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PEASANT SURPLUS UNDER INCOMPLETE MARKET PARTICIPATION

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INSTITUTO INTERAMERICANO DE COOPERACION PARA LA AGRICULTURA

San José, Costa Rica, Agosto de 1982

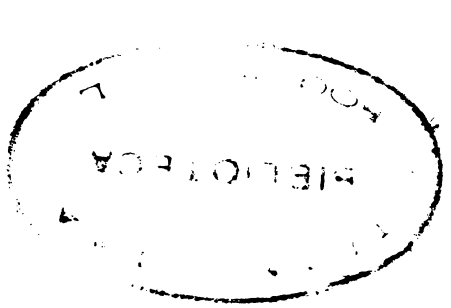
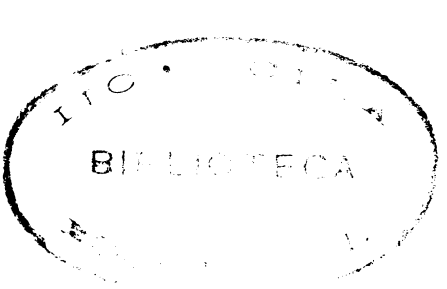

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TABLE OF CONTENTS

INTRODUCTION

The purpose of this paper is to study the impact on the measured surplus produced by agricultural enterprises of various kinds when different possible ways of evaluating the inputs and outputs are used. The possibility of not using market prices as weighing devices in aggregating the inputs and outputs arises when an enterprise does not participate fully in the market. This incomplete participation also raises the more complex issue whether certain inputs used should be considered costs at all.

This problem is considered an interesting one because of its bearing on the issue of the differentiation of the peasantry and the impact of technological change on this differentiation.

First, we must explain what we will mean by the concept of differentiation used throughout this paper. One understanding of the concept is class-differentiation; that is, the tendency for a mass of homogeneous peasants to proceed, under the motivation of competition for scarce land and other resources, to divide itself into proletarians at one end of the social spectrum and capitalists at the other, with semi-proletarians, and some peasants, remaining in the middle for varying lengths of time. Another, perhaps less long run or dynamic approach is income-differentiation, where one looks simply at trends

for the distribution of income to become more unequal over time. We will be concentrating on what we consider the more interesting, longer run aspect, that is, class-differentiation, though we may occasionally refer explicitly to income-differentiation. Thus, when we speak of differentiation it should be inferred that we refer to the class phenomenon, not to the income phenomenon.

We must now delimit the sorts of social and economic situations that are of interest to us, given that our basic interest is in the issue of differentiation. First, we are not interested in the problem of measuring the surplus in the enterprises of farmers belonging to societies where the market is not the principal means of resource allocation. It is not that measuring the surplus in these societies is a dull problem, or an easy one. As Gudeman has shown in his study of Panamanian peasants, the problem is interesting and by no means trivial. Instead, it seems to us that in such societies the competitive pressures that lead to differentiation are absent, so that if and when proletarianization or impoverishment takes place, it is some outside agency's politico-economic power that causes it, instead of a process internal to the peasantry itself. The nature of these processes has been described by many scientists, starting with Rosa Luxemburg. In societies where the market is not the main

mechanism for resource allocation competitive pressures are largely absent, and thus the surplus tends to be materialized not in commodities, but as voluntary leisure time (not unemployment), as Gudeman has shown. Since there is then no internally-induced differentiation, we exclude these societies from our field of inquiry, except in cases where knowledge of this limiting case can help enlighten us about the cases we are interested in.

Similarly, we exclude fully capitalist societies, where differentiation is complete and classes are polarized. In these cases, measurement of the surplus is beyond our interests, and more in the realm of studies on the concentration and centralization of capital, that is, industrial organization and the macro-dynamics of mature capitalist economies. We will, however, look at fully capitalist farms as a useful limiting case.

Thus, our area of interest is the type of social group which is between isolation from the market and complete market specialization, because in such groups is internal differentiation likely to occur.

Since the ultimate aim of this paper is to further the understanding of differentiation, we must specify the connection we see between studying differentiation and studying the various possible measures of surplus. Clearly, differentiation is a function of the differential

capacity of peasants to accumulate means of production. Some peasants accumulate more quickly than others. This differential ability is distributed differentially across peasants: some are more ruthless, some are more efficient managers, some may be more intelligent. Any of these factors, and specially a combination of them is likely to lead to a better pre-disposition for accumulation if the institutional structure favors it. If to this we add the self evident fact that some peasants are luckier than others, or, to put it differently, are better situated in the random distribution of factors such as hail, flood, animal and crop diseases, etc, then the tendencies to differential accumulation are accentuated. Now, as long as there are economies of scale, or at least no diseconomies; or, if there are diseconomies in the actual production process, but these are outweighed by economies of scale in marketing and access to credit, then it is clear that the process of differential accumulation is self-reinforcing. Once a farmer has become larger than the others through more ruthlessness, more intelligence, or more luck, then it will be easier still in the next round to become even larger still. Given the prevalence of private individual property of scarce resources, and therefore the potential commoditization of labor power, this predisposition to differential accumulation manifests itself in actual social differentiation, where a group becomes

proletarianized. Of course, if the possibilities for employment in urban areas are much better than in the countryside because of vigorous industrial growth, laborers might migrate, and thus the differentiation might not become manifest in the countryside itself. While historically important, this case can not be dealt with in this paper.

