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THE SIMPLE ECONOMICS OF LAND REFORM:
THE EXPROPRIATION-COMPENSATION PROCESS AND INCOME DISTRIBUTION

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All views, interpretations, recommendations and conclusions expressed in this paper are those of the author and not necessarily those of the supporting or cooperating organizations.

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Land reform of the classic type involves principally a coercive redistribution of ownership rights to land, and can be divided into three main subprocesses:¹ (1) expropriation² of the land in favor of the new owners, (2) payment of compensation, if any,³ and (3) financing the compensation or other costs of the land reform. That these subprocesses are interdependent, and that (for example) forms of financing used can affect the net level of compensation paid, seem obvious; yet the interrelationships are often only dimly perceived by policy-makers and the possible outcomes of the redistribution misunderstood even by economists. It is the purpose of this paper to show, using simple micro- and macro-economic analysis, that the redistributive effects of the major types of land reform policies can be determined and a basis established for judging their relative efficiency in attaining the goals of a given land reform. The analysis will also point out some of the important complementarities or substitutabilities among policies which might at first glance appear to affect only one of the three subparts of the expropriation/compensation process.

The ultimate purpose of a land redistribution may differ among countries,⁴ but the proximate goal is in all cases to effect a structural change in ownership, with perhaps a secondary objective of reducing the price⁵ of land. Thus the focus is the sale, not rental, market for land, and the attempt to change the structure of land ownership may be regarded as an effort to shift the intersection of the supply and

demand curves to the right, i.e., to increase the rate of flow of land from present owners to others.

At any given time, the entire land stock of a country is not available for sale at the going market price. That some landlords are unwilling to sell at the current price,⁶ while some potential purchasers cannot afford to buy at that price shows nothing more than the expected divergence of supply and demand curves beyond the intersection point. In the analysis which follows, we look at various expropriation and compensation measures in comparative statics terms, to see how they are likely to affect the position and shape of the short-run supply and demand curves, and the location of their intersection. For simplicity and convenience of exposition, we shall initially assume all land is owned by "landlords," and that it is demanded by "peasants," persons who are currently tenants or landless workers, or by other landlords. Land will be measured in income-producing units, rather than mere area, to allow the notion of a single market price for the asset, land.⁷

The perspective throughout the paper will be that of a developing country considering land reform as a part of its development strategy. The analysis will be restricted to questions of short-run income and wealth redistribution as a result of the expropriation/compensation process, and will concentrate on land reform provisions found in the legislation of several Asian countries, primarily the Philippines.

The principal policy measures to be examined in part I below are the following:

1. Compulsory sale of land, whether at full market price or at some other (even zero) price,

2. Subsidized credit for land purchase,
3. Land tax increase or rent reduction,
4. Ceiling or minimum on the size of landholdings, and
5. Restrictions on alienation or purchase of land.

Following the analysis of these policies, part II will discuss the effects of various financing methods on the policy outcomes. Part III will attempt to summarize the conclusions drawn from the analysis.

I

In Figure 1, the pre-reform market equilibrium occurs at (P_0, Q_0) , where the demand curve DD intersects the supply curve SS (Q_T represents the total land stock of the country). If landlords are compelled to sell their holdings at the present market price, it would be equivalent to forcing the supply curve to be horizontal beyond Q_0 (curve SS'), The demand curve (unless it is perfectly elastic at price P_0) must be shifted to the right in order that a greater volume of transactions take place, compared to that which occurs under free-market conditions. Subsidized credit or other provisions which reduce the cost or risk of land purchase increase the expected profitability of land, inducing potential purchasers to demand more at any given price, i.e., shifting the demand to a position such as D'D'. With compulsory sale at P_0 , the subsidized credit provision would increase the rate of purchase to Q_1 per unit of time.

Without the compulsion on sellers, subsidized credit alone would result in a higher price and a smaller increment to land sales (P_2, Q_2) . Compulsion would be redundant if the supply curve were horizontal initially (not a relevant notion for Asia), but is necessary if an increased volume of sales and no increase in price are both goals of

