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**DOUBLE TROUBLE: MODERN MISREADINGS OF CANTILLON**

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# Double Trouble: Modern Misreadings of Cantillon

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## ABSTRACT

*Although the 18<sup>th</sup> century Franco-Irish financier Richard Cantillon is universally esteemed as an outstanding pioneer of economic analysis, his work is not immune to present-day misunderstanding. This paper identifies two current misreadings both relating to his concept of “intrinsic value.” Both need clearing-up.*

*(1) Anthony Brewer (1992) claimed to find a fatal flaw in Cantillon’s theory of value. The present author (1993) demurred. That objection has not been taken up (or dismissed) in subsequent discussion of Cantillon’s work. We therefore have unfinished business. (2) A second issue has emerged. Modern “Austrian” commentators (who express great admiration for Cantillon) are promoting a seriously erroneous misinterpretation of his theory of value. We think it is time both to put forward, against Brewer’s allegation, a stronger defence of Cantillon’s theory, and also to make the point that Cantillon’s conception is fundamentally different from how (some) “Austrian” admirers apparently see it.*

Key words: “intrinsic value”; distribution and value; “Austrian” theory; opportunity cost

JEL classifications: B11, B25, B31, B51

*\*Adapted from Strathclyde Discussion Paper 2015-06 to deal with “Austrian issue”.*

## I. INTRODUCTION

It is universally acknowledged that the Franco-Irish banker and merchant, Richard Cantillon (c1680 – 1734), was indeed, as Anthony Brewer entitled his 1992 study, an outstanding “Pioneer of Economic Theory.” Brewer describes him as “a real theorist, of a quite modern kind, with a clear vision of the economy as an interrelated system and a strikingly realistic analysis of how the system worked. Nevertheless, Brewer claims to find a major, indeed fatal, flaw at the heart of Cantillon’s analysis. He (mistakenly in our view) understands Cantillon as proposing, through his concept of “intrinsic value”, a dead-end “land theory of value”. While there is no question that Brewer’s is an informed and scholarly work, some twenty years ago the present writer (Grieve, 1993) questioned Brewer’s interpretation. That objection to Brewer’s reading seems to have fallen flat. Something more needs to be said for Cantillon’s analysis. This paper, in bringing a stronger argument to bear, again contends that Cantillon’s theory of value is free of the deficiency attributed to it by Brewer.

In dealing with the Brewer issue, we came upon a couple of recent observations concerning Cantillon’s analysis, which – with respect to the specific point at issue - accorded with our understanding rather than Brewer’s. These happen to be the views of modern “Austrian” authors. So far so good, but, on closer acquaintance with Austrian opinion on Cantillon, we find we are

confronted with another, quite different, misreading of Cantillon's concept of "intrinsic value". It appears that some modern Austrian scholars, expressing great admiration of Cantillon's work, wish to claim him as a forefather of their school and are attempting to foist on him a subjective theory of value of characteristically Austrian character. They therefore overlook, or try to overlook, Cantillon's explanation of costs as *objectively* determined not by subjective preferences but by the hard facts of property ownership and economic power. To claim Cantillon as a precursor of the Austrian school is, we think, fundamentally mistaken.

We therefore have two issues to deal with in this paper: (1), we have a disagreement with Brewer as to how Cantillon measured "intrinsic value", and (2), we are at odds with Austrian views over the very meaning of Cantillon's concept of "intrinsic value."

Let us first outline Cantillon's system, deal with the Brewer charge, then finally see what is similar, and more significantly, what is *different* as between Cantillon's conception and Austrian thinking.

## II. CANTILLON'S MODEL

In his *Essai* Cantillon describes the structure and functioning of a contemporary (early 18th century), largely agrarian, economy. (See Appendix, A1, A2) Farming is the principal activity, supported by the work of craftsmen – blacksmiths, tailors, etc in the villages and towns, with some manufacture of luxury goods in the cities. The significant institutional feature of this economy is that land is privately owned by a fortunate minority of the population.

It does not appear that Providence has given the Right of the Possession of Land to one Man preferably to another; the most ancient titles are founded on Violence and Conquest. . . . But howsoever people come to the property and possession of land we have already observed that it always falls into the hands of a few in proportion to the total inhabitants. (*Essay*, I, xi, 1)

Cantillon continues:

Supposing then that the Land of a new country belongs to a small number of persons, each owner will manage his Land himself or let it to one or more Farmers: in this case it is essential that the Farmers and Labourers should have a living whether they cultivate the Land for the Owner or the Farmer. The overplus of the land is at the disposition of the Owner. [T]hose [persons] having no Land of their own are compelled to offer [to the Owner or the Farmer] their Labour in order to live. (*Essai*, I, ii, 6 and I, ii, 4)

Rent and wages are the only income categories.<sup>1</sup> Property relations are of fundamental importance. The weak bargaining position of labourers against the economic power of the

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<sup>1</sup> In Book II of the *Essai* Cantillon comes close to recognising entrepreneurial profit on investment as a separate category of income, but in his general model, in Book I, profits in that sense do not appear. Income receipts are there treated as going either to rents or wages, with master farmers and master craftsmen receiving about one and half times the wage of an ordinary labourer. Asprougourgos (1989) remarks of Cantillon's *Essai* that "in a sense it stands between pre-capitalist and capitalist society, in some respect straddling both", and quotes

landowners leaves the landless majority with no more than a bare subsistence. Master farmers and master craftsmen fare little better than their labourers.