Now, what is accumulated is the surplus, and this is therefore the connection we sought between surplus and differentiation. The differential ability to accumulate which we have discussed is based, at a first instance, on a differential ability to not only generate (though this is important), but also to retain the accumulable surplus. Thus, the definition of surplus we are working with is "accumulable funds", since this is the definition most useful to the problematic of differentiation. We emphasize that we are not working with a notion of actual accumulation, since the surplus can and often is consumed rather than accumulated. In other words, we are concerned with potential investment rather than actual investment. It seems clear that to fully understand differentiation in any specific region, savings and investment behavior should also be studied. Typically, rich farmers will invest less than the surplus, and poor ones can hardly invest more than the surplus, so the rate of differentia-

tion will generally be lower than would be predicted by merely looking at the distribution of the surplus.

The crux of our problem is that different ways to measure the surplus will yield different distributions of this surplus, and therefore different predictions about the rate of differentiation and the factors influencing it. For example, the decision to value family labor at a rate less than the market wage will cause the surplus distribution to be less skewed away from the heavy users of family labor than would be the case if family labor were valued at the going market wage. In this case, the predicted rate of differentiation would be less than if the full market wage is used, for the surplus distribution would appear to be more even: the small peasants would appear to have more potential for accumulation. To take another example closer to the issue of technology: the introduction of a productivity-increasing but labor-intensive technology would seem more favorable to peasants, and therefore more of a retardant (or less of an accelerator) of differentiation, if family labor is valued at less than the market wage rate, because the extra surplus generated as the difference between the increased product and the increased labor cost will appear larger for the farmers who use much family labor if this family labor is valued at less than the market wage rate. These

are then the issues we will now discuss in detail.

MEASURES OF PEASANT SURPLUS

There are two main polar schools of thought, and one which bridges the two, whose writings can be tapped for ideas on the issue of surplus measurement under conditions of incomplete participation in the market. Naturally, however, prior to discussing how to measure surplus when participation in the market is incomplete, we have to briefly discuss the idea of surplus measurement in general, for each case. The most important neoclassical literature in the area of peasant economics is concerned with the issue of resource allocation, and thus, with efficiency in resource allocation. In fact, in order to derive ideas about surplus measurement from this school we will have to go beyond the intentions of most of the writers in this school, while attempting to stay within their general (marginalist) style of reasoning. That is, we will have to use their measures of efficiency as measures of surplus.

The Marxist tradition, on the other hand, has been centrally concerned with the issue of surplus generation, transfer, and class-differentiation, and only peripherally with resource allocation. All we need do here is to build upon the basic theory, extending it to the relatively unknown territory we are interested in.

As a bridge between the two groups, we have the Chayanovian school, which utilizes marginalist reasoning, but is not concerned exclusively with the issue of resource allocation. Indeed, the problem which motivated Chayanov's theoretical writings was the idea that the peasant's surplus can not be measured in the same way as the capitalist's. However, he was also concerned with the neoclassical issue of resource allocation, and, in fact, much of the neoclassical literature on peasant issues has its roots directly in Chayanov's writings. (See Sen, Nakajima.)

Chayanovian School.

Before proceeding to discuss Chayanov, it is essential to point out, and show, that his writings are interesting largely from a methodological point of view, and that to transpose his conclusions about peasant behavior and the dynamics of peasant groups to any of the immense majority of situations in Latin American today would be unwise.

First, it is clear that Chayanov's writings do not apply to farmers who hire labor. Moreover, he makes it quite explicit that his writings apply only to farm families inserted in communities where such a practice is altogether uncommon or even non-existent. Thus, he states that "most peasant farms in Russia, China, India, and most

non-European and even many European states are unacquainted with the categories of wage labor and wages" (Chayanov, p. 1, our emphasis). Again, "there is no social phenomenon of wages" (p. 5, our emphasis). Second, his writings apply to situations where there is either a surplus of land or land is allocated not via the market but via the redistributive commune (p. 66). One of the consequences, as we will see, is that the "intensity of work in the farm is less than if all the labor power were used fully" (p. 76). This is clearly a situation of voluntary un- or subemployment in a social formation where land is either not at all scarce or allocated communally and the labor market does not exist. Evidently, conditions are very different in Latin America today. Hence, to apply any of the Chayanovian conclusions to Latin America without careful qualifications and modifications would be a serious mistake.[1] In this social context there can be no social differentiation: the size of farms is ultimately limited by the size of families: the farms can not expand beyond the families' ability to provide labor, for there is no labor market. In any case, land is controlled by communal authorities who would presumably allocate more

[1]We must admit that Chayanov makes some comments that might lead one to believe that the lack of hired labor on the farm or sale of family labor to other farms is more a matter of individual choice than institutional limitation (see p. 91).

land to a family only to the extent that the family needed it to satisfy its necessities, but not if the family were to produce a large surplus.

What of the surplus?[2] Chayanov states there can be no surplus formula such as there is in capitalism, where the net profit, NP, is given by

$$NP = GI - ME - WC$$

where

GI = gross income
ME = materials expenditure
WC = wage costs

All the elements of this formula are quantities expressed in monetary units. For a peasant family only gross income and materials costs can be expressed in monetary units. Since the peasant farm pays no salaries, the labor expenditure can only be thought of in labor-days, which are incommensurable with gross income. A kind of surplus, S_1, can be thought of as

$$S_1 = GI - ME - F,$$

where F = monetarized subjective valuation of family labor effort.

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[2]We will not discuss the Chayanovian model of resource allocation and income determination, as these are well known and outside the main area of interest. For a modern version, see Nakajima.

However, this does not in any way measure the potential funds that could be used for accumulation by a peasant family, should it wish to accumulate means of production. (Naturally, this accumulation could take only the form of purchase of implements, as hiring of labor power is ruled out.) A measure of the maximum funds available for accumulation, S_2 would be given by the expression

$$S_2 = GI - ME - M$$

where M = minimum income necessary for survival.

This concept is valid within the Chayanovian framework, since an idea similar to M is expressed by Chayanov as "the sum of material benefits absolutely necessary for the family's survival" (p. 53).

