A REINTERPRETATION OF RICARDIAN RENT THEORY

by Ronald E. Bird*

Introduction

The concept of rent has a long and controversial history as a component of economic theory. Throughout this history and up to the present, David Ricardo's analysis of land rent has been the focus of attention and the starting point for those wishing to extend and modify the concept. This paper may be divided into three parts. In part one I will outline the traditional interpretations of Ricardo's rent theory in terms of the elements which have led to controversy in the late 19th century and today. In the second part I will argue that these controversies were founded upon a too-literal microeconomic interpretation of Ricardo's model. I will show that a more realistic interpretation can be developed by viewing Ricardian rent theory in the context of his total economic system. In part three I will discuss the relevancy of rent concepts to economic analysis.

I

The concept of differential costs is usually recognized as the fundamental principle underlying the Ricardian analysis of rent. Ricardo wrote:

> If all land had the same properties, if it were unlimited in quantity and uniform in quality, no charge could be made for its use ... It is only, then, because land is not unlimited in quantity and uniform in quality, and because in the progress of population, land of an inferior quality, or less advantageously situated, is called into cultivation, that rent is ever paid for it. When in the progress of society land of the second degree of fertility is taken into cultivation, rent immediately commences on that of the first quality, and the amount of that rent will depend on the difference in quality of these two portions of land (7, p. 93).

This statement expressed the most commonly presented formulation of Ricardo's model: the extensive case. The extensive model described the rise of rent as cultivation was extended to successively less fertile land. Ricardo assumed an initial state in which the entire grain supply was produced on a single quality of land; as long as this quality of land continued to be more than sufficient to produce the necessary supply of grain, no rent could be charged for its use. The price of grain equaled labor and capital costs.

Ricardo assumed that eventually population growth would render the original quality of land insufficient to supply the necessary grain. A second, lower quality of land would be brought into cultivation. The same amount of labor and capital would produce a smaller amount of grain on the second land than on the first. The per unit cost of production for grain produced on the second quality of land would be higher. Since two prices could not prevail in the grain market, the price of all grain would become equal to the cost of production of grain on the inferior land. The value of the grain produced on the first quality of land would then exceed its cost of production. The excess was defined as rent. Competition for use of the better land would channel the rent to the landowners (7).

In this summary of Ricardo's rent theory, I have obviously glossed over a number of details. Among other things I have ignored Ricardo's intensive case which is based on diminishing returns to capital-labor. This potential criticism should be disposed of immediately. First, Ricardo gave primary attention to the extensive case (quality differentials). The textual evidence seems clear that he considered the intensive case to an appendage to his general treatment. The intensive case received primary attention in the hands of Ricardo's followers, especially James Mill and Nassau Senior. Second, as will be shown below, it was the extensive case which served as the basis for extensions of rent theory in the Ricardian tradition. Third, consideration of the intensive case leads directly to the criticisms of Jevons and Wicksteed, questioning the basic relevance of the term 'rent'. This issue will be considered in part three.

The writings of three individuals may serve to illustrate the development of rent theory since Ricardo. These are J. S. Mill, Alfred Marshall, and Joan Robinson. In each case the Ricardian concept of differential fertility formed the background of their discussion.

J. S. Mill

After following a rather circuitous introductory route, J. S. Mill arrived at a conclusion about rent which clearly reflected the Ricardian model:

> If, then, of the land in cultivation the part which yields least return to the labor and capital employed on it gives only the ordinary profit of capital, without leaving anything for rent; a standard is afforded for estimating the amount of rent which will be yielded by all other land. Any land yields just as much more than the ordinary profits of stock, as it

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> yields more than what is returned by the worst land in cultivation (5, p. 508).

But J. S. Mill did more than just summarize and consolidate Ricardo's work. He provided new insights into the phenomena described by Ricardian rent theory. Two insights were of particular importance. First, Mill suggested that the principles of Ricardian rent might apply to factors of production other than land (5, p. 506). Second, Mill raised the question of whether under certain circumstances rent could constitute a cost of production (5, p. 508).

Mill's first suggestion was later exploited by Marshall in his discussion of rents of ability (4, p. 576). It was Mill's second suggestion which at the time attracted attention and provoked controversy.

Mill argued that if a unit of land had alternative uses *A* and *B*, the rent which the land would yield in use *A* entered the cost of production when the land was used to produce *B*. His reasoning was that the use *A* rent was a necessary payment for production of *B* on the land. The rent was necessary to keep the land devoted to use *B* (5, p. 506).

Mill's special case provided a tool for critics of the Ricardian analysis. Jevons, and subsequently Wicksteed, argued that the issue of alternative uses revealed a basic weakness of the Ricardian rent theory (3, p. 68). The Ricardian model included the implicit assumption that land had only one use. Since it did not adequately explain the allocation of factor services among alternative uses, the Ricardian model could not serve as a useful tool of microeconomic analysis. This was the primary subject of rent controversy during the last quarter of the 19th century (1, p. 416).

Alfred Marshall

The contributions of Alfred Marshall represent an important watershed in the development of rent theory. He viewed Ricardian land rent as "the leading species of a large genus" (4, p. 412). His work extended and amplified the concept of rent, and most of what constitutes modern rent theory is founded on Marshall's work.

Not all of Marshall's discussion of rent was in the strict Ricardian mold. Two strands of thought ran through Marshall's discussions of rent: one was in the Ricardian tradition, the other was not. The Ricardian tradition was exemplified by Marshall's discussion of rents of ability (4, p. 576). Marshall argued that the earnings of some artisans, professional men, and entrepreneurs (note the self-employed inference each case contained) are element rent which could be traced to quality differences in the form of above-average skills. These differences were analogous to the Ricardian emphasis on fertility differences. It will become significant in terms of what follows that Marshall was very circumspect in his characterization of such earnings as rent (4, p. 831).

Marshall's discussion of quasi-rents accruing to capital represents the second strand of Marshall's rent theory (4, p. 411). Here he developed an independent line of reasoning. Marshall related the concept of rent to scarcity rather than quality differences. Marshall explained rent as the result of inadequate or slow adjustment of factor supplies to changing market conditions (4, p. 415). This approach, although only partially developed, might have provided a useful avenue of investigation. Instead, most subsequent attention focused on the Ricardian strand of Marshall's ideas (11, p. 258).

Joan Robinson

Joan Robinson developed her contribution to rent theory in the context of defining the supply curve of a homogeneous factor with respect to a particular industry (8, p. 101). She defined rent as a return in excess of transfer earnings. That is, a particular factor unit can be expected to transfer its services to industry *A* from industry *B* only if (abstracting from nonpecuniary returns) the factor price in industry *A* exceeds that in industry *B*. Industry *B's* earnings constitute the factor unit's transfer price. Factor units available to industry *A* (and homogeneous with respect to industry *A*) are assumed to come from many alternative industries. Units are assumed not to be homogeneous with respect to all alternative uses. Therefore, different potential units have different transfer prices. By arranging units in order of their transfer prices, Robinson obtained an upward sloping factor supply curve for industry *A* (8, p. 108).

As the factor price prevailing in the industry rises, additional units transfer in, with the marginal unit receiving income just equal to its transfer price. But for infra-marginal factor units the prevailing factor price represents earnings in excess of transfer price. This difference is what Robinson characterizes as rent. I will not proceed to the criticisms of Robinson's analysis. These are myriad, but not relevant to the present discussion. What Robinson was trying to do was remove the problem of alternative uses which had plagued previous discussions of rent theory since the Mill era. Rent as defined by Robinson is not equivalent to the Ricardian formula (10, p. 1221). The relative worth of the two formulations has been the subject of a recent controversy in the literature (9, p. 209). The interesting point to note, however, is that she maintained the distinctly Ricardian notion that rent must be related to factor unit differences. In Robinson's case the heterogeneity concept was turned around and applied to the alternative uses of factor units.

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II

The purpose of this discussion so far has been to show the way in which rent theory has developed from Ricardian foundations. Two points stand out in this development: (1) the existence of rent has been repeatedly identified with factor quality differences, and (2) the Ricardian rent concept has been applied to a microeconomic partial equilibrium framework. In my view these points need close scrutiny. Does the existence of rent in Ricardo's model really depend on fertility differences and is it legitimate to apply the Ricardian rent concept to microeconomic analyses?

To understand Ricardo's theory of rent, it must be viewed in the context of his overall theoretic system. Of particular importance in this regard is his doctrine of price-cost equality (7, p. 111). It was an essential equilibrium condition for Ricardo that price must equal cost of production. Of course cost of production was measured in terms of labor cost. Demand was not recognized as important for price determination. Ricardo wrote:

> In making labour the foundation of the value of commodities, and the comparative quantity of labour which is necessary to their production, the rule which determines the respective quantities of goods which shall be given in exchange for each other, we must not be supposed to deny the accidental and temporary deviations of the actual or market price of commodities from this, their primary and natural price (7, p. 111).

But despite the role of market price fluctuations in initiating the adjustment process, Ricardo considered such fluctuations unimportant accidents and not relevant to his long-run analysis:

> We shall leave them entirely out of our consideration whilst we are treating the laws which regulate natural prices, natural wages and natural profits, effects totally independent of these accidental causes. In speaking then of the exchangeable value of commodities, of the power of purchasing possessed by any one commodity, I mean always that power which it would possess, if not disturbed by any temporary or accidental cause, and which is its natural price (7, p. 114).

There are two reasons why Ricardo considered market price variations unimportant. Since he assumed constant returns to scale in manufacturing, such fluctuations would not affect his "natural prices." Since he assumed that the adjustment would be rapid and deviation from "natural price" short-lived, the effects on long-run income distribution would be insignificant. Underlying all of his discussion of adjustment was Ricardo's assumption of free capital mobility:

> It is then the desire, which every capitalist has, of diverting his funds from a less to a more profitable employment, that prevents the market price of commodities from continuing for any length of time, either much above or much below their natural price (7, p. 114).

If equilibrium were disturbed by an exogenous upward shift in demand, market price would rise. The rise of market price created an excess of revenue in the system. This excess encouraged the entry of new capital and labor units into the market. Supply expanded until price again equaled cost. This price was the "natural price" (7). At the "natural price" resources were optimally allocated and the system was in static equilibrium. Deviation from "natural price" implied maladjustment; the system was not in equilibrium. Agriculture presented a problem since it involved a costless actor (land) and a surplus product (sometimes defined in physical terms and sometimes in value terms). If this surplus were allowed to exist on all land, it would be indicative of the kind of maladjustment discussed in the manufacturing example. By assuming fertility differences Ricardo avoided this problem. At the margin of cultivation there was (by definition) no surplus. The value of product covered only labor and capital so that "natural price" prevailed. The return to inframarginal units could be attributed to their superior quality. Some portion of output had to be produced at a higher cost than the remainder so that price could be interpreted as reflecting only labor and capital (7, p. 98).

For market prices, which implied an equal role for demand in price determination, to have a role in his long-run analysis would have threatened Ricardo's proposition that "it is the cost of production which ultimately regulates price" (7, p. 97). Cost of production was defined to reflect only labor costs, either as wages or as the return to the labor embodied in capital. Combining this with the concept of increasing costs in agriculture led to the conclusion that:

> The exchangeable value of all commodities ... is always regulated by the greater quantity of labor necessarily bestowed upon their production by those who have no such [more favorable] facilities; by those who continue to produce them under the most unfavorable circumstances; meaning — by the most unfavorable circumstances, the most

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> unfavorable circumstances under which the quantity of produce required renders it necessary to carry on the production (7, p. 96).

Ricardo could conclude that since cost of production at the margin of cultivation determined the price of output, and since this land afforded no rent, rent was not an element in determining the price of output.

> The reason, then, why raw produce rises in comparative value, is because more labor is employed in the production of the last portion obtained and not because rent is paid to the landlord (7, p. 98).

The reasoning was somewhat circular, but the conclusion was essential to support Ricardo's theory of value. To have admitted to rent — the return for land which could not be attributed to the activity of labor, past or present — a role in the determination of price would have been inconsistent with labor being the source of value.

It can be seen that the concept of differential fertility in Ricardo's model is not as necessary to explain rent as it is to protect Ricardian value theory. But it is the concept of factor heterogeneity which has been central to subsequent interpretations of rent. This approach invariably leads to the problem of alternative uses.

Unless different qualities of land display similar heterogeneity with respect to all alternative uses, then it is possible to interpret rent as an opportunity cost for some alternatives. This was the case discussed by Mill (5, p. 508). But, this problem arises only if one is interested in describing the processes of factor allocation and choice of production techniques. These microeconomic questions were not primary concerns of Ricardo.

The difficulties imposed by alternative uses disappear when the Ricardian model is considered as a macroeconomic model rather than a microeconomic model. Ricardo's examples of corn production can be interpreted as a composite of the general agricultural sector. The issue of whether a unit of land should be used for peas or cabbage (Mill's example) does not arise. All land is used to produce a homogeneous agricultural product. Interpreted in this way, the Ricardian system can be viewed as a two sector growth model. The two sectors are agriculture and manufacturing. The only prices that matter are the relative prices of agricultural output and manufacturing output. The factors of production are land, labor and capital. Labor and capital are used in both sectors, but land is only used in the agricultural sector. The special circumstances of land (which may be described as either scarcity or decreasing fertility) imply that as the economic system expands, the growth of agricultural output will lag behind the growth rate in the manufacturing sector. The unequal growth rates will cause a secular rise in agricultural prices relative to manufacturing prices. The change in relative prices implies a transfer of wealth toward the agricultural sector. This transfer is manifested in terms of rent accruing to the owners of land. Assume that the growth of the capital stock is financed primarily out of the profits of capital owners in the manufacturing sector. As the relative price ratio changes and rents rise, manufacturing profits tend to fall. The potential for further growth is reduced. The overall growth rate falls and the system approaches static equilibrium.

Although still subject to criticism, the Ricardian model makes much more sense when interpreted in macoreconomic terms than when interpreted as a microeconomic model. However, to recognize the inappropriateness of the use of Ricardo's model as a microeconomic device, brings into question the relevance of the entire concept of rent as a term having special meaning for economic analysis.

If the concept of quality differences is abandoned, then rent must be related to factor scarcity. However, as Wicksteed and the other marginal productivity theorists showed, on this basis land rent becomes conceptually identical with other factor shares. If all factor shares merely reflect marginal value products of scarce factors, then there is no need for the term rent. It does not denote anything peculiar about one share as contrasted with others.

Such a conclusion, while easily adopted, may be too hasty. The marginal productivity approach provides complete explanation of distributive shares only if all factor supplies are constrained in essentially similar ways, i.e., if supply conditions can be ignored. Otherwise, the marginal productivity theory serves only to explain factor demand. It was this distinction which Marshall implicitly recognized, and which Pareto later spelled out in detail (6, sec. 745).

When stripped of the unnecessary concept of factor quality differences, classical economists associated the term rent with the return to non-augmentable factors. In the Ricardian model land was the one factor falling into this category. Such factors are deserving of special notice because their limitativeness restricts the potential growth path of the system, causing relative prices to change (2, p. 341). The distributive share of such factors merits a distinctive label, rent, because it affords a relative measure of the effect of factor limitativeness. In his discussion of quasi-rents Marshall perceived this and also perceived its logical extension (4, p. 411). The same effect may be produced by items of physical capital which — for short periods at least eight are fixed in quantity

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or subject to slow adjustment responses. Thus, Marshall described the distributive shares of such factors as rents also.

Pareto followed much the same path (6). However, he avoided the ambiguity which characterized Marshall's treatment. His three main points were as follows: (1) the concept of fertility differences is not essential to Ricardo's rent theory; (2) rent is the result of factor limitativeness which may characterize particular types of physical capital as well as land, and (3) the existence of limitativeness and the amount of rent may be explained by variations in the costs of producing new factor units (6, sec. 745-752). Rent may be defined as any return received by a factor in excess of the market interest rate (Marshall's rate of return on free capital) applied to the *original* investment (cost of production). Such rents can exist in equilibrium only if the *current* cost of production for new units of the factor type in question has risen above that prevailing in earlier periods. The higher *current* costs of producing new factor units may make new investment unattractive even through existing units, produced at an earlier time under a different cost structure are extraordinarily remunerative. This accounts for the limitativeness of the factor. The rent received by existing factor units is that part of factor income attributable to supply limitativeness.

It is important to notice that by this interpretation rent is not an addition to or contradiction of marginal productivity returns. Viewed from the demand side factor shares may still reflect marginal value products. The concept of rent is significant for looking at the same factor income from another perspective — from the often neglected supply side. The concept of rent, then, can be a useful analytic device for focusing on factor supply relations. But this usefulness is only possible if one eliminates from the theory the unnecessary and misleading results of incorrect application of the Ricardian model.

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