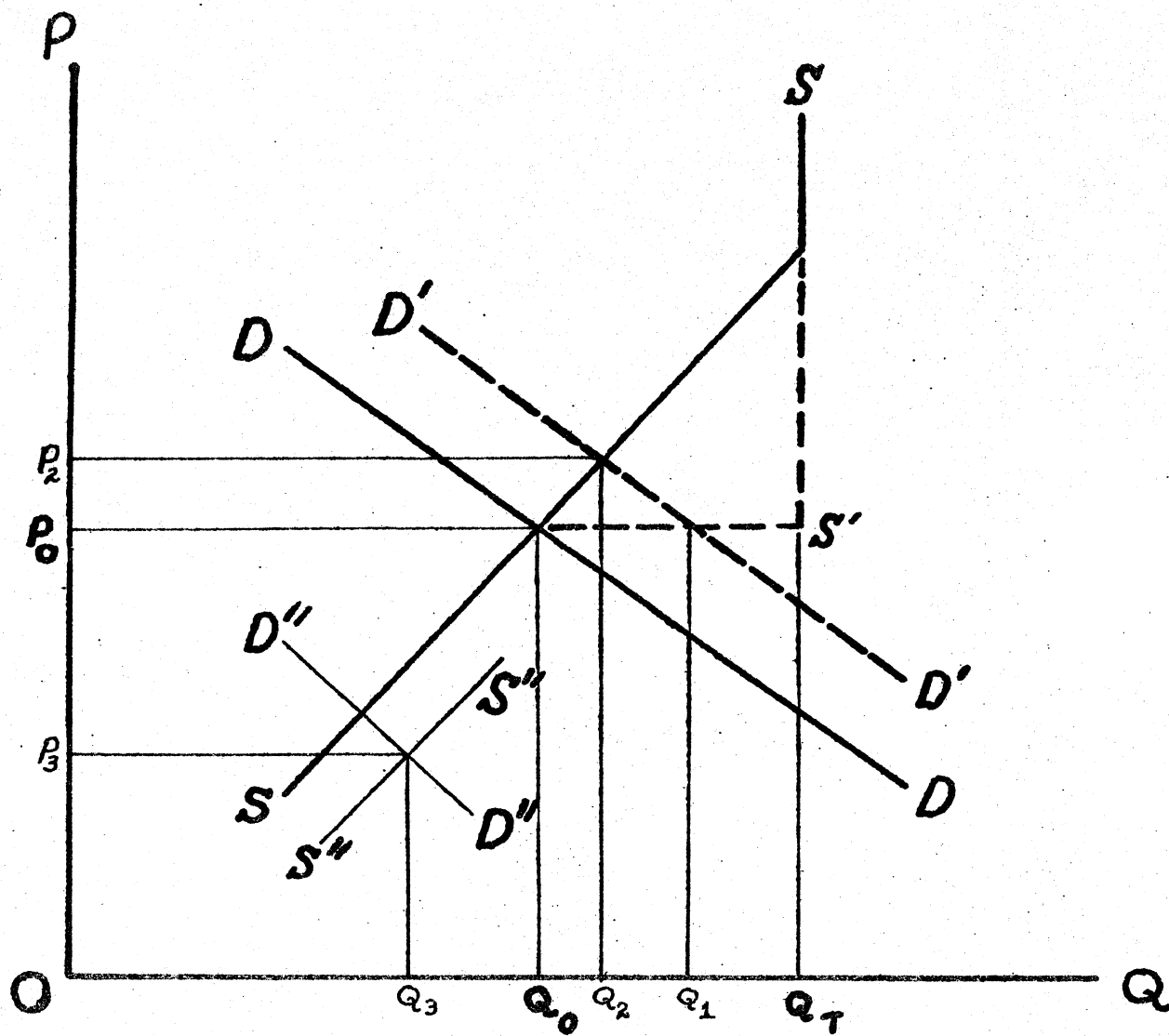


Figure 1

the land legislation. Moreover, if the credit subsidy were general, so that it were available to landlords as well, the increased profitability of holding land would raise their reservation price, i.e., the supply curve would shift upwards.⁸

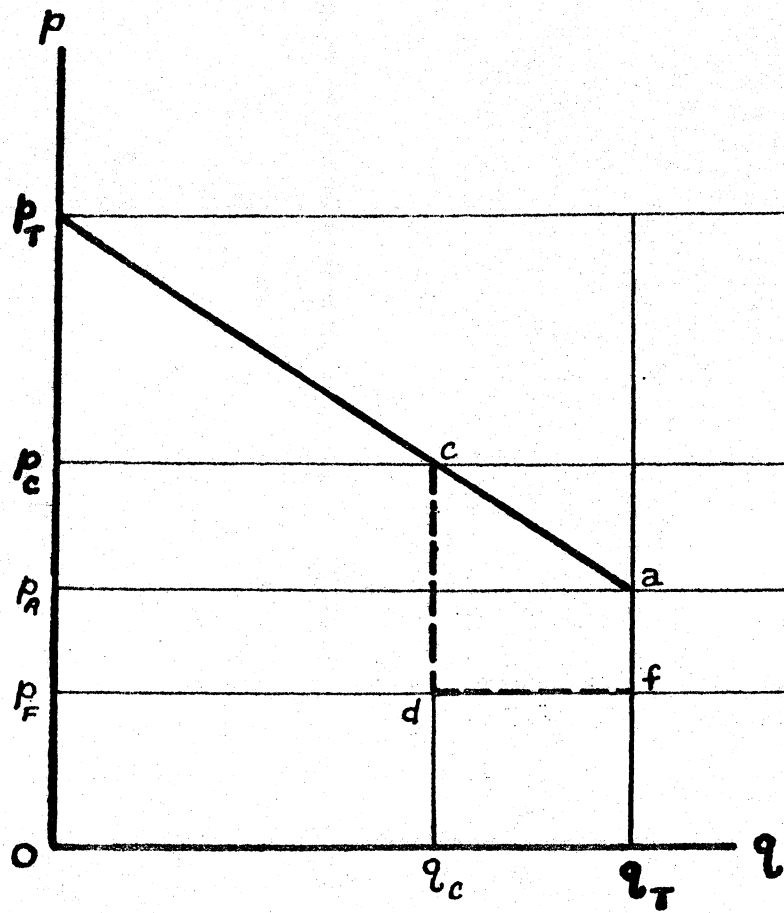
Besides forcing landlords into compulsory sales at less-than-market prices, a downward shift of the supply curve (to a position like $S''S''$) could be accomplished by increasing the taxes on land or enforcing a rent reduction. But the demand curve might also shift left--if, for example, the increased taxes would fall also on any new purchaser of land--and could lead to a result such as (P_3, Q_3) where the price has indeed been reduced, but which is exactly contrary to the major goal of speeding up the transfer of land from landlords to the peasants. Thus a land tax, to maximize the incentive for landlords to sell and peasants to buy, would have to be discriminatory, favoring new purchasers. The administrative burdens imposed by such a scheme are likely to be very heavy, and the opportunities for evasion abundant. Moreover, as the reform proceeds an important part of the agricultural tax base would be automatically eroded.

Land rent reductions are automatically discriminatory, and carry with them the incentive for the tenants to cooperate with the government in their enforcement. Despite the discrimination in favor of tenants and against landlords inherent in a forced rental reduction, it can have the same undesired result as a nondiscriminatory land tax, namely to shift the tenants' demand curve for land purchase to the left.⁹ The rent reduction increases the peasants' income from any level of gross production (shrinks the increment to be gained by changing from tenant to owner status), reducing their incentive to buy land as an

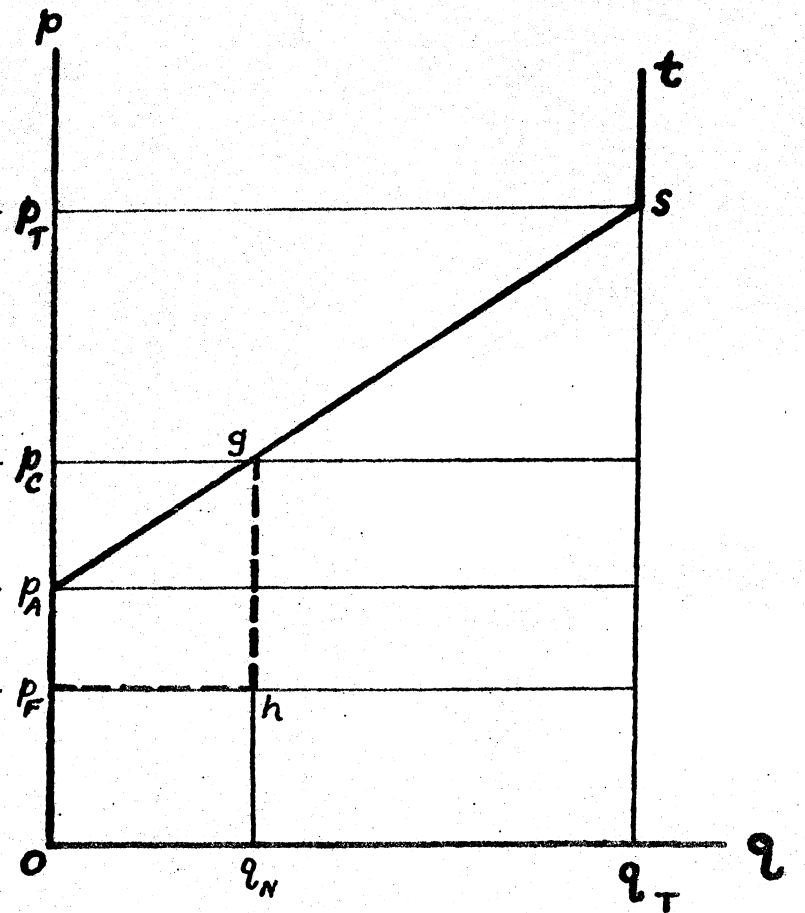
income-earning asset. Because their incomes are increased, part of this reduction in demand may be offset by an income effect, but unless the consumption value of landownership is very high, the offset is unlikely to be complete. The effects of a rent reduction¹⁰ will not be so strong as the effects of an equivalent (i.e., equal in the amount in which it nominally reduces the landlords rental income) tax on land, both because of the smaller demand shift and because the incidence of the rent reduction is more difficult to share with the tenants.¹¹

A ceiling on the landlord's retained holding (partial expropriation) is a frequent feature of land reform laws.¹² A landlord must dispose of any excess land at whatever price he can get. To analyze this case diagrammatically, it is perhaps most convenient to look first at the landlord's reservation demand for land, i.e., how much of his total holding he would keep for his own use at a given price. His reservation demand schedule can be represented as $p_T a$ in Figure 2A, in which Oq_T represents his total land holding, p_a the price at which he would sell nothing, and p_T the price at which he would voluntarily sell out completely. The amount he offers for sale in the market at any price below p_T would be measured to the left from q_T . This schedule then translates into an individual supply curve of the form $p_a g_s$ in Figure 2B.

Now suppose the government imposes a ceiling on individual landholdings at a level equal to the distance Oq_c in Figure 2A, an amount less than the landlord's initial acreage. Since he would voluntarily dispose of the excess, $q_T q_c$, at any price p_c or above, we need only consider the case where the offer price is below p_c -- as for example, p_f . Assume, for convenience, that the offer, p_f , is below the level of p_a , at which price he would have chosen to keep all his land off the



A.



B.

Figure 2

market. The ceiling limit cum low offer price forces his reservation demand into a shape such as $p_T cdf$, so the supply schedule assumes the shape of $p_f hgs$ in Figure 2B.

To get the market supply curve for land, we merely aggregate (add horizontally) the individual supply curves of the present landowners. It is a simple matter to show (but the process will not be detailed here) that the market supply curve has the same general shape as that of the individual landlord,¹³ such as $P_f HGS''$ in Figure 3.

Adding a demand curve to Figure 3 will show the effects of the ceiling legislation. The post-ceiling supply will lie below the pre-ceiling supply to the left of the quantity Q_N , which represents the total disposal of excess holdings by landlords at the dictated price. Beyond Q_N , the post-ceiling supply curve will coincide with the initial supply curve.¹⁴ The demand curve must cross the original supply curve ($P_A EGS''S$) to the left of Q_N , otherwise the ceiling legislation would have been redundant. If the demand curve lies in a position such as $D'D'$ the government will find buyers at the dictated price for all the excess lands which it has forced landlords to sell. If it lies to the left of $D'D'$, the government will find itself holding land which no one wants (or is permitted) to buy at the price it paid. These lands could be sold at a loss, given away, or held for public use.

