate of surplus-value summarizes societal class rela-
tions, as seen by its determinants, which are also those of the aggregate prof-
if-wage ratio:

\[
S = \frac{F}{W} \cdot 1 = \frac{v/Wu}{1} = \frac{v}{w} \cdot \text{lim} \ w \to 1
\]

By the rate of surplus-value depends on labor intensity (v) and the value claim of the wage. \( W \) depends on workers' ability to raise wages in the value of money falls due to either inflation or rising productivity, while \( v \) depends on conflict and technology in the work process. These factors in turn reflect the organizational strength of the two main classes on the societal level and the dynamics of accumulation. But at any time, class relations and \( S \) are given and constrain the distributive struggle to be a "ine-\text{verse} game."

Because capitalists appropriate neither surplus-value nor profits collectively
as a class, price-value deviations are typical. That is, individual profit appropriation contrasts with socialized production of surplus-value. Profits are divided among capitalists by prices, by market competition: the value in one sector may be sold for a higher price than an equal value produced in another. Exchange backed by special advantages—barriers to entry, control of a cheap source of raw materials, a state of the art production technique, or political clout—may increase an individual capitalist's profits, allowing the receipt of an above-average profit rate. But special advantages do not create profits on the societal level. Class tension skulks behind the more harmonious market: because the mass of surplus-value produced is given by the general state of Class relations (measured by the intensity of labor and the V/C ratio) and the number of worker-hours employed, the high-profit capitalists are gaining at the expense of the low-profit capitalists.

Sometimes it is said that surplus-value is "transferred" from one group of capitalists to another, from "competitive" capitalists to "monopoly" capitalists, from those with a low organic composition to those with a high organic composition, and so forth. But there is no physical transfer of labor between sectors, rather, one group gets a greater money profit (while another gets profit less) than their surplus-value extraction (when stated in the same units). That is, money claims on surplus-value differ from contributions.

Because of value transfer, it is possible for some to garner profits without directly exploiting labor or creating value. That is, capital that does not directly aid productive workers and thus induces no surplus-value production ("unproductive capital") may still be profitable. For example, landowners and bankers get a share of total profits because they control assets that, though lacking value, are typically both scarce and necessary to capitalist production, land and loanable money-capital. These incomes (ground-rent and interest) are deductions from the aggregate surplus-value. The total surplus-value is thus split between profits of enterprise (industrial and merchant's profits), land-rent, and interest. Some also go to the state, as taxes.

A similar rule applies to unproductive labor, which neither produces nor helps produce surplus-value on the societal level. The employment of some unproductive labor gives capitalists a claim on the share of surplus-value. That is, hiring unproductive workers (for example, advertising staff) can be profitable without being socially productive.

The complexities of price-value relations can be understood with a simple model. Start with values, first resetting constant capital as a sum of circulating constant capital (CC) and the value of fixed capital transferred to the product:

$$C_t = C + KP, \text{ where }$$

$$K$$ is productive fixed capital, means of production that increase the efficacy of productive labor (that produces surplus-value), and $$t$$ is the
turnover time of $KP$. Second, in a disequilibrium world, surplus-value for a product $i$ is:

$$S_i = S'V_i + D_i$$  \[(11)\]

where $D_i$ is the deviation, due to barriers to the mobility of labor, power and capital, of this commodity’s surplus-value from that determined by the average rate of surplus-value ($S'V$). By definition, $2D = 0$ for capitalism as a whole. Thus, from Equations (1), (10), and (11),

$$A_i = (1 + S'V_i + CC_i + KP_i)|r_i + D_i$$  \[(12)\]

is the value of a unit of $i$.

Next, in price terms, capitalists receive a profit on money tied up in fixed capital plus profits due to special advantages:

$$pr_i = r_k + d_i$$  \[(13)\]

where: $r$ is the average rate of profit on fixed capital; $k$ fixed capital per unit; and $d$ profit (or loss) per unit due to special disadvantages.  \cite{21}

By definition, $2d = 0$ for the system as a whole. Unlike in the value equations, fixed capital includes both productive capital ($k_p$) and unproductive capital ($k_u$).  \cite{22} Unproductive capital, for example, land and money capital, are assets that do not increase the efficacy of productive labor but do allow capitalists to claim a share of surplus-value.  \cite{26}

Next, introduce the distinction between socially productive and unproductive wage costs per unit:

$$w_c = v_i + u_i$$  \[(4)\]

where $v$ is productive workers’ wages and $u$ is unproductive workers’ wages, a nuance that capitalists of course ignore. (Up to this point, we assumed $w = v$.) Finally, capitalists add the profit to costs  \cite{27} to get the price:

$$P_i = r_k + c_c + v_i + u_i + d_i$$  \[(15)\]

where $c_c$ is circulating capital cost. Taxes are ignored here.

Following the most common view to treat unproductive wages as a deduction from surplus-value,  \cite{28} equation (7) becomes:

$$V_m \Sigma (p_r + u) = \Sigma S$$  \[(7')\]

Substituting Equations (11) and (13) into (7'), the average profit rate on fixed capital ($2p$) equals:

$$r = (S'V/V_m - \Sigma u)/2k$$  \[(16)\]

where $d$ and $D$ cancel out on the aggregate level. Alternatively,
\[ r = \frac{S}{Q} - \left( V/n \sum \Delta K/P \right) \left( \Sigma K/P \times V/n \sum \Delta K \right) \]  \hspace{1cm} (17)

where \( Q \) equals \( \Sigma K/P \Sigma V \), i.e., the measure of the value composition of capital. \( S'/Q \) is the value rate of profit \( R \).

Equation (17) suggests that Marx’s assertion that the price rate of profit = the value rate of profit does not apply unless \( \Sigma K/P \Sigma V = 1 \) and \( \Sigma V = 0 \). Although the price profit rate might be defined to make this equality true, to do so would distort the meaning of that rate. This profit rate, in most views, is a variable relevant to capitalist decision making: how else could it move toward equality among sectors or affect accumulation? Indeed, Marx did not introduce the profit rate concept until volume III when discussing prices and “the ordinary conscious agents of the agents of production” (1967c, p. 25). So instead of equating the two profit rates, reducing \( r \) to \( R \), treat the connection between the rate of surplus-value and the price rate of profit (Equation 16) as the crucial value-price connection. Alternatively, use Equation (17) to relate \( r \) and \( R \), noting that phenomena of competition (including the role of unproductive capital and labor) prevent these relationships from being simple.

For a commodity \( j \), the price equation can now be restated as:

\[ P_j = \left( S(2)Y \right) / \left( V \cdot n \sum (\Delta K / 2K) \right) + cc_j + wc_j + d_j \]  \hspace{1cm} (18)

The profit received depends on the owner’s share in total capital (\( \sum (\Delta K) \)) and total surplus-value net of total unproductive wages, plus special advantages (\( d_j \)). Further, the price of \( s_j \) depends on not only micro variables (\( cc_j, wc_j, d_j, \) and \( k_j \)) but on macro variables (\( S(2)Y / V \cdot n \sum (\Delta K) \)), summarized by \( r \). The \( r \) is partly determined by the rate of surplus-value and the value profit rate \( R \), which depend on society-wide class relations. In sum, Equation (18) shows the importance of the societal macrofoundations to microeconomics.

IV. AN APPLICATION: UNEQUAL EXCHANGE

“Unequal exchange” has either a broad or a narrow meaning, referring either to any case where \( V_A \neq V_B \), or to a paradigm of center/periphery relations, as introduced by Emmanuel (1972). To make matters more concrete, examine the latter. However, the following could apply to any two sectors: that is, assumptions of center/periphery differences are not essential.

Let the center be sector 1 and the periphery sector 2. Per-unit values are:

\[ A_1 = (1 + S)W_1 + KP_1/2k_1 + CC_1 - D/k_1 \]  \hspace{1cm} (19a)

\[ A_2 = (1 + S)W_2 + \bar{K}P_2/2k_2 + CC_2 + D/k_2 \]  \hspace{1cm} (19b)

where \( D/k \) is per-unit exploitation in the periphery that goes beyond the international average represented by \( S \); \( k \) is the amount of output. Assume that pe-
riparterist workers are "wage-exploited". The surplus-value exceeds the average in the periphery ($D = 0$). So total surplus-value in each sector is:

$$T_i = \bar{s}_i V_i (\cdot - D) = S' Y_i (\cdot - D)$$

where $T_i = s_i Y_i$

In this section, $i = 1 \ or \ 2$.

Next consider prices:

$$P_1 = r k_1 + c W_1 + c r_1 + d / x_1$$

$$P_2 = r k_2 + c W_2 + c r_2 + d / x_2$$

where $d / x_i =$ per unit profits above $r, k$

Thus each sector's total profits are

$$\pi = P_1 V_1 = r k_1 + c W_1 + c r_1 + d / x_1$$

$$\pi = P_2 V_2 = r k_2 + c W_2 + c r_2 + d / x_2$$

where $k_i = s_i Y_i$ = total fitted capital in sector $i$. Assume that the center has monopoly power or some other special advantage in trade, so that it receives above-average profits: $D > 0$. As above, a sector's profits differ from its claim on aggregate surplus-value. The latter is

$$\pi = r s_i V_i (\cdot - D) + n_i$$

where $n_i = s_i V_i$, total supredistributive wage costs.

From (7), the conservation equation sets world surplus-value equal to world claims:

$$\Sigma s_i V_i = \Sigma \pi$$

Given formulas (20) and (23), and rearranging terms, this gives the average rate of profit for a world scale:

$$r = (S' / s) V_m$$

where $\Sigma V_m = \Sigma s_i V_i = r V_m$.

Transfer of surplus-value to the center ($T_{R+}$) is the difference between claims on value $\Sigma v$ transferred and value actually produced ($T_{V}$):

$$T_{R+} = V_m (\cdot - D) - \Sigma' V_i (\cdot - D)$$

To see this transfer is price terms, simply divide through by $V_m$. Either way, the transfer to the center plus that to the periphery equals zero.
Combining Equations (25) and (26),

\[ TR_t = Vm a + S' \left( q_i g - 1 \right) T \left( V_i - D + z_i \right) Vm a k_1 \]  \hspace{1cm} (27)

where \( q_i = a k_1 / V \), and \( z_i = e_i / k_1 \).

This is the basic equation of unequal exchange, and represents a step beyond previous efforts at a unified schema for understanding unequal exchange. For example, Shaikh (1980, p. 52) provides a 2x2 chart combining the effects of two types of value transfer (cases (1) and (2) below). Equation (27) is more exact and adds Emmanuel’s unequal exchange and a form of value transfer not previously noted. Consider the equation’s four parts separately.

1. To delavry and Kramer (1979), the first term (Vm a) represents “unequal trade” due to the monopoly power of the center in the trade of goods and services (due to tariffs, etc.). It also reflects other advantages (land and technological rents). Mondell (1975) emphasizes the latter type of unequal exchange.

2. The second term \( S' \left( q_i g - 1 \right) V_i \) says that there is surplus-value transfer if the center’s price is higher than the world average. This is “transformation problem” transfer, due to differences in “capital intensity.” Note that capital intensity is measured in a different way than in most of the literature. This \( b k / T V \) is the ratio of the ability to claim surplus-value to their contributions to the world pool. On the one hand, surplus-value is produced by variable capital. On the other hand, it is ownership of fixed capital (in price terms) that allows capitalists to claim profit: capitalists will not invest in fixed capital unless they receive profit in proportion.

This transfer will not occur if \( S' = 0 \). This is close to impossible under capitalism, occurring only during severe crises, but does take place with simple commodity production. In that case, total world surplus-value and profits would both equal zero. Profit could be made only if other sectors have losses, under a system of plunder, unequal trade, and Emmanuel’s unequal exchange. On the other hand, the transfer to the center is high if the mass of “normal” surplus-value produced in the center (\( S' V_i \)) is high; the larger the use of variable capital in the center, the larger the value transfer, ceteris paribus.

3. The third term (D) denotes Emmanuel’s unequal exchange, transfer of surplus-value to the center due to superspecies in the periphery. Shaikh (1980, p. 52) suggests that the effect of differential wages is only to exaggerate the other transfers. However, Equation (27) shows this to be untrue in general: D can be positive even if terms (1) and (2) are zero.

Nonetheless, the conditions for the existence of this unequal exchange cannot be taken for granted. Delavry and Kramer (1979) doubt its existence if capital moves to take advantage of low wages, raising wages and lowering D in the periphery. It might be argued that since equilibrium are always being disrupted by capitalist accumulation, unequal exchange of this sort can exist. However,
that view does not imply any direction to the flow of surplus-value. A vicious-circle theory of underdevelopment is needed to explain why disequilibrium leads to superexploitation of only peripheral workers.

4. Finally, there is a new type of unequal exchange not noted before: if the center uses unproductive labor more than the world average ($c_p > 0$), then value will be transferred to the center. There is also transfer to the sector using the most unproductive capital, represented as part of transfer type (2), since $k^*$ includes both $k_p$ and $k_a$. As noted in Section III, though unproductive labor and capital do not produce surplus-value, their use is profitable. The sector not emphasizing unproductive labor and capital pays for these profits.

To end this section, so what if value is transferred? One part of the world is doing more work than it is getting in terms of net revenue (both as a percentage of the world total). For systemic reasons, there is inequality of monetary rewards relative to the socially necessary abstract labor done.

The competition over the distribution of value described in Sections III and IV affects individual perceptions and actions, which in turn affect the system's laws of motion. Turn to these issues next.

V. DYNAMICS: FETISHISM, CRISIS, AND INFLATION

To sum up the above, the law of value shows that individual producers under capitalism are socialized, that is, interdependent, rather than isolated as in the classical vision. We are all in the same boat. This interdependence is shown by conservation principles (3) and (7).

Interdependence does not imply harmony. The "boat" is rife with rivalry among the officers and potential mutiny of the crew. Moreover, people often do not see the existence and nature of the boat itself. Dropping the now heavily barnacled analogy, individuals appropriate income, often not knowing, and unable to act on, their interdependence. Workers, capitalists, and economists suffer from commodity fetishism or the illusions arising from competition (Marx 1867c, part 7).

Because prices are out of sync with values, the link between surplus-value and individual profits is obscured, as are class relations. As described above, an individual capitalist's profits appear to arise from his investments (k), efforts, risk taking, and special advantages (d)—and not because she shares in society-wide exploitation. It cannot be stressed too often that this illusion arises not because of "false consciousness" but because of an individual's partial view of the system from the inside. Indeed, from a purely individual view, it is not an illusion. Further, even if an individual can see values or surplus-value, she typically cannot act on the basis of them.
This mystification helps legitimate the system, making force less needed to protect capitalist property and surplus-value extraction. Individual workers and unions often lack a vision of the "big picture"; for example, craft unions often push for better wages and conditions for an elite of skilled workers, totally disregarding class interests. And seeing "their" capitalist's profits as crucial to the provision of jobs, many times workers ally with employers to fight for special privileges (e.g., tariff protection).

However, the stabilizing benefits to the capitalists are not free: the individualized nature of capitalist property and the resultant anarchy of production are also the major bases of economic crises. Here we touch briefly on capitalists' laws of motion.

Part of the story comes from labor's side: if their claim on value (VCw) is less than subsistence (Vp), then it is pushed by necessity to struggle for higher wages. If, on the other hand, VCw > Vp, the "moral and historical" element of subsistence (and with it Vp) tends to rise as established luxuries become new needs. Over the longer term, the two should be similar, if workers' struggles are successful. One might write of a long-term equilibrium, where VCw = Vp.

But at any time, Vp is merely a center of gravity for fluctuations of VCw. Further, until the working class is class conscious and highly organized, labor is more acted upon by capitalist accumulation than it is an independent act.33 So consider accumulation, taking the VCw as mostly determined by accumulation, ignoring historically-specific factors such as labor's organizational strength. Capitalists augment their capitals using their profits plus borrowed funds, which are based on the surplus-value produced by society. But they make these decisions on the basis of individual profitability: it's prices and money incomes, not values, that determine behavior. Rather thus seeking to produce the most private or aggregate surplus-value, an industrial or commercial capital maximizes the following, subject to various microeconomic constraints:34

\[
\sigma_j = (r_j - r_i)(W_j + x_j) x_j
\]

where \( r_j \) is the interest rate on borrowed capital.35

Note that this refers to behavior in an arena rather than privage ex post (as in previous equations). When value analysis moves to diachronics, the contrast between ex post and ex ante (realized and notional) values must be highlighted: decisions are made ex ante but results are seen ex post. Most importantly, ex ante net value (\( V' \)) need not equal ex ante net revenue (Vn y'). Labor done under capitalism is not directly social; it only proves itself to be socially necessary in the market test.

Maximizing a formula such as (28), capitalists strive to own anything that allows them to claim a high money profit, that is, large investments (k) and special advantages (d). On the former, if \( r > r_i \), capitalists vie for large capitals even though it is not a large capital but the exploitation of labor on the societal
level that produces profits. Capitalists thus accumulate independently of the social conditions, ignoring the effects on \( r \). The competitive struggle induces capitalists to overaccumulate, in fear of falling behind.

These effects can be seen by rearranging Equation (17):

\[
 r = \frac{1}{\sum \phi_i} \log \left( \frac{\sum \phi_i}{\sum \phi_i - 1} \right) \text{ (17)}
\]

One type of overaccumulation involves the purchase of means of production even though on the social level they do not create surplus–value. Profits cannot be created by machines, only by the exploitation of workers. In Marx's law of the tendency, for the profit rate to fall, this causes a rise of the competitive price of capital (measured by \( p \)). Costs thus rise, this depresses \( r \).

Another type of squeeze on profit rates consists of hiring too many workers (by capitalist standards). Each individual capitalist minimizes wage costs. Aggregate accumulation may feel \( r \) and thus \( r \). This is because they accumulate assuming that as individuals they have no effect on these aggregate variables. Excess growth drags up the reserve price of the unemployed, raises wages, undermines the intensity of labor, and squeezes the profit rate. This type of crisis is part of the story of the late 1960s for the United States (Devlin 1987).

Third, capitalists invest in productive activities such as speculation simply because there are individually profitable. These raise \( r \), and thus \( r \), without boosting productive capital \( (K) \) or \( X \), depressing the last term of Equation (17), and across paribus, the rate of profit. Competition also pushes individual capitalists to buy unproductive wages \( w \) because of the private benefits, even if it raises \( X, X_k \), and hurts the profit rate.80

In sum, the fact that individual capitalists can claim more than they contribute to social surplus–value means that they can drive themselves into a collective crisis: this crisis dramatically shows the hidden interdependence of individual appropriation. Further, crises threaten to distinguish the system by revealing the totality of the system and undermining the foothold of commodities. In general, if the profit rate falls relative to the interest rate (fixed by prior loan agreements), accumulation slows. This breaks the social conditions needed to maintain adequate demand (ones in Marx's reproduction schemes) so that a realization crisis results: moral claims on value (\( V \)) is not a normal value (\( Y \)), so that realized value falls.81

Turning to inflation, Max Hirsch did not develop a theory beyond noting that inflation can result from the discovery of new gold supplies. Because the current monetary system is not based on gold, that is hardly relevant. But fundamentals in an inflation theory can be outlined.

With the value of money and the average wage \( w \) given, the VC is determined. With the intensity of work \( c \) also given, the competition among capitalists to attain profits represents a right over a fixed pool of surplus–value. This struggle intensifies if overaccumulation has driven the profit rate downward. One way to mitigate this light can be a fall in the value of money. It is not
claims on value exceeds notional net value \((Wm > W')\) and value production \(Y\) cannot rise (due to capacity constraints). \(Wm\) must fall so that realized value claims \(Wm\) equals value production \(Y\). Because the value of money is measured in labor hours per peso, \(Wm\) can fall if there is a fall in either labor-hours per unit output (an increase in productivity) or output per peso (inflation). Suppose that productivity increases at the same rate as money wages (or slower). Then only inflation can temper capital’s rivalry; each capitalist tries to avoid cost pressure on his profit rate by hiking prices, even though these increases do not solve the basic problem of a depressed profit rate. So each attempts to raise prices again; a continuous process of inflation results as long as the profit rate is depressed. This is possible if the supplies of credit increase sufficiently.\(^{10}\)

In conclusion, the above analyses of distribution, unequal exchange, crises, and inflation are incomplete and abstract. No concrete or testable hypotheses have been developed, but the basis for such has been built. The analyses do indicate the futilityfulness of the New Solution approach in a dynamic-dis-equilibri- um context to help our understanding of the workings of capitalism.

ACKNOWLEDGMENTS

Thanks to Paul Zarembka, John Miller, Alain Lipietz, Karl Glick, David Gleich, Steve Cullenberg, and members of the Great Los Angeles Political Economy Seminar for their comments on an earlier draft. Of course, all crimes of prosan and premedication are mine alone.

NOTES

1. Marx never used the phrase "labor theory of value," except to refer to other economists' views, especially those of Ricardo.

2. These points are argued in a longer manuscript available from me. Not all are accepted by proponents of the New Solution.\(^{10}\)

3. See Himmelweit and Mohun (1978); Wolff, Celloti, and Jihunse (1984); and Elbar and Glick (1986-87) on the differing interpretations of value of Marx and Ricardo.

4. For joint production (e.g., wool and mutton being produced by the same sheep), commodities are merged into a composite commodity \(wool + mutton\). On this view, Fagone (1986) shows that the cases of joint production fit the definition of value as unrealizable. Swanson (1986) argues against the joint product interpretation of fixed capital.

5. This arises from his philosophy of historical materialism, in which historical actions of people in society take precedence and from his commitment to the class interests of the workers.

6. Freeman (1984, pp. 250-255) argues that the function of Marx’s "two equalities" (total price = total value and total profit = total surplus-value) is not part of a solution "for calculating prices which we already know anyway, but... an analytic instrument for organizing how prices and finding out how they distribute the results of production in the capitalism" (emphasis in original).

7. Mondu and Freeman (1984) argue ably against the equilibrium interpretation of value theory, especially that of the Staff.\(^{10}\)
8. The distinction between the individual and social value of a commodity is ignored, treating each product as if it were sold in a separate market from all others. This is in direct response to the prevalence of monopolistic competition and the common arbitrariness of the division of the economy into sectors for analysis.


10. Marx turns from this position, seeking the need for "some modifications" to require that "Looking upon society as a whole, the profit contained in, i.e., the price of the tax cannot repeat twice—but not both in a portion of the total value and as the profit if the tax" (1867, p. 160).

11. Because all variables below are for all commodities under capitalism, the index is dropped below.

12. However, that does not say the value can be manipulated or exchanged (e.g., a mobility crisis) or productivity increases; the internal value of existing commodities is not realizing.

13. Some New Solution analysts refer to the VCE as the "value of labor-power." This confusing terminology is avoided by equation (5) to more clearly use the New Solution's definition of "value" and beyond of the importance of the cashSkwis in terms of value and productivity of value.

14. Wolff c., e.g., 1984 present analytic solution in the transformation problem in which the value of the means of production valued rather point one identifies with price vassage. The New Solution assumption is preferred because of its emphasis on class conflict (in the determination of the money wage), the livelihood (by MPC and its activities for understanding capitalism as text below). Also, the Wolff et al. solution has a straightforward, they assume that the sum of the price of goods of production = the sum of labor values (1984, Appendix, Equation 3). This implies that if a wage is set below value, values must be transferred to another sector of the society producing means of production. Yet wages must be made from the sum of the goods activity.


16. Wage structure (Devere 1961) that this assuming his Marx's view. For occupational purposes, however, it is not made.

17. The role of determination "at any time" in Marx can be seen by the temporary in Capital of phases such as "it is a gross error, at a given period" something is "practically known." See, for example, (1967, p. 171).

18. This view is also at Lipsey's wage-wealth duality (1965, pp. 30, 18). The exception is to the simultaneous determination of prices by value in the money wage, which is obscured internally internally is the value-drawer by the wage (VCE). This means reasonable wage in "pervasive," that is, if wages are paid whether not the product is sold and whether or not the value produced is realized.

19. This conclusion is vague in the transformation (location). Total surplus = value — 5.VCE = 5.VCE. But 5 = 5-5. In 5 = 5 + 5-5. The two surplus values are separate, determine the value-drawer, the money wage is a function, not a notion. It is finally a value of theory; both wages and price variables by any one under-capitalization.

20. Only purely productive labor is discussed here. But this allows understanding of the role of more complex cases in practice, such as "irregularly productive labor" which reduces stone, allows proper exploitation, etc. See Miller (1984) for a visual summary of the form involving operational labor.

21. For a more complete treatment of fixed capital, see Swanson (1960).
24. Because of its limited mobility, the use of stock capital ensures that profit maxes will typically not be equalized between sectors.

25. Of course, capitalism ignores this distinction. The sum or the contrast between productive and unproductive fixed capital is examined further in Section V.

26. If the capital is entirely money-capital or land, then the "productive" is called interest or rent. This suggests a simple perspective on commodity: $k_0$ is the capitalized wage of future money rents, the gross price of land. The capitalist earns income $w$, simply for being the owner of land (akin to Marx's absolute wage, but not the same). In addition, there is differential rent $d$. Note that the existence of either sort of rent cannot be shown or explained on the price-level. This suggests value analysis of rent, one of Marx's tasks in Volume III.

27. Adam Smith's "moral suasion" theory of prices applies on the micro level of individual price phenomena, but not on the macro level of values. Also, the ability of capitalism to "saddle on" depends on market conditions et cetera.

28. Unproductive wages have instead been treated as part of constant capital (Maze 1965) or of variable capital (by those rejecting the productive-unproductive distinction). In all cases, conservation equations similar to (1) and (7) will be met. In the case of (7), equations (1) and (5) become:

\[ 2(V) = (2r + l_1 + w_1) \]

\[ 2(V) = (w_1 + 2w) \]

On the latter, variable capital is measured by the value claim of productive wages, while the average wage ($w$) is defined for only productive workers.

29. For LEQ, $2a_1 > 1$, so only will there be no unproductive capital, but the price of bp must proportional to the value of $k_p$.

30. This can occur if the foreman has relatively high work intensity, long workday, or low value claimed by the wage.

31. This type of unequal exchange is larger if the value of money is high. But this is trivial, because it is only a matter of translating different accounting frameworks into each other.

32. Shaikh's (1980, p. 42) more convex model suggests that the net transfer to the center is ambiguous. This refers to the result of all of the terms of Equation (7), except $I_a$ and depends on the assumptions of his model. See also Hinton and Piao (1997) for a largely empirical critique of unequal exchange.

33. This generalizes Men's view that the average wage is an endogenous, not exogenous, variable (1986a, p. 620).

34. These include the demand curve for the firm's output, supply curves of inputs, technical relations among the inputs, and the limits on which types of it are used as profitable.

35. The application of the interest rate to the entire fixed capital is taken from the logic of the opportunity cost. The capitalist could have lent out the money equivalent of $b_2$ at the interest rate instead of tying it up as fixed capital.

36. Gaming profits by buying machines below value does not solve the social problem because it is at other capitalists' expense.

37. See Marx (1967, p. 67). Shukla (1977) and Lieberman (1982) present two recent interpretations of this "law." The controversy surrounding this theory exceeds the scope of this paper.

38. As Toffler (1985, p. 82) notes, "... at certain times the general and the particular conditions of capital accumulation come into violent contradiction and ... the problem of productive and unproductive labor is one of the key elements in this clash."

39. A more complete picture of this story and $I_a$ below would involve a model of reproduction schemes involving money, such as in Ilyin (1988, ch. 5). Note that quality of $I_a$ and $F$ might be altered by new $I_a$. This involves definition or decoupling labor productivity (the reverse of the relation below). Both are abstractions.