In any case, the Chayanovian model is uninteresting, except as a sort of limit, because social differentiation is blocked by definition or at least considered altogether unimportant compared to what Chayanov called "demographic differentiation". This differentiation is entirely an income concept. The notion of demographic differentiation depends on the idea that the life cycles of the various families in a given area do not coincide. Since the amount of land exploited by a family and the total income produced by that family depend on the worker-to-consumer ratio, some farms at any given moment in a certain village

will look like "rich" farms, others will look poor, but only because they are at different stages in their family life cycles. Thus the inequality that one observes at any given point in time is not necessarily cumulative.

The Neoclassical School.

The writings of the neoclassical school on peasant issues have been largely concerned with efficiency, where efficiency must be understood in the context of resource allocation. For example, to take one of the early well-known scholars, Schultz was concerned largely with whether peasants were rational in that they used inputs to the point where their marginal product value was equal to their market price. If they did not, production could be increased simply by altering the ratios in which the inputs are used, without increasing the total amount spent on inputs, and the peasants could be called inefficient if they did not do so.

The institutional assumptions of the neoclassical models include the existence of a market for goods, which is no different from the Chayanovian case, but also of a full market for labor and land, which is quite different from the Chayanovian case. Here, the possibility that the family might hire in or out a certain amount of labor power is allowed.

The issue of surplus measurement under incomplete participation arises, for the neoclassicals, in several contexts. We will give two examples. Sen (1966) reports that a study of Indian agriculture "computed 'profits' of different kinds of enterprises by imputing to family labor the market wage rate as a shadow labor cost, and it came to the frightening conclusion that much of Indian agriculture was being run on 'losses'." (pp. 443-444). Sen then explains that this "loss" vanishes if labor use is evaluated at less than the market wage rate. Berry and Cline, in their study on the effect of agrarian structure on productivity compare the efficiency of small vs. large enterprises in various countries. In doing this, they calculate indices of total factor productivity,

$$\frac{\sum_i p_i q_i}{\sum_j w_j x_j} = \frac{TR}{TC} = 1 + r$$

where

p_i, w_j are prices of outputs and inputs
q_i, x_j are quantities of outputs and inputs
TR = total revenue
TC = total costs
r = ratio of profits over costs.

They then compare these indices of productivity for various size categories of farms, and come to the politically important conclusion that if, or especially when, the

price of family labor is assumed to be zero or at least much below the market wage, small farms are more efficient than large ones. From this, they argue that a completely egalitarian land reform would lead to not only a more just situation than the current one, but also to a more efficient one.

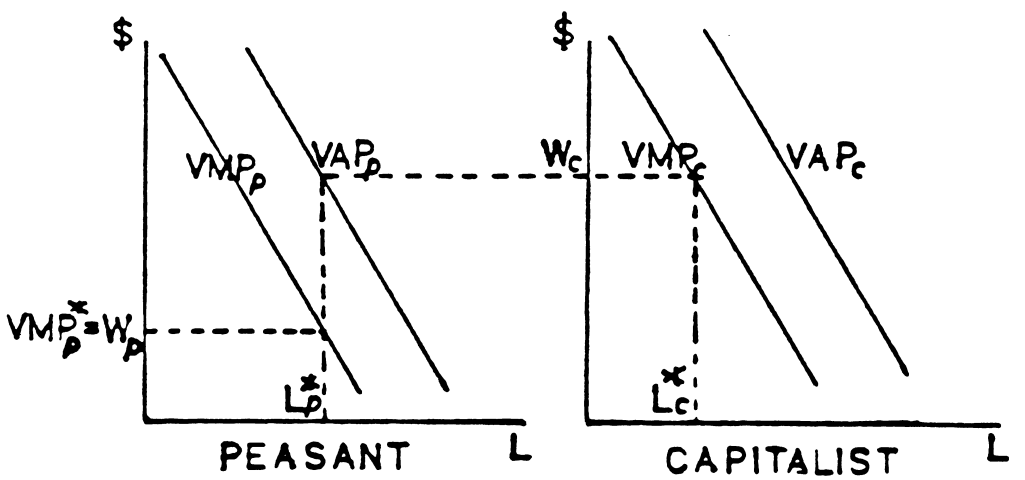
Thus, the "surplus" or "profits" generated by small farms appear much greater when a wage less than the market wage is used to impute a cost to labor. But how can this be justified? The argument hinges on the notion of dual labor markets, and the justification turns out to be persuasive, but only if we are interested in allocative efficiency, and not in differentiation.

The basic notion is that the "real cost" of family labor on the peasant farm is lower than on the capitalist farms, who must pay the market wage. This real cost to the peasant farm is only the marginal product of labor on the peasant farm. The most common reason given for this marginal product being lower than the market wage paid in the capitalist sector is based on the assumption that the income produced by the peasant enterprise is divided more or less equally among all family members (or at least among all the members who might be fit to also participate in the labor market), <u>but</u> that the decision to migrate or to simply work in the capitalist sector is an individual

one.[3] In other words, the workers are "paid", or "pay themselves" the average product of labor, but when they leave, the "loss" to the family is the marginal product of labor. Since the average product of labor is therefore the individuals "income" on the family farm, the wage in the capitalist sector must be equal to at least that amount, if workers are to be lured away from the peasant sector. If the family as a whole made the decision as to whether specific members were to migrate, then the wage paid by the capitalists in order to lure labor away from the peasant sector need be only slightly higher than the marginal product of labor on the peasant farm, and thus the cost of labor to the peasant farm would be the same as for the capitalist farm. In fact, since (according to the neoclassical assumption) the decision to work in the capitalist sector is made individually, the loss to the peasant farm is the marginal product of labor but the wage in the capitalist sector is at least as high as the average product of labor. Since in the relevant ranges of economic activity for any enterprise the marginal product of any factor is always less than its average product, it follows that the real cost of labor to the peasant family must be less than the real cost of labor to the capitalist

[3] It is rather odd to assume that the family shares income equally, but that the decision to migrate is made individually. It is more reasonable to assume that both decisions are made collectively.

farmer. The following diagram illustrates the processes at work. It is drawn under the assumption that the peasant and capitalist farms are the same in every respect except that the capitalist farm hires labor power.[4] The peasant family's optimum level of labor use is L_p^*. At that point, the value of the average product is VAP_p^*, and so the wage for the capitalist sector becomes w_c. The capitalists' profit maximizing behavior leads to an optimum level of labor use $L_c^* < L_p^*$. The "wage" that applies to the peasant sector, however, is the value of marginal pro-



[4]Loosening these restrictions, for example, by assuming capitalists have access to more credit, or more advanced technology, does not change the wage-gap argument.

duct, VMP_p^*, which is the real cost, in terms of production foregone, that the family faces if one of its members decides to work in the capitalist sector. For this reason the peasant farm's rational level of labor use is higher than the capitalist, that is, $L_c^* < L_p^*$, which implies, in turn, that output per unit of land is lower in the capitalist farm, all other things being equal.

There are other reasons why the value of the marginal product of labor on the peasant farm, which is its real labor cost, could be below the market rate, even in cases where the decision to have a family member work in the capitalist sector is taken jointly by the family. In typical conditions in the Third World, the supply of labor is so great relative to demand that the operation of a typically free market would require a wage below or barely above the biological subsistence minimum. Thus, the collective action of workers, or the state sector, would lead to a market wage greater than the "opportunity cost" of labor. Another factor, often working in conjunction with the collective action of laborers or the state, is that at the institutionally defined market wage rate there will tend to be labor underemployment. Therefore, the wage that the peasant family perceives and subjectively sets VMP_l equal to is not the market wage w, but ew, where e is the rate of employment, or a proxy for the probability of

finding employment outside the family farm. In other words, ew can thus be thought of as the "expected wage" in the capitalist sector. If this is what peasants use in calculating the opportunity cost of labor, then it will evidently be lower than the wage the capitalists pay, often by as much as 30%, if one assumes that the rate of unemployment in the rural sector in Latin America is around this figure (see Emilio Klein).

The argument then follows that the reason peasants use so much labor is that they (rationally) perceive family labor as being relatively cheap. Given the high level of labor use, because it is cheaper than for the capitalist sector, it follows that if we assume that labor costs peasants as much as it costs the capitalists, the peasant enterprise appears to be making negative profits. If it did cost them as much as the market wage would indicate, then peasants would simply use less labor, and therefore have lower costs and greater profits.

But how are we to evaluate the peasant surplus empirically, under this framework? In other words, precisely what price would we use to evaluate the family labor? This depends on what one believes, or knows from empirical evidence, are the sources of labor market dualism. If one assumes that it is the family's decision whether or not to have a member work in the capitalist sector (or at least

that the family has veto power over the decision to go or stay), then the marginal product of labor in the peasant farm, that is, the real cost of labor to the family enterprise would be e(w - t), where t is transportation cost involved in migration. These figures can be readily estimated either from published data or field observation.

If, on the other hand, we believe that there is a dichotomy within the family unit, so that the output is shared but labor market decisions are not, or if one assumes that there is a psychological aversion toward selling labor-power, then the problem of estimating the actual cost of family labor is far more difficult. The "proletarianization" factor can not be directly estimated, for it depends essentially on subjective factors, so we can not take the market wage as above and simply adjust it by this factor to get the shadow wage. Indeed, it may be necessary to estimate production functions for peasant enterprises econometrically, and then derive the marginal value curves, or possibly estimate value of marginal product curves such as those in the diagram directly using linear programming exercises for the peasant farm. Then one would see what the value of the marginal product of labor is at the observed levels of labor power use. This then can be used as the effective labor cost perceived by the peasant family.

Adjusting the wage peasants "pay themselves" in these many ways naturally leads to the conclusion that peasant enterprises are actually "profitable" or "efficient", even more so than capitalist ones. It is clear that if one is interested, for whatever reason, (say, to defend land reform of an individualistic nature, or possibly to argue against Leninist positions on the peasant issue) in showing that the peasant farms are efficient, the greater one assumes the gap between the "real cost" of labor to the peasant farm and its market cost to the capitalist, the more efficient the peasants can be made to seem. That is, the greater the share of family labor in total labor use, the more the estimation of total cost will be reduced when the assumed cost of family labor is reduced to its "real" cost as opposed to market value. Thus, whoever is interested in making peasants seem efficient would normally assume a real cost of peasant labor as low as possible and this can best be achieved through the assumption that the wage the capitalist sector has to pay is somewhat higher than the average product of labor in the peasant sector, while the real cost ("shadow wage") of labor in the peasant sector is only its marginal product. This assumption, in turn, depends on the prior assertion that families share their product more or less on egalitarian lines, but that the decision whether or not to work in the capitalist sector is made individually. Indeed, this odd

assumption is quite essential to the extreme position on the shadow wage rate being very low.[5] Nevertheless, the other factors (unemployment, transportation costs, and aversion to proletarian employment.)[6] seem real enough so that we would agree that for evaluating efficiency in the context of resource allocation a wage lower than the monetary wage prevalent in the market should be imputed to family labor.

It is extremely important to note that the validity of these adjustments apply only to resource allocation problems. Once we deal with the issue of differentiation explicitly, this procedure is not necessarily valid. Take, for example, the case where the market wage is higher than the marginal product of labor in the peasant sector because of collective, state, or traditional pressures to keep the wage high enough so that those depending on it can subsist at some minimum acceptable standard. In that case, using the marginal product of labor as the "real cost" of labor is doing precisely what Lenin described as confusing peasant efficiency with peasant starvation (Lenin, p. 27). Evidently, starving peasants can be efficient in the neoclassical sense; that is, they can manage their resources so as to get the most that the

[5]We have no empirical information that refutes this assumption; we merely point out that on a priori grounds it seems perhaps contrived to produce the desired result.

[6]See Berry and Cline.

technology and the price structure will allow. But peasants are by definition not efficient in a differentiation context if indeed they are starving; that is, they are not more capable of survival than the capitalists are.

The Marxist School.

Most Marxists differ from the Chayanovians in that they assume that capitalist institutions are dominant through all sectors of modern society. Certainly this is the case in most of Latin America, with exceptions that are unimportant from either the production or population points of view. The agriculturally important areas, such as the Argentinian plains, Southern Brazil, Northwest Mexico, the Cauca Valley in Colombia, the coastal lowlands in the Caribbean basin, are all almost fully capitalist, and represent much of the agricultural output of the region. Thus, from the Marxist point of view, the study of peasant surplus generation and transfer is immediately concerned with social issues such as differentiation, instead of strictly economic ones such as efficiency.

The differences with the neoclassical school are also profound and well known. We will only point out the ones that seem important in this context. We have already explained that Marxist scholars are more concerned with income transfers and differentiation than with efficiency, so that this difference with the Chayanovians is also a

difference with the neoclassicals.

The Marxist approach to calculating the surplus in peasant societies has not yet attained an analytical level conducive to empirical research on class-differentiation. In fact, there is little theoretical research or consensus on how to estimate the economic surplus in a peasant enterprise with incomplete market participation.[7] Kula (1976), for example, who is concerned with peasant economic stability, and thus peasant differentiation, forcibly argues in favor of the dual labor market accounting procedure, according to which family labor is valued at a rate lower than the prevailing wage rate in nearby markets. He argues that wherever there is incomplete market connection, and exchange is largely in kind, a balance-sheet of a peasant enterprise drawn according to market prices has generally resulted in deficits (Kula, 1976, p. 41; see also Sen, 1966; and Bartra, 1974).

However, Kula finds this generally observed peasant deficit an absurd result, since a peasant economy would exhibit no stability under such adverse conditions. Instead, he argues that such deficits are largely fictitious, resulting from a misconceived application of capitalist accounting norms to conditions where the producer

[7] In fact, the main aim of this paper is to help develop the theoretical framework necessary for rigorous empirical studies of surplus measurement under these conditions.

does not generally react to market (or price) incentives (Kula, 1976, pp. 40-44). In this way, the existence of a peasant surplus ought not be denied on theoretical grounds, and its existence, just as the existence of a deficit, is likely to induce class-differentiation, even if market relations are not pervasive.

Bartra, on the other hand, follows the formalist procedure of valuing family labor according to the legal wage rate. It is not surprising, therefore, that in his study of Mexican agriculture certain groups of enterprises show a deficit in their income accounts (Bartra, 1974, pp. 38-39). In this context, it is not justified to identify the peasant economy with those enterprises which obtain a deficit in their income statement. This, in turn, calls for an explicitly stated connection between the existence of a surplus or deficit and class-differentiation, implying that the specific accounting procedure being used must be justified on theoretical grounds.

But an interesting approach to estimate the economic surplus in a peasant economy has been proposed by Gudeman (1978). Although not concerned with class or income differentiation, Gudeman utilizes a method of estimating the economic surplus that is in line with the economic tradition revived by Sraffa. This method amounts to calculation of the surplus for individual products in physical

units, and aggregating the individual surpluses without making references to market prices. To accomplish this objective, Gudeman substitutes prices (as aggregation weights) by product conversion factors which are equivalent to product weight units divided by labor expenditure units, that is, physical output per unit of labor input (Gudeman, 1978, pp. 76-89).

However, perhaps with the exception of Kula's study of the Polish peasantry, what is crucially missing in recent Marxist research on class-differentiation is a discussion of how the economic surplus ought to be estimated under conditions of incomplete market participation. Equally missing is a discussion of the relationship of the existence of an economic surplus or deficit to class-differentiation, or more particularly, the stability of the peasant economy. (On this, see Roseberry, 1976). Therefore, as we proceed we outline specific suggestions on how to deal with the related problems of surplus estimation and class-differentiation within a peasant economy.

The ideal capitalist farm against which we will compare the peasant farms participates completely in the market: all material circulating inputs such as seeds, fertilizers, etc, are purchased in the market; fixed inputs are also purchased on the market and depreciate just as fixed inputs anywhere else in the capitalist econ-

omy; the land is rented on a periodic basis; the labor power, with the possible exception of high-level management, is all hired at the market wage; the working capital is borrowed in the capital markets at the typical rates of interest for such enterprises. In any case, if we assume, as is reasonable, that the capitalist farmer is a profit maximizer, then, barring ignorance on his part, he will value all costs at the market rates, even if the inputs are not purchased on the market. In this case the accumulable surplus will simply be total revenue minus total costs. These funds will be accumulable funds precisely because the farmer has valued all costs at market prices: the mere reproduction of the enterprise is assured if revenues exactly cover costs when the costs are evaluated at market prices. Thus, anything left over can be used for accumulation.

The case of the peasant farm, which uses many inputs which are not purchased on the market is far more complex and interesting from our point of view. We will take all factors of production and even outputs and evaluate the impact on the measured surplus of valuing the self-supplied factors at less than they go for on the market.

We should point out again that the notion of surplus we are working is that part of the income which can be used to accumulate means of production, and whose distri-

bution is therefore a critical factor in determining the rate of differentiation.

Labor Inputs.

One of the most important factors is labor power. Clearly, when a peasant hires labor on the market, this cost should be calculated just as it is for the capitalist farmer. What differences in the predicted rate of differentiation are introduced by various possible ways to impute a value to family labor in calculating the costs of a peasant enterprise? What is the correct way to do so in order to get a good or "best" predictor of the rate of differentiation?

Clearly, if the supply of labor power on the capitalist market is so great relative to the demand that the market wage for fully proletarianized workers sinks to a socially and/or biologically determined minimum, then the labor power used by the peasant family must all be valued at this level. In the short run, this market wage may be adjusted by the rate of employment, since this is the wage effectively perceived by the family when making its decisions. But in the long run we must use the market wage itself. The reasoning is as follows. If the family farm cannot produce sufficient income per member (net of expenditure on implements, land, etc.) to match the rate of remuneration in the capitalist sector, adjusted by the

probability of finding employment, then family members, either collectively or individually, will find it advantageous to seek full-time employment in the capitalist sector. This will contribute to the rate of proletarianization, exacerbating differentiation. In the long run, the relevant rate must be the full wage paid in the capitalist sector, whenever this wage is the minimum necessary for survival, without adjustment for the probability of employment. The reason for this is that even if there is so much unemployment that peasants are not motivated to migrate, in the long run, disease, infant mortality, and debt with which to cover consumption needs will either force population to decline or ruin the farms as peasants attempt to use their farms in order to merely survive. That is, they will "mine" their farms economically, and thus compromise their survival as peasants in order to insure their biological survival. This is actually only a long run, Malthusian scenario, and likely only in the most impoverished and overpopulated regions, such as perhaps Haiti.

But charging a minimum wage to the family labor actually used by the peasant farm for production (so as to cover the "necessary" consumption of this labor) does not really give us a true measure of the accumulable surplus. For, after all, one of the important differences between a

peasant farm and a capitalist one is that the peasant farm is a family farm. Thus, we must charge as a labor cost not only the wage going to the labor actually used. Instead, all of the family's necessary consumption[8] should be charged as a labor bill, regardless of the actual amount worked[9]. In a sense, therefore, the calculation of labor costs are greatly simplified.

Since the peasant farm is a family enterprise, the wage bill which should be charged to it will be partly offset by an income from labor sales activities, which could appear in the income accounts as the sale of an output.

In conclusion, for the peasant, the wage bill is fairly independent of agricultural production, and rather more dependent on family size and age composition, being counted simply as a lump sum equal to necessary consumption.

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[8] How to empirically estimate necessary consumption is another issue altogether, which we address in the last section of the paper.

[9] This is true unless one assumes that necessary consumption increases significantly if actual labor is performed. In this case, the total wage bill can be adjusted as required, so the total wage bill equals the necessary consumption of those actually working plus that of the idle, but who need to consume nevertheless.

Another important factor, frequently ignored both by neoclassical and even Marxist economists is the issue of land rent. The capitalist, we have assumed, rents land on the market by paying the periodic rent each cropping season or each year. If he does not include the land in his cost calculations, he will not survive more than a year or two, depending on the leniency of those who lend him the working capital. But a peasant family often does not participate in the market in order to gain access to land. Often, for example, the land is inherited. If possession by the previous generation was not legal but in any case effectively recognized by the community, such recognition will often pass on to the next generation. But if land is at all scarce in the society in question, the new generation will not be able to acquire extra land simply by expropriating it or by squatting on government land, as was possible in Latin America as recent as thirty years back. Now, the question is, should any value be imputed to the use of such inherited (either de facto or de jure) land by the peasant family? What would be the consequences of not imputing any value to land, as is often done? Evidently, the part of rent which is a payment for any improvements on the land has to be imputed even in the case of inherited land, for otherwise the actual physical productivity of the farm would decline over time. Improvements, such as irrigation ditches, have a real

initial cost, and, in any case, must be maintained. One component of the minimum rent imputed for these improvements should be that which, when capitalized over their useful life at the adequate rate of discount, is equal to the cost of the improvement. The other component should be the average cost of maintaining these improvements over the period for which the surplus calculations are being made. The sum of these two components is a rent which should be imputed to peasant farms even if the land is inherited. If the improvements themselves used factors, such as family labor, which were not purchased on the market, then these inputs should be valued just as if they were being used for agricultural production.

There is another component of rent whose imputation to the use of inherited land might seem more debatable.[10] This is the component corresponding to the Marxist concepts of absolute and differential rent. In most cases this would by far be the most important component. We would claim that the cost imputed to the land should equal the market rate of rent (holding land quality constant) with an adjustment by a factor equal to

$$(n-1)/n$$

where n = number of inheritors.

[10] We realize that this last section is likely to be somewhat controversial, but we think that these issues at least needed to be raised and debated.

Thus,

$$r_p = r_m(n-1)/n$$

where

r_p = peasant's rent
r_m = market rent[11]

The reasoning behind this is that otherwise the original farm will become fractioned at inheritance. We can imagine that the imputation of a cost to the land will permit a peasant farmer to pay back a loan used to buy the land from his or her brothers and sisters at the moment of inheritance and therefore prevent the farm from being fractioned. If the peasant farms become fractioned, and the capitalist ones do not, then the rate of differentiation of rural properties will have increased. Social differentiation, however remains largely unaffected. Alternatively, we can imagine that by charging this cost to the land, a father or mother could set up a fund that would be used to justly compensate, according to market rates, n-1 sons or daughters that did not inherit so that one son or daughter could inherit the farm intact. But what does fractioning of the property have to do with differentia-

[11] This assumes that the price of land is equal to the discounted value of the rent stream. If this is not the case, the peasant rent is simply the yearly cost of setting up a fund necessary to prevent fractioning of the farm, for example, the rent might be the amortization payments on a debt equal to the value of the land.

tion? That is, why does failing to account for the rent of the land in the peasant's cost calculation lead to an overoptimistic appraisal of their probabilities of survival? The essential hypothesis here is that the probability of survival of a large unit is greater than that of a small one. In some crops, such as high-yielding wheat or irrigated rice, cotton, etc., there may be actual economies of scale in the production process itself. But in most crops there are external pecuniary economies that the farms can capture only if they are large. These external pecuniary economies include price premiums for large levels of output, as well as volume discounts for big input purchases. Perhaps the most important of these advantages is the ease with which large farms can obtain credit, and the low rates they tend to pay on this credit. In fact, in situations like those typical in Latin America over most of the past 20 years, where real rates of interest have been negative, non-market credit allocation mechanisms appear, which discriminate even more than the market itself against small farmers, and subsidize the large ones where the market would not. These economies inherent in largeness we are assuming outweigh whatever, if any, diseconomies accrue to largeness in the production process itself. Thus, the fate of farms that become more and more fractioned is to eventually become too small to survive as effective production units. And the greater

the degree of fractioning, the more the probability of not surviving increases, in greater than constant proportion, since even the most diehard defenders of the efficiency of small farmers will probably concede that there comes a point when small size becomes an obstacle to the generation and retention of an investible surplus. All we have said so far affects rural property differentiation more than social differentiation itself, since we are talking about a differentiation of the size of farms. Whether an individual inherits a fraction of land or is bought off by a brother, thereby effectively inheriting a sum of cash, would not seem to affect his or her social status.

Another reason, however, why peasant enterprises working on inherited lands should be charged a land rent depends on whether there is a capitalist agricultural sector where the producers in fact account for the cost of land, and whether this sector dominates in the sense that its costs of production other than land allow it to outcompete the peasants. If this is the case, then not charging the peasants a land rent will tend to underestimate the tendency of the capitalists to outbid the peasants and buy them out, thereby proletarianizing them. In other words, if the social groups with whom the peasants are in competition do account for land costs, and if these social groups are in fact effective competitors,

then they will tend to be able to purchase land away from the peasants, and this reality will not be perceived by a system of accounting which does not charge peasant enterprises a land rent. The picture of competitiveness which one would derive from the appearance of a surplus in the peasant enterprises when land costs are not taken into account would be false precisely in that it would overestimate the capacity of peasants as a whole to retain the land.

We can now conclude that failing to include the market rate of rental in peasant production costs, with the minor adjustment we have suggested, will yield too low a prediction of the rate of differentiation. A prediction about rates of differentiation which is based on the distribution of a measure of surplus which does not consider land as a source of cost would, we can conclude, tend to grossly overestimate the long run stability of peasant groups, as it would tend to underestimate the intergenerational fractioning of peasant enterprises. We emphasize that this is a long run phenomenon, since only intergenerational fractioning is at work here. Even in the long run, however, we feel accounting for land rent is extremely important in practice. Even though there have not been many empirical studies of the causes of differentiation in Latin America, it is likely that the differen-

tial fractioning of what were in the past homogeneously medium-sized peasant farms has contributed significantly to differentiation.

Other Factors.

The case of the other factors besides labor and land is quantitatively insignificant in peasant societies, where often upward of 90% of the cost of production is accounted for by labor and land. It is evident that tools should be evaluated at what they would cost on the market, for as the tools are used they run down, and if the farm is to reproduce itself, it must be able to charge the replacement of its tools to its costs. Alternatively, but only if the tools are made by the family, the cost imputed to the use of the tools could be a charge for the amount of labor their manufacture requires. Thus, the depreciation of fixed assets must be accounted for, but in the peasant farm these charges must be actual physical depreciation, which can be estimated via any of the conventional methods, such as straight-line depreciation.

Outputs.

There seems to be little dispute about the valuation of outputs consumed by the family. Everyone seems to agree that the imputed value of the output consumed by the family should be considered part of gross income. It should be clear that failing to consider own consumption

as part of income would tend to underestimate the surplus. Necessary consumption has already been accounted for in the cost side of the account, so whatever is consumed by the farmer could be turned into accumulable funds if sold on the market. This issue does highlight the fact that what we are interested in is not actual, materialized surplus, but potential savings. The capitalist equivalent would be profits before distribution to the stockholders.

Outputs other than agricultural products need to be considered, of course. The most important of these for peasant farms would be the sale of labor power to other farms. It is important to count this as an income because we are counting all of the necessary consumption of the family as a cost. For the capitalist farms, there may be important incomes from the sale or rental of factors such as tractor power, land, etc. These all need to be counted as incomes, since their depreciation has been included as costs.

CONCLUSIONS AND EMPIRICAL APPLICABILITY.

This paper has aimed at developing a theoretical framework for the accounting system for a peasant farm in a capitalist social formations, paying attention to the impact of various possible types of accounting on the measured surplus and the impact of these variations of measured surplus on predictions about the rate of

differentiation. Any attempt to empirically apply these concepts could be the topic of another, perhaps longer paper. In any case, we would like to summarize our results and conclude by showing that these theoretical developments can be used as guidelines for empirical research; at the same time, we want to give some indications as to how this research can be done. We are assuming the existence of a farm management survey (containing the information we need) and good national statistics on economic indicators. Since we believe that the more correct formulation is the one we have developed as the Marxist one (in the sense that it is concerned more with social differentiation than with resource allocation), we will concentrate on this one. According to the criteria set forth above, the surplus, S, for any enterprise is simply

$$S = GI - ME - LC - DC - KC$$

where

GI = gross income
ME = materials expenditure
LC = labor costs
DC = land costs
KC = capital costs

Gross income is easy to calculate. In fact, for the capitalist enterprise it need not be "calculated"; it is simply reported. For the peasant enterprise, it must

include the own consumption, evaluated at the farm gate price. Actual own consumption has to be counted as an income because necessary consumption has been counted as a cost. Income must also include the sale of labor power, tractor rental, land rental, and the sale and rental of all services to other farms and non-agricultural businesses, as well as remittances from relatives living abroad or in the city. Finally, various transfers from the government must also be counted as income, although in most of Latin America these are likely to be quantitatively insignificant.

Materials expenditures represent no major problem. For capitalist farms, and for whatever inputs the peasant buys on the market, they must be valued at market prices. If the peasant produces some of the inputs at home (manure, for example, is an extremely important one, at least in some countries), then the labor used in their production must be valued as the labor entering the production of the agricultural commodities, as explained above and summarized below.

Labor costs are the most delicate category, needing the most difficult empirical work. Unfortunately, they are also the most important in a quantitative sense. For the peasant farms, we have stated above that the labor costs consist of necessary consumption charged as a lump

sum. What the level of necessary consumption should be, however, in a given location, will not be immediately evident from casual empirical observation. It does not seem reasonable to look at average consumption in an area at a given point in time as necessary consumption, unless one knows that the peasants in question are indeed engaged in simple reproduction. Otherwise, one runs the risk of taking the observed levels of consumption as sufficient for simple reproduction, when we know that in many areas of Latin America living standards have actually been decreasing and peasantries are in fact engaged in negative reproduction. Several possibilities appear reasonable as ways to estimate necessary consumption. All these possibilities derive from the concept of necessary consumption itself, as the level of consumption which will permit the long term reproduction of the family unit at a "historically and morally" determined level. One possibility is to actually ask each peasant in a sample survey to estimate in some detail what a necessary consumption basket would include. Obviously, this question has to be very well-phrased and carefully tested, and the interviewer must be a person of broad experience as well as particularly familiarized with local customs. This possibility is open to the criticism that the peasants would idealize the contents of this basket, and thus list a series of items which would in fact permit expanded reproduction.

Thus, a second possibility is to study several communities and identify various families as in fact engaged in simple reproduction, by looking at their investment histories, and then make measurements of their consumption levels. A third possibility is to take as necessary consumption the average income of fully proletarianized workers who have no possibility of meeting their consumption needs through the labor of their relatives on the family plot. Unfortunately, such workers are quite uncommon in most areas where there are also large peasant populations. Most fully proletarianized workers are found in large groups, near plantations, and far away from typical peasant populations, so that the cost of simple reproduction may be quite different. A fourth possibility would be to simply take a level of consumption equal to the biological minimum amounts of food, clothing, shelter, and medical care. Each one of these methods has its flaws, but using them all together in a judicious way should produce better results than merely taking average consumption as being representative of necessary consumption. Simply taking the average as a proxy for necessary would generally lead to an overestimate of accumulable funds in the case of the poor and typically an underestimate in the case of the rich, so that the rate of differentiation would tend to be under-predicted, since malnutrition, infant mortality, and other phenomena have to be accounted for in studying

differentiation.

In the case of the ideal capitalist labor costs represent no problem since all labor is hired. But what if, as is almost universally the case, some of the capitalists own labor is used in the entreprise? Several cases must be distinguished here. If the capitalist's family does not in any essential way deped on the income of the farm for consumption; if the capitalist has investments other than the farm and is therefore mobile, then the cost of the capitalist's labor should simply be equal to whatever it would cost his capitalist to hire a manager to do the same managerial tasks. But whenever the capitalist is in fact more like a rich peasant; that is, the family depends substantially for its consumption needs on the proceeds of the production process, and agriculture is the farmers only investment, so he is not highly mobile (and hence not likely to perceive opportunity costs as a tangible cost), then it is reasonable to charge as labor costs the family's consumption needs. Again, it seems to us that it would be an error to count actual consumption as necessary consumption, since whatever a capitalist's family consumes is likely to be at least partially the result of past capital accumulation, and could typically be reduced to make way for even more capital accumulation, should the opportunity or need arise, for example, if an

attractive piece of property is offered to the capitalist, or if he is forced by competition to adopt a certain technical improvement. We see no a-priori reason why necessary consumption for the capitalist should be any different than for the peasants. Of course, all this is consistent with our interest in accumulable funds, rather than actual accumulation. Luxury consumption, that is, consumption over what is generally recognized as necessary consumption, is potentially accumulable, and is part of the surplus, even if it is not necessarily invested.

Land costs for the capitalist farmer again present no difficulty. We impute the rental value of the lands even if they are owned, for we assume a profit maximizing strategy. For the peasant working on inherited land, whose behavioral strategy may be mere reproduction of his social position, the imputed yearly rental value would be the amount necessary to contribute to a fund that would compensate all the inheritors but one (the one who actually inherits), and so keep the property intact, so as to be able to take all the marketing and credit advantages that larger size confers. Thus, the peasants rent would be, as explained above,

$$r_p = r_m(n-1)/n$$

where

r_m = market rent

n = number of inheritors

This can be used only if the price of land is equal to the discounted value of the stream of rent. Otherwise,

$$r_p = a$$

where a is the yearly amortization payment on a debt of size v(n-1)/n, v being the value of the peasant's land.

Finally, the treatment of capital costs is again simple for both peasant and capitalist enterprises. If the factors in question must be replaced through market, then the adequate valuation is the market price. If it can be replaced through the use of family labor, then the cost of the labor contained in the tools in question must be used, as in the case of materials expenditures and any of the other goods produced on the farm. Of course, in the case of capital goods some depreciation rule must be used, since it is unlikely that all of any capital good is destroyed in each cycle. The simplest rule is probably straight line depreciation. In any case, these costs are such a small proportion of the costs of most farms that it is probably not very important which method one uses. (Capital costs of fixed assets are usually less than 5% of costs.)

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