If the demand curve lies to the right of $D'D'$, the government could realize a profit on the sale of the lands which it acquired. If it resells to tenants or laborers at its own purchase price, however, it will find unsatisfied excess demand for these lands, and be forced into some extra-market rationing procedure. The more the other

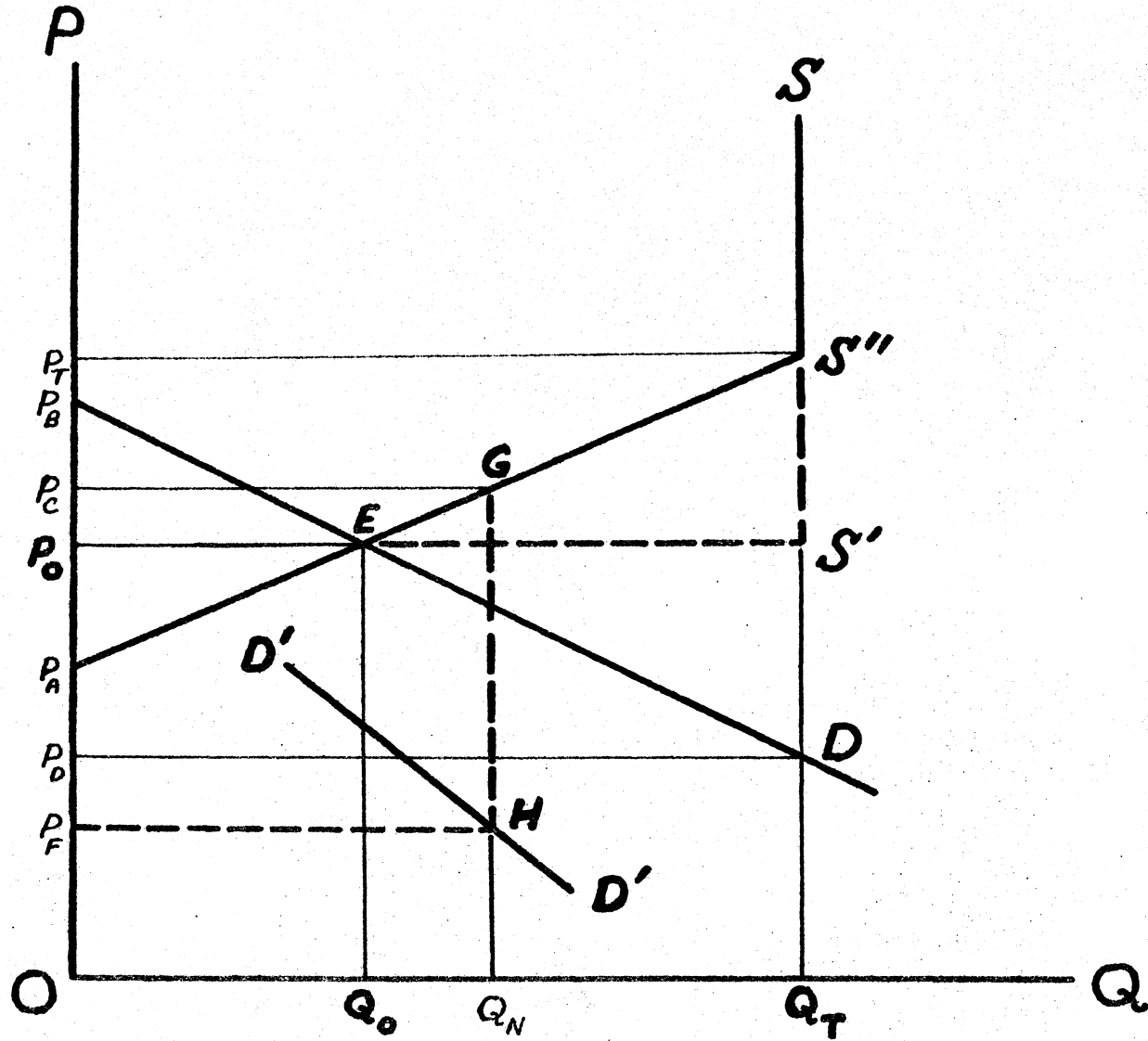


Figure 3

provisions of land legislation shift the demand curve to the right, the greater the rationing problem will become.¹⁵

Some land reform laws which impose ceilings also provide that no holding may be below a certain size. Insofar as even a minimum-size holding is out of the financial reach of some of the potential purchasers of land, the resulting demand curve will lie below the free-market demand over at least the first part of its length. Similarly, if some of the land is initially in the hands of sub-minimum minifundistas, the supply curve of land will be forced into a lower position. Such a minimum requirement may force land prices down; they cannot rise unless some other provision is strong enough to cause a net rightward shift in the demand curve.

Provisions of maximum or minimum size of holdings sometimes are accompanied by restrictions on the alienation of lands transferred into the hands of peasants.¹⁶ If the restrictions are absolute--a prohibition on sale or other alienation of land--they have the effect of shifting the maximum amount of land available for sale in the market to the left, i.e., a movement of the point Q_T toward the origin. If the restrictions merely make it more difficult to alienate the land, the immediate effect may be seen as a shift of demand, or supply, or both. A tax on land transfers, for example, could be treated like any other tax by viewing it as a shift of either the demand curve or the supply curve. Refusing to allow mortgage credit to be extended for a third-party purchase of land newly transferred to a tenant would shift the demand curve to the left. Requiring the seller to go through a difficult administrative procedure to secure permission to sell his land would raise the selling cost, which is in effect an upward shift

of the supply curve.¹⁷ For as long as such provisions are in force, the curve or curves affected could shift in every period.

We have so far abstracted from a consideration of who makes up the demanders and who the suppliers of land at any time in the market. Just as the short run curves will shift according to various provisions of the land reform law, so will they shift as the composition of landholders and potential land purchasers changes over time or as a result of legislation. Present landlords might wish to be sellers at one price, but buyers at a lower price.¹⁸ Often land reform programs must contain provisions which try to affect the membership of the demanding and supplying group at various prices. Regulations aimed at preventing the old landlords from repurchasing land are trying to keep this group out of the market on the demand side, just as restrictions on alienation aim at eliminating the beneficiaries of land reform from the market on the supply side.

These latter considerations, when viewed in conjunction with the discussion which has preceded them, point out one obvious but often-overlooked fact. Land reform is seldom aimed at removing imperfections from the land market; on the contrary, most provisions are designed to interfere in, and alter the function of, the market for land. It is therefore likely that land redistribution cannot be simply a one-shot affair, but rather will require continuing long-term supervision and administration to be successful in achieving the goals set for it. As economic development proceeds, the pressures to overturn some of the original provisions are likely to intensify, which requires not only a continuing administrative effort but also a degree of flexibility which many programs do not contain.¹⁹

11

When land is redistributed, so is "power, property, income, and status".²⁰ A consideration of the short-run macro-economic effects of the expropriation-compensation process turns mainly around the distribution of income or claims on income. If compensation is paid, it can be in cash, in kind,²¹ in bonds or other securities, or in some combination of two or more of these.²² The payment of compensation, in turn, may come from the new landowners' amortization of purchase price (self-financing land reform), from new taxes, from diversion of funds away from other areas of government spending, from borrowing or grants, from credit creation (including the printing of money), or from the sale of government assets.²³ An examination of the results of the various financing schemes can show quite clearly that the form of financing chosen may have as great an effect on the eventual income distribution as the levels of expropriation and compensation themselves; some forms of financing will facilitate, and others hinder, the attainment of the land reform goals.

Consider a case in which all landlord land is compulsorily acquired at the market price, P_0 (Figure 3), and sold by the government for what the peasants are willing to pay, P_D . Since the last landlord would have sold out voluntarily only at a price of P_T , there is a loss of "sellers' surplus". This loss may be approximated by the difference between the area $P_A EGS'P_T$ and the area $P_A EP_0$; there is an additional loss (as compared to voluntary sell-out) given by the area $ES'S'$. So the total loss to landlords can be approximated on the diagram by the rectangle $P_0 S'S'P_T$. Thus even compensation at "full

market price" involves a loss to landlords as a group (see footnote 6). The "buyers' surplus" at the market equilibrium, E, would have been P_0EP_B ; in the case under consideration sale of Q_T of land to them at the price P_D provides them with additional surplus equal to P_DP_0ED . This is all intangible, but the government suffers a financial loss equal to the area $P_DDS'P_0$, the difference between what it paid for the land and the revenue received from its sale. The government may shift part or all of its loss onto the new owners, the former landlords, or some third group (e.g., city dwellers), according to how it finances the loss.²⁴

A few examples should be sufficient to make this point clear. A capital levy on bonds issued in payment of compensation would shift a part of the burden onto the former landlords and increase their loss from the reform. A land tax to finance the compensation payments would hit the new owners, but might in part be passed on to the consumers of farm products and the suppliers of inputs. Monetary expansion to pay for the land reform would almost inevitably bring inflation, leading to a willy-nilly transfer of the burden of compensation. Diversion of other government spending would pass some of the burden on to the former beneficiaries of the services eliminated by the diversion. The list of possibilities could be extended endlessly; the point is that the financing method can offset, augment, or even substitute for other measures in achieving the redistributive goals of land reform.²⁵ Therefore it is essential in analyzing any land redistribution program that the levels of expropriation and compensation not be viewed in isolation from the financial arrangements made to carry out the process. They must be evaluated as a package.

Tied in with the issue of financing is the idea that landlords' capital "tied up" in land can be diverted to productive use in the form of increased investment in industry. This is a very persistent misconception,²⁶ despite treatment in the economics literature,²⁷ and merits a brief re-examination here. Use an extreme case for a basis: All landlord holdings are confiscated, with no compensation, and given to the tillers. Since there is no change in the capital stock of the country, the effect on industrial investment in the future depends on whether the new landholders will use the income from the land differently than did the former landlords.

If compensation is paid, the method of financing has great bearing on the effect on investment. If landlords used the entire proceeds to buy new capital equipment, and the compensation was financed by domestic borrowing, this means only that someone else's investible savings were transferred to the former landlords, who became the investing agent for these funds. No increase in net investment has occurred.²⁸ If the compensation is financed by a tax, both the consumption expenditures and the savings of those taxed would be reduced. If the landlords then invest all the compensation, the proportion of investment out of a given level of income would indeed be increased, but because someone's consumption was reduced. Aggregate investment could just as well decrease, if the former landlords as a group have a higher propensity to consume²⁹ than those taxed to pay the compensation. Similarly, if compensation were financed by printing money, and the landlords' expenditures led to employment of previously-idle resources, presumably some of the increase in real income would be invested. But again it is the change in income, not the transfer of ownership

of an existing asset, which led to an increase in the level of investment.

Payment of compensation is merely the exchange of some financial asset for an existing real asset, which has no immediate effect on the level of investment. The level and direction of real investment is affected by the redistribution of income and wealth which results and by the induced changes in consumption and savings behavior³⁰ of the various groups who benefit by, or pay for, the land redistribution. The only way investment out of a given level of income can be increased is to depress the aggregate average propensity to consume;³¹ the form of financing chosen will determine whether and how this would occur. It is the change in the use of income, not some process of "defrosting" capital somehow frozen into land values, that would be responsible for increases in net investment.

The transfer of existing "capital" from agriculture to industry is possible, however, as when landlords find it profitable to divert some of their land from agricultural to non-agricultural production.³² A likely transfer--one which is particularly pernicious so far as the success of land reform is concerned--is the oft-noted diversion into other areas of the working capital formerly supplied by landlords. Land reform legislation must typically contain some provision to prevent this diversion,³³ or provide a substitute for it through government credit agencies, special agrarian banks, cooperative organizations, and the like.

Foreign financing (loans or grants) may be sought to pay for land redistribution, although compensation payments would almost certainly be made in domestic currency.³⁴ The resulting foreign exchange inflow could be used either to expand domestic credit or to allow imports

to rise. Later servicing of any foreign debt could presumably come from increased production resulting from higher levels of investment (either induced by credit expansion or permitted by increased imports), thus postponing the immediate burden on the local citizens. The burden must be apportioned sometime; financing of land redistribution via foreign borrowing is primarily a method of buying time.

III

The analysis of the foregoing sections has attempted to show how the simplest of economic tools provide a coherent framework for the analysis of the redistributive effects of some of the major policies of land reform. The conclusions reached are not startling, nor should we have expected them to be. Yet I feel the principal points made to be useful, not only in evaluating the possible effects of certain policies, but in trying to dispel some of the confusion surrounding the issue of land redistribution and its financing.

The most important results are, in my opinion, the following:

1. Land reform policies can be divided into those which shift the supply of land and those which affect the demand. If the primary goal of land reform is to get more land into the hands of the peasants, some of these policies may be viewed as substitutes for each other; if, however, land prices are not to rise, the policies often become complements.
2. Enforced rent reductions and increased land taxes are essentially equivalent in the direction of their effects on both supply and demand, even if the former be discriminatory in favor of tenants and the latter not. Neither of these is a sufficient condition for speeding up the

rate of transfer of land from landlords to tenants; both will force down the price, but the volume of transactions may be reduced.

3. The idea that land reform liberates the land market from imperfections and permits it to work more freely is probably specious. Many land reform provisions are designed to circumvent the operations of a free market to eliminate some of its undesirable results; this requires land reform to be a continuing administrative process, and commits government resources to the effort for a long period after the land redistribution has been completed.

4. Perhaps the most important point made is that financing can do what compensation levels have left undone, or undo what the establishment of a certain level of compensation has accomplished. Given the taxing and monetary powers of governments, the argument whether compensation should be set at full market value seems rather academic. More importantly, the government may have a wide choice of feasible means to achieve a given outcome; it probably ought to choose that which minimizes political friction or the use of real resources in carrying out the expropriation-compensation process.

5. The notion that "idle capital tied up in land" can be diverted to industry, thereby increasing the industrial capacity of a country, is a myth. Existing real assets cannot magically be transformed into new assets of a different form. This is not to say there will be no diversion of landlord "capital" from agriculture to industry, even in the short run. But it is likely to be the working capital formerly supplied by landlords which is diverted, as well as some agricultural land which may be put to non-agricultural use either to escape expropriation, or because the land reform law has made the alternative use

more profitable.

6. For land redistribution itself, there is no necessity for foreign financing. But borrowing foreign exchange to finance a land reform can be beneficial, in that it postpones the payment of the costs of the reform, and provides the basis for increased investment through the expansion of domestic credit or a higher level of imports. The costs of the reform will be apportioned accordingly as the burdens of servicing the foreign debt are apportioned.

Some minor conclusions include the notion that with rent reduction, the land price will probably not fall by the same relative amount as rent has been decreased; or that both ceilings and floors on the size of landholdings are likely to force the price down, but may or may not help to get more lands into the hands of former tenants; or that putting a ceiling price on land, in the absence of some other provision to shift the supply curve, will not help at all to achieve the primary goal of speeding up the peasants' acquisition of land.

In focusing on short-run redistributive consequences, this paper has ignored two very important aspects of land reform. There is still the unsettled question of timing or speed of implementation. The "go-slow" argument cites the massive amount of resources, both human and material, necessary for successful implementation of wide-scale land reforms. The proponents of quick reform point out that protracted uncertainty about implementation will both reduce the level of investment in agriculture during the period of uncertainty and allow landlords ample time to marshal their resources toward the subversion of a hesitant program. The argument cannot be settled here. It may be worthwhile to note, as circumstantial evidence, that those Asian

land reforms generally considered successful--e.g., Japan, Taiwan, -- were done quickly. Those which have been protracted -- India, Philippines -- seem less certain of success.

Incentives to greater production and productivity in agriculture can be at least as important as income redistribution. With the new high-yielding varieties of cereal grains becoming more widely available, increased production may even serve -- for a time -- as a substitute for redistributive measures. The "green revolution" can bring more income to share tenants, and thus be popular with them. It is likely to be even more popular with landlords, since they get their share of a larger output, plus a chance to blunt the pressures of land redistribution. It is probably true that the "green revolution" has postponed the adoption of redistributive measures in some Asian countries, and for some time this process may continue. But ultimately, if the concern is for maximum production from agriculture, the "failure to make significant institutional reforms may well be a handicap".³⁵ While many of the necessary institutional changes will have to be in the field of distribution (drying, processing, storing, and marketing), I am sure that reform of the structure of land rights will continue to be an issue of importance, and one whose urgency is likely to increase in the next decade.

FOOTNOTES

*Visiting Associate Professor, University of Wisconsin. Thanks are particularly due to my former colleague in the Philippines, J. R. Huber, for enduring frequent interruptions to discuss points raised in this paper. It is not his fault if mistakes remain.

1. These three need not occur in any fixed order. In making the categories, it is assumed that one of the most difficult processes--the political effort that prepares the way for enactment of a land reform--has already been completed.
2. Expropriation is defined here as any provision of land reform which forces present landowners as a group to part with some land in excess of that which they would voluntarily have sold at the current market price. Thus confiscation (taking land without payment) is merely one special case of expropriation.
3. Compensation may be positive, zero, or even negative. A useful economic classification, in descending order of compensation per unit of compulsorily-acquired land, might be as follows: (1) above-market price, (2) market price, (3) "formula price", of which a multiple of the annual crop or rent, or payment based on taxable value of the land, are the most common examples, (4) no compensation (outright confiscation), or (5) negative compensation, i.e., confiscation plus a penalty such as exile, imprisonment, or execution of former landlords.
4. Some seek, for example, to break the power of a conservative rural elite, while some attempt to create a stable and conservative power bloc in the countryside. As economic goals, some may emphasize productivity while others stress income distribution. For a treatment of this latter issue, see Vernon Ruttan, "Equity and Productivity Objectives In Agrarian Reform Legislation: Perspectives on the New Philippine Land Reform Code," Indian Journal of Agricultural Economics, July-December 1964, 114-30.
5. It should be noted that the market price may exceed the value of current rental capitalized at prevailing interest rates because of smaller risk in ownership of land compared to other assets, because of expectations of future increases in the income stream from land, or because possession of land may have some consumption value. None of these are reasons why a price reduction would be desirable, however.
6. Hence the need for coercion in taking the landlords' land, even if compensation is to be at "full market value". Doreen Warriner asserts that "any price below the market value of the property represents a degree of expropriation [confiscation]". Doreen Warriner, Land Reform in Principle and Practice (Oxford: Clarendon Press, 1969), 19. The discussion of part II will show that compensation at, and even for some range above, full market price represents a degree of confiscation.
7. The principle of measuring land in some sort of productivity units is sometimes used in the implementation of land reform. The

best Asian example is probably the Taiwan system, in which land was classified into 26 grades, and the landlord's retention under the "land-to-the-tiller" program was limited to the equivalent of 3 chia (nearly 3 hectares) of 7th to 12th grade paddy land. (Land to the Tiller Act, Ch. 11, Article 10.) See also S. K. Shen, "Administration of the Land Reform Program in Taiwan," In James R. Brown and Sein Lin (eds.), Land Reform in Developing Countries (Hartford, Connecticut: The University of Hartford, 1968), 408. The notion of the "standard acre," such as in used in India, and which depends primarily on the presence or absence of irrigation, is also a step in the same direction. Since the Taiwan grading system takes into account not only yield from the land but also such things as nearness to a road (interview with S. K. Shen, Director, Taiwan Land Bureau, Taipei, 16 April 1970), it comes close to the ideal concept for economic measurement of "land". Nepal, recognizing the impossibility of a fine grading of land without the underlying cadastral survey, has opted for a rougher system, utilizing only four grades, to proceed in concert with the survey now under way. (Interview with J.R.G. Harrop, Survey Director, Kathmandu, 20 May 1970.)

8. Given the type of supply curve used, it is inappropriate to think of supply shifting to the right or left; it must shift up or down. The standard terminology of rightward or leftward shifts will be retained only for the demand curves.

9. The tenants' demand to rent land does not diminish, of course. The landlords' incentive is to try to restore income lost either by inducing tenants to farm the land more intensively, or by evicting them and operating the farm with hired labor. Both of these responses were found in Taiwan after the 37.5% rent ceiling was promulgated in 1949. See Steven Cheung, The Theory of Share Tenancy (Chicago: Chicago University Press, 1969), chs. 5-8. It should be noted, however, that in a market system neither of these responses can restore the landlords' original income position unless some underlying condition changes.

10. An interesting side effect can be noted: Because land would now be less attractive to both landlords and tenants as an income-earning asset, there would be a net shift of demand toward nonland assets (given unchanged savings behavior). This should drive up the prices of these nonland assets, reducing the rate of interest. With a lower interest rate, the new equilibrium in the land market would produce a price which is a greater multiple of the rental income than before; the percentage reduction in the market price for land should thus be smaller than the percentage reduction in net rent per unit of land. This presumes a smoothly-functioning capital market and the existence of many alternative assets; neither condition may be met in many countries.

11. The production effects of the two measures are likely to be very much different. The tax on land will tend to drive resources out of agriculture, while the rental reduction raises the returns to tenant inputs above their current alternative employment, inducing tenants to draw resources into farming until a new equilibrium is established. Since this also is in the landlords' interest (it helps restore part,

at least, of their lost income), they have the incentive to encourage such increases in intensity. See Cheung, esp. ch. 6.

12. As previously mentioned (footnote 7), retention limits were set at the equivalent of 3 chia of medium-grade paddy land in Taiwan. Individual limits are set at 75 hectares in the Philippines (R.A. 3844, Sec. 53) on land covered by the reform provisions. The limit in Japan was generally one hectare of tenanted land or three hectares of owner-cultivated land (See Takekazu Ogura, "Economic Impact of Postwar Land Reform on Japan", in Brown and Lin, eds., 231), while in Nepal it has been set at 16.4 hectares +2 hectares homestead (Joint FAO/ILO/ECAFE Seminar on Implementation of Land Reform in Asia and the Far East, Country Paper: Nepal, Manila, July 1969, 3. Hereafter referred to as Manila Seminar). It is quite clear that in Japan and Taiwan the limits were set low enough to reduce rental income to minimal levels, forcing former landlords to find other sources of livelihood. In the Philippines and Nepal, however, it seems that limits are more directed toward leaving a landlord a relatively comfortable income even after expropriation of his excess land.

13. If the dictated price should be above the price at which some landlords would have voluntarily sold some or all of their excess, then there will be an initial sloping portion to both some of the individual supply curves and the market supply schedule. This does not materially change the analysis, and would almost certainly be irrelevant.

14. If the conditions of footnote 13 were satisfied, and some landlords would have voluntarily sold more than their excess at the imposed price, the point Q_N would lie to the right of the position shown in Figure 3. Again, there is no significant change in the analysis.

15. The special extreme cases would be zero price or a zero ceiling. The problems would be larger, but the analysis remains the same, except that it would be hard to imagine that all the land could not be disposed of at a zero price.

16. Section 62 of the Philippine Land Reform Code forbids alienation except by heredity for a period of ten years past the date of full payment for land received under provisions of the Code, for example

17. Even after the lapse of the ten-year absolute prohibition on alienation of lands acquired under the Philippine Land Reform Code, "any transfer, sale or disposition may be made only in favor of persons qualified to acquire economic family-size farm units in accordance with the provisions of this Code". (R.A. 3844, Sec. 62) Taiwan forbade the transfer of land before its price was fully paid, and then only "when the transferee can cultivate it himself or it can be used for industrial or constructional purposes". (Land-to-the-Tiller Act, Ch. IV, article 28) Japan does not permit buying land to rent it out. (Ogura, 131)

18. On the diagram (Figure 2A) the "reservation demand" would extend beyond q_1 , indicating that the landlord would change from a net seller of land to a net buyer as the price drops below p_a .

19. Changes in the structure of demand may bring great incentives from commercialization of a much larger share of agricultural production, but the process may be hampered by difficulties in agglomerating and combining small production units set up by an earlier land reform. In Japan, the ability "to get rid of petty farming and move into an entrepreneurial agriculture" may now be severely circumscribed because "the transferability of farm land is still limited, making it difficult to overcome the petty and dispersed landholdings". Takekazu Ogura, Agricultural Development in Modern Japan (Tokyo: Fuji Publishing Co., 1968), 95, 100. Amendments to the Basic Land Law are being considered by the Japanese Diet to remedy this situation (interview with Mr. Hiroo Ishii, Agricultural Land Division, Ministry of Agriculture, 6 April 1970).

20. Edmundo Flores, "The Concept of Land Reform: Its Relation to Agricultural and Socio-Economic Development", Philippine Economic Journal, IX (First semester, 1970), III.

21. A recurring proposal for payment in kind in the Philippines involves swapping public land on the remote and sparsely-populated island of Palawan in exchange for tenanted private land in densely-populated central Luzon.

22. Compensation in the Philippines is to be paid 10% in cash, and the remainder in tax-free bonds of the Land Bank (R.A. 3844, sec. 80). The tax-free provision on both principal and interest removes one of the advantageous by-products normally accruing to a government which pays compensation. For, "...once government starts to pay large sums to former landlords by way of interest or bond redemption it has a formidable fiscal device by which to levy a tax on 'unearned income'". Archibald M. Woodruff, "Financing of Land Reform", Manila Seminar, July 1969, 23.

23. The proposal to sell military bases in metropolitan Manila to finance acquisitions by the Land Bank is just such a case.

24. It may elect to bear part of the loss itself, as for example by selling off government assets. It may be useful to point out here that the government may not just act as an agency for society as a whole or some groups within it; the government may have its own preferences, goals, and constraints limiting its action. For an interesting discussion of this viewpoint on government in less-developed countries, see S. Hymer and S. Resnick, "Interactions between the Government and the Private Sector: An Analysis of Government Expenditure Policy and the Reflection Ratio", in I. G. Stewart (ed.), Economic Development and Structural Change (Edinburgh: Edinburgh University Press, 1969), 156-80.

25. Thus the government could avoid constitutional challenge on "just compensation" by paying full market price, then levying a tax which would reduce landlords' compensation to a net level much below the market price. This assumes a powerful government (usually a necessary condition of imposing land reform), and suggests that resources tied up in contesting the compensation issue in court might be better employed in enforcing other land reform provisions.

26. For example: "There has to be a transfer to industry and trade of capital originally tied up in land." Flores, 112-13.

27. See for example, Nathan Rosenberg, "Capital Formation in Underdeveloped Countries," American Economic Review, L (September, 1960), esp. 710-12.

28. There may be a change in the composition of investment, as landlords turn away from agriculture. In this limited sense landlord "capital" is diverted away from agriculture to industry or trade, but again the new industrial investment comes not from capital "tied up" in land, but from a net change in the savings behavior of the former landlords and the persons from whom the funds were borrowed.

29. Landlords may try to save more out of any given level of money income, once their tie to the land is broken, in an attempt to restore their former wealth position. An equally plausible case can be made, however, that they will save less, as they try to substitute consumption of other goods and services for the "consumption value" or "psychic income" which landownership formerly provided.

30. Taiwan realized that the feasible objective was to interest landlords in industrial entrepreneurship, and not that by some magical process part of the value of an existing asset could be turned into a new investment good. "The Government decided that the landlords should be encouraged to interest themselves in industrial development by converting their landholdings into industrial holdings." Chen Cheng, Land Reform in Taiwan (Taipei: China Publishing Co., 1961), 68. To accomplish this end, existing shares of State-owned corporations were transferred to private ownership through the compensation process. The transfer did not directly increase the capital stock of the country, but rather, "transfers of the four public corporations have smoothed the way for private enterprise". (Ibid.)

31. Keeping some resources idle may be regarded as a form of consumption, but one from which very few members of the society derive any benefit.

32. Some land reform laws encourage such diversion. In the Philippines, tenants may be ejected (with payment of an indemnity) if the landlord or a member of his immediate family "will personally cultivate the landholding or will convert the landholding, if suitably located, into residential, factory, hospital or school site or other useful non-agricultural purposes". (R.A. 3844, Sec. 36.)

33. A particularly interesting provision which expressly attempts to stem the outflow of landlords' working capital is Nepal's compulsory

savings scheme. To provide a source of funds for short-term agricultural loans, landlords were required to contribute 10 rupees, and tenants 5 rupees, per bigha of land as compulsory savings. Passbooks were issued, interest was paid, and the funds funnelled through ward committees and village cooperatives to supply tenants' working capital needs. (Interview with K. P. Rizal, Land Reform Department, Kathmandu, 19 May 1970.)

34. Payment of compensation in foreign exchange would almost certainly exacerbate the problem of capital flight.

35. Clifton R. Wharton, "The Green Revolution: Cornucopia or Pandora's Box?", Foreign Affairs, XLVII (April, 1969), 467.