Cantillon presents a perceptive account of the working of the market mechanism in terms of market prices and “intrinsic values”, the latter corresponding to the “natural prices” of classical economics. If, in a particular market, demand and supply are currently unequal, the excess (or deficiency) of the market price relative to the intrinsic value will induce a supply-side response, thus bringing supply and demand into line and re-establishing the equilibrium or intrinsic value of the commodity in question. In this the entrepreneur plays a key role. Intrinsic values correspond to the usage of the basic productive resources of the economy - land and labour - required in the production of a commodity. Cantillon explains (*Essai*, I, x, 7): “the price, or intrinsic value of a thing, is the measurement of the quantity of land and labour entering into its production, having regard to the fertility or productivity of the land, and to the quality of the labour.”

### III. BREWER’S CRITICISM

Despite his high rating of Cantillon’s ability as an economic theorist, Brewer considers a central element of Cantillon’s system - his theory of distribution and value - to be marred by a fatal flaw.

In dealing with this issue, we take into account an important consideration unfortunately overlooked in our earlier (1993) review (and apparently overlooked also by Brewer): namely, the fact that Cantillon himself was fully cognizant of the valuation problem emphasised by Brewer. That surely clinches the matter: if Cantillon appreciated the nature of the obstacle - as he evidently did – he could not have proposed the sort of land-embodied theory of value attributed to him by Brewer. Let us look into the issue.

The problem Brewer finds with Cantillon’s theory relates to the conceptualisation and measurement of land as an input into production and therefore as a constituent of “intrinsic value”. This is where misunderstanding creeps in. Both Brewer (1988 and 1992) and Marian Bowley (1973) misread Cantillon. They interpret Cantillon as measuring intrinsic values in terms of *physical quantities* of land and labour “embodied” in commodities through production. Such an approach would face a major difficulty, particularly in respect of the quantification of land inputs.<sup>2</sup> Note: Cantillon actually translates labour costs into land costs, using the device of “the Par” (See Appendix, A3) which enables him to replace labour inputs, as directly contributing to intrinsic value, by the usage of land which provides the maintenance of the labour in question. This gives an alternative measure of intrinsic value in the form of total land entering (directly and

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Marx’s observation that “Petty, Cantillon and in general those writers who are closer to feudal times assume ground rent to be the normal form of surplus value in general, whereas profit to them is still amorphously combined with wages” (Marx, 1967, Vol, III: 783-784). See also Prendergast (1991).

<sup>2</sup> While heterogeneous labour inputs can conventionally be made commensurate by adding together numbers of workers of different skills, these numbers being weighted by wage differentials, giving a total *number* of “standard” workers, it is not possible to add together in real, physical units parcels of heterogeneous land, each possessing its own characteristics and properties - to estimate an economically relevant *physical quantity* of “land in general”.

indirectly) into commodity production. If relative values were to be explained (wholly or partly) in terms of physical quantities of land inputs, it would be essential to be able to measure and quantify different pieces of heterogeneous land as “land in general”. Measurement would have to be made not in, say, acres, but in *economically relevant* terms, comprehending the varied characteristics and properties of different sorts of land.

An insuperable difficulty, however, is that, with innumerable types of land, it is simply not possible to find some real (physical), and at the same time, relevant measure by which parcels of different land may be aggregated as a single quantity of “land in general”. There can be no feasible way of calculating what physical quantity of “land in general” is represented by heterogeneous pieces of land embodied in any particular commodity. A land-embodied theory of value is therefore ruled out.

Brewer (1992) and Marian Bowley (1973) both make much of this state of affairs as destroying the real-world applicability of *what they understand to be* Cantillon’s theory of value.

Thus Brewer (1992, p.70) alleges that Cantillon simply dodged the problem:

In effect, Cantillon assumed that land could be reduced to a common denominator and treated as if it were homogeneous, in contrast to his treatment of labour, where he was careful to explain the reasons for wage differentials.

Cantillon’s idea was to explain money prices by real, permanent factors (land and labour), and to express these in terms of land alone. Heterogeneity of land evidently poses a serious problem for a land theory of value. He seems not to have had any satisfactory solution to the problem.

And Bowley (1973, p.105):

[I]t is impossible to convert one piece of land into another piece of land in terms of some purely physical scale . . . Cantillon . . . never discussed the problem of the relative . . . values of different pieces of land at all, he merely suggested taking into account different qualities and fertilities of land in calculating intrinsic values. Thus he never considered the question “What is to be done with heterogeneous land in relation to its intrinsic value, how is its quantity to be assessed? It seems that Cantillon did not notice the existence of the difficulty. He therefore, presumably, did not notice that heterogeneous land could not be handled in a physical input concept of intrinsic value and that some means of pricing land, of valuation in the market sense, was required.

And she (bluntly) adds (Bowley, 1973, p.106) it is evident that:

... this difficulty which destroys Cantillon’s concept of intrinsic value as the general basis of a general theory of value has a marked family likeness to the difficulty arising from differing capital structures which upset Ricardo’s Labour-input theory.

From the Brewer-Bowley perspective Cantillon is perceived to have made the disastrous blunder of presenting a land-embodied theory of value *completely irrelevant* to the real world of heterogeneous land. But Brewer and Bowley have got the wrong end of the stick as regards Cantillon's theory of value. *The problem with heterogeneous land is beside the point as regards the validity of the Cantillon theory.* Cantillon appreciated that that the (physical) quantity of land route was not one which could be taken in explain relative values, and chose a different approