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Exploitation in a Dual Economy.

An Application of the Labor Theory of Value to Capitalist and Domestic Exploitation
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*this is a draft! please treat accordingly...
comments are wellcome!!!*

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After the Domestic Labour Debate of the 1970s Marxian Economists have with few exceptions neglected the question of women's exploitation in the household. Parallel, the developing field of Feminist Economists mostly operates outside the Marxist framework. However, Marxian Economics has made considerable progress in the past 20 years, especially regarding the concept of exploitation and the labour theory of value. Incorporating these new insights and building on the Dual System Theory, this paper presents a simple model that allows the calculation of rates of exploitation for men and women, taking into account the time worked in the household as well as in the (capitalist) factory. The model is illustrated by way of application to the time use study for Austria 1992. Finally exploitation rates for the capitalist sector alone are calculated. The central finding of the empirical application is that women are more exploited than men. An interesting finding for a Marxist model.

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The Labor Theory of Value

Going back to Petry (1916) and Sweezy (1942), we can distinguish the qualitative and quantitative aspect of value analysis. The argument presented in this article is concerned about the quantitative value theory, or more precisely: the question how we can conceptualize exploitation quantitatively in an economy that is constituted of more than one class process.

Exploitation means that the producers do not receive the entire product of their labour but someone else is appropriating part of it. While this summarizes the concept of exploitation, it is in fact only a necessary condition. Two more ingredients seem to be required: regularity and power. (1) The appropriation of a part of the net product by someone else has to take place on a regular basis to distinguish it from occasional theft and (2) the appropriator of the surplus must be in some position of power (be it direct or structural), to distinguish it from voluntary acts such as gift giving. However, given the narrow purpose of this paper it suffices to define a class as exploited if its share in the net output is less than its share in social labor. Simple as this definition may be, it is important to note that it is not restricted to capitalism, nor, more generally, restricted to commodity producing economies.

As is probably obvious by now, the definition of exploitation is inspired by some works of what is often called Analytical Marxism, in particular by Cohen 1979 and Roemer 1982. In fact I regard their contributions on the topic of exploitation as highly clarifying, even though I do not share their hostility against the LTV.

The labor theory of value, speaking again about its quantitative aspect, states that the value of a commodity is determined by the socially necessary abstract labour time (SNALT) that is required for its production. This definition seems to be rather uncontested, though many Marxists would correctly that it misses out on many of LTV's interesting qualitative parts.

Most Analytical Marxists seem to agree that LTV further states that labour power is a commodity just like any other and hence its value is determined by the SNALT that is embodied in the means of consumption bought by the workers. Finally it is assumed that Marx's theory of (capitalist) exploitation rests fundamentally on this notion of value of labour power.

Such a reading of Marx is certainly possible and has indeed been predominant in value theory, and even more so in the discussion around the transformation problem (see Howard and King 1992). Writers in this tradition, the Standard Interpretation, usually conclude that quantitative LTV is at best superfluous or worse, simply wrong (Steedman 1979) because the profit share in value terms deviates from the profit share in price terms. However this interpretation of LTV is not the only one possible and recent contributions to value theory depart from it (references Wolff, Calari and Roberts, Freeman, etc).

Among these the so-called New Solution (to the transformation problem) is of particular relevance for the argument presented below (Dumenil 1983, Foley 1982, Lipietz 1982 and 1983). Among their contributions is that the equality between sum of prices and sum of values refers to the net output instead of the gross output (as assumed by the Standard Interpretation) and that the value of labour power can also be defined as the value of the money wage, which is the share of the net output the money wages represent a claim on. Such a concept of the VLP not only maintains more of Marx's claims than the standard interpretation, but it is also more useful for a model that takes household labour into account.

The domestic class process

The question of how capitalist and domestic exploitation are articulated has fueled the Domestic Labour Debate of the 70s and early 80s. This debate focused around the question whether household labour creates value and whether it is exploited. Implicitly, value always meant capitalist value. Domestic production was analyzed in its relation to the capitalist class process and not as a class process in its own right. Hence, the link between household labour and capitalist commodity production was the labour power of the worker.

Household labour obviously plays a crucial role in the reproduction of the worker. So the discussion analyzed whether household labour creates the commodity labour power or simply the living worker (Himmelweit and Mohun 1977) and, assuming that it does produce labour power, whether it creates value and surplus value (Secombe 1973, Coulsen et al 1975). Others, e.g. Gradiner 1975, have argued that household labour does not create value but does, although indirectly, contribute to (capitalist!) surplus value by lowering the value of labour power. Implicit in all these arguments seems to be that for domestic labour to be exploited, it has to contribute to capitalist surplus value. Hence I agree with Molyneux (1979, 19) that "two errors frequently (were) reproduced in much of the domestic labour literature (...): that of assimilating housework into the capitalist mode of production and that of placing housework in a wholly functional relation to capitalism."

This paper avoids part of the problems of this debate since the concept of the value of labor power plays no crucial role here.

The economy is understood as consisting of two interwoven class processes, the capitalist and the domestic. The former provides commodities that can either be accumulated or serve as an input for household production which in turn allows for the reproduction of the labor power for the capitalist as well as the domestic production process.

The theoretical foundations of such an understanding are to be found in dual system approaches, which state that the current social formation consists of two distinct but interwoven relations of production. Needless to say, these scholars (Harrison 1973, Delphy 1984, Walby 1986, Folbre 1987, Fraad et al 1994, Kynaston 1996 among others) present different analyses, but share the idea that the capitalist and the domestic class processes are relatively autonomous, but interrelated.¹

Now the question arises again, whether, if at all, domestic exploitation can be analyzed by LTV. A first glance tells us: No, since household labour does not produce commodities and LTV presupposes commodity production. But we can extend LTV to incorporate class processes that are not based on commodity production. This "Extended-LTV" states that the value of a good is given by the socially necessary abstract labour time (SNALT) required to produce it. The only difference in this definition is the use of "good" instead of "commodity". Obviously, this version of LTV is more general than the standard definition. Then the question arises whether household labour can be spoken of as SNALT. This seems to require some degree of standardization (Bauböck 1991) and some pressure to adopt efficient production technologies (Folbre 1981). These two allow to claim some degree of uniformity and comparability of the labour performed. Bauböck (1991, p. 27ff) points out that several mechanisms of standardization of household labour are in operation: the means of production employed (e.g. washing machine), the goal of production (reproduction of the household as a viable economic unit which requires the reproduction of labour power for the capitalist class process) and through cultural norms (namely gender roles). Folbre (1981, 327) argues that "Household production is not governed by market forces, but is governed by material constraints which motivate households to use the most efficient means possible to accomplish their ends."

This makes it sufficiently reasonable that the same amount of time spent in different households will create comparable use values and, as a consequence, to allow for the use of SNALT as a category.

This leads to the question how the SNALT expended in the household can be compared to the SNALT expended in the capitalist sector. There is a broad consensus that this cannot be done directly (e.g. Molyneux 1979, p. 21, Bauböck 1991, p. 49), since different mechanisms generate the standardization of labour within each sector. While I agree that a rigorous accounting framework would require a conversion procedure adjusting for different work intensities and skills etc., I do not regard this as the foremost empirical problem.

A corn-bread model of a dual economy

Now for the model. Let us imagine an economy with a capitalist sector and a domestic sector. The capitalist sector produces a commodity, which, following the classical tradition in economics, we will call corn. Corn is needed as seeds. Further it is either bought by the workers and transformed into services and goods, which for convenience we will summarize as bread in the household, or it is appropriated as surplus by the capitalist. Bread allows the workers, i.e. the wage worker as well as the domestic worker, to be reproduced and go back to work the next day. As the reader can easily see, this

¹ Among the most obvious differences is the terminology. Feminists speak of the Patriarchal Mode of Production, Harrison uses the term Domestic mode of Production and Fraad et al. refer to feudal class processes. The use of "domestic" class process is motivated by an understanding of this peculiar class process as a special case of patriarchal class process, the form it took on in articulation with an enormously dynamic capitalist mode of production. The term class process instead of mode of production is used in order to avoid the problems of defining a truncated patriarchal MOP (see Molyneux 1979 for a helpful discussion of some of these issues).

model exhibits all the ignorance against cultural processes that most economic models share in common. No attempt is made to hide this fact.

The structure of this dual economy is somewhat asymmetrical: The capitalist sector produces commodities that do enter the domestic production process, whereas the domestic goods are consumed in the household and do not enter capitalist circulation. Nonetheless the domestic production process is a condition of existence for the capitalist process since only the former allows for the reproduction of the wage workers. Contrary to much of the domestic labour debate, household labour, here, does not produce the wage worker but the goods that allow for his reproduction. The crucial point here is not a genuine answer to the question whether producing the goods and services that allow for the reproduction of the worker is analytically equivalent to the (re)production of the worker, but the mere fact that with the analytical scheme presented here, the output of the domestic labour does not enter capitalist circulation.

To facilitate exposition, a numerical example will be presented. Assume that the capitalist sector produces 3 units of corn by using one corn and an hour of labor as input. One unit of corn goes to the workers and one to the capitalist, one is required to guarantee for the corn as input. In the household another hour of labor is required to grind the corn prepare the dough and put it in the oven, so that we end up with a unit of bread eventually. (see table 1)

Table 1. A simple corn and bread economy

	physical input	labor input	gross output
capitalist sector	1 corn	1 hour	3 corn
household sector	1 corn	1 hour	1 bread

The net output of our economy is, as can be readily seen, one unit of corn and one unit of bread, since two units of corn have to be used as inputs. This net physical output corresponds to two hours of work that have been performed, one in the capitalist sector and one in the household. Further we can calculate labor values for corn and bread, which are one half and two thirds respectively. Formally there is no difference between the value produced in the household and in the factory, as can be seen in table 2. However, the interpretation is distinct. Values are usually thought of as pertaining to commodities only. The bread in our model is not a commodity since it is not produced for exchange. As argued above, I do contend that the quantitative part of LTV can be extended to non-commodity production, if this production is sufficiently standardized. However, three qualifications are necessary.

First, the value produced in the household is not a capitalist value. It is, for lack of a better word, social value.²

Second, by extending the notion of value to the household we get into some terminological problems. The quantitative aspect of value is referred to as exchange value -- an expression that does not fit here any more, since the bread is not exchanged. Hence we will call this form of value simply "abstract labor value", or shorter: labor value. The "abstraction" of labor in this view is achieved by standardization, of which the market is only one form (Folbre 1981, Bauböck 1991 p. 25ff).

Third, in the value accounting we treat an hour of labor as an hour of labor, no matter whether it was performed in the factory or at home, i.e. I assume homogenous labour.

Table 2. An input output model of the corn bread economy

quantity system $g = A \cdot g + n$

² This extension of the notion of value might appear trivial. However, much of the confusion in the Domestic Labour Debate was caused by an inability of Marxists to conceive of value other than the capitalist exchange value - use value distinction found in Capital.

$$\begin{bmatrix} 3 \\ 1 \end{bmatrix} = \begin{bmatrix} 1/3 & 1 \\ 0 & 0 \end{bmatrix} * \begin{bmatrix} 3 \\ 1 \end{bmatrix} + \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

value system

$$\lambda = \lambda * A + 1$$

$$\begin{bmatrix} 1/2 & 3/2 \end{bmatrix} = \begin{bmatrix} 1/2 & 3/2 \end{bmatrix} * \begin{bmatrix} 1/3 & 1 \\ 0 & 0 \end{bmatrix} + \begin{bmatrix} 1 & 1 \end{bmatrix}$$

where

g column vector of gross output $g = \begin{bmatrix} \text{gross output of corn} \\ \text{gross output of bread} \end{bmatrix}$

n column vector of net output

A input output matrix

λ row vector of labor values

1 row vector of labor inputs

So far nothing has been said about who does the work. Now we will assume that there are men and women in this economy and that they will have a certain division of labor both within and between the wage labor and the domestic labor. Formally, not much changes: instead of one vector for labor inputs we will have two, one for men and one for women, l_m and l_f respectively. Each of them indicates how much men and women work in the two sectors.

How can we now measure to what extent men and women are exploited in this economy? Marx's measure of exploitation is the ratio of surplus labor to necessary labor, or in other words: surplus value over the value of labor power. We will come back to this measure at the end of the paper, but here we will develop a different concept. The problem we are facing is that we have, different from Marx, more than two actors and more than one sector. Hence it is easier to look at exploitation from the point of view of the exploited without immediately distinguishing who gets the surplus. We can define a rate of appropriation (α) as the ratio of share in consumption over share in labor. This will be an inverse measure of exploitation. If the rate of appropriation is less than one, then the class is exploited.

$$\alpha_i = \frac{\lambda c^i / \sum c^j}{l_i / \sum l_j} = \frac{\lambda c^i}{l_i}$$

where c is the consumption vector and l_i is the total work performed by group i . The denominators of the first expression cancel because the value of the net output equals the total living labour by definition.

As we intend to measure the value of the goods consumed in abstract labor values, the numerator and denominator have the same dimension, hours of abstract labor.

An application: the time use survey in Austria 1992

Now we are in a position to apply our simple model to a real economy. This will be based on the time use study performed in Austria in March and September 1992 by the Austrian Statistical Office (Österreichisches Statistisches Zentralamt, ÖSTAT).³ The survey was voluntary and the rejection rate was at 53%, which left 25,233 observations.

³ International comparisons suggest that ACCs are relatively similar with respect to the gender division of labor. Hence Austria is as good an example as any other country, the results are certainly no special case. Next to purely patriotic reasons, Austria is chosen as country because I happen to be familiar with the data and their problems through some previous work (Stockhammer et al. 1997).

The survey was mostly performed in the form of a time use diary, where people wrote down their activities during a day. This is an important detail. Previous studies, in Austria as well as elsewhere, used interviews, which usually report less time worked in the household. Hence a direct comparison of the results with those from the 1981 study is unfortunately impossible (Gross 1995a, 1995b). Table 3 presents a summary of the time worked as paid work and in the household, for men and women. Further some distributional data, necessary for the calculations later, are reported.

Table 3

Time use of men and women in Austria 1992

hrs, minutes per day

	paid labor	household labor	median wage income
men	4,44	2,1	23359
women	2,14	5,3	16093

Functional income distribution in Austria 1992

wages in bio ATS	"profits"	wage share	f/m wage ratio
1091,83	543,34	66,77%	68,89%

source: ÖSTAT

notes: paid labour is without time spent to get to the workplace

data reported for people 19 and older

"profits" is "Einkommen aus Besitz und Unternehmung"

If we apply the formulas from above we get 6.97 and 12.34 as the respective labor values for the capitalist good and the household good. This gives us rates of appropriation of 0.89 for men and 0.8 for women. This means that, within the working classes, men are able to appropriate 89% of what they produce, whereas women appropriate 80%. As both appropriation rates are below 1 male and female workers are exploited, though women to a higher degree.

These results are interesting and certainly serve as an illustration of the applicability of the model discussed above. However, since many problems are still unsolved, the empirical findings have to be treated with caution.

Problems

Four major problems can be identified.

First, homogenous labor is assumed which means that the problem of how to compare household labour and wage labour is avoided. Second, no distinction between productive and unproductive labor made. This is particularly problematic since the category "wage labour" encompasses state activities which make up a significant portion of the formal economy in Austria. Third, it is assumed that all wage goods serve as inputs for the household production process. Fourth, it was assumed that the output of the domestic labour process is split evenly between men and women, i. e. the question of power and distribution within the family was entirely ignored.

However, it is worth noting that the latter assumptions are likely to introduce an upward bias into our estimation of the female rate of appropriation. If workers are allowed to consume capitalist commodities directly, men are likely to buy more of these since they earn higher incomes. Hence I would argue that, realizing the severe limitations of the simple model, the estimate of exploitation of women is unlikely to be overestimated.

Gender differential in capitalist exploitation

The reader will have noticed that we did not make use of the wage differential between male and female workers yet. In fact, in our model the magnitude of this differential makes no difference since all workers' income is used to buy inputs for household production, the output of which is split equally. (If part of the commodities were consumed directly, e.g. as a portion of the wage income, then the wage differential would of course matter.)

This problem, to me, seems not restricted to this particular model. Marxian Economics, I think, has more to offer in analyzing household production and domestic exploitation than it can help us understand female wage discrimination (with the notable exception of labor market segmentation theory). However, we can apply Marx' original rate of exploitation to male and female wage workers separately.

In this model the capitalist net output is split up between capitalists (K), male workers (m) and female workers (f). Further, let s be the wage share and r the ration of female wages to male wages, and W the male wages, then

$$l_m^K + l_f^K = (1 - s)(l_m^K + l_f^K) + W * l_m^K + Wr l_f^K$$

The right hand side is the total value performed by the workers, the left hand side consists of profits and the total wages of men and women, expressed in the male wage. Solving the equation gives us 0.74 for male wages and 0.51 for female wages. These are the rates of appropriation for the capitalist sector. They can be used straightforward to calculate the Marxian rate of exploitation

$$\mu = \frac{s}{v}; \alpha = \frac{v}{s + v} \Rightarrow \mu = \frac{1}{\alpha} - 1, \text{ where } \mu \text{ is the familiar Marxian rate of exploitation and } s \text{ and } v$$

denote surplus value and variable capital respectively. The respective values for men and women are 0.35 and 0.96. From the capitalist point of view, again, it is women who are more exploited than men.

(preliminary) conclusion

The purpose of this paper was to show how the concept of exploitation can be applied quantitatively to an economy that consists of two distinct but interwoven class processes. These two class processes were the capitalist and the domestic class process, where the former produces commodities and the latter goods that allow for the reproduction of the wage labourer and the domestic worker. Extending the labour theory of value to standardized production of goods, a simple model was developed that allowed the calculation of rates of exploitation for men and women. This framework was illustrated by application to the Austrian time use study 1992. This required some heroic assumptions like homogenous and productive labour and the even split of domestic goods between men and women. The empirical findings were that men are able to appropriate 89% of the value they produce and women 80%. Looking at the capitalist sector alone, the respective values are 74% and 51%. Thus, within the Marxian framework developed here, the feminist claim that women are more exploited than men has been confirmed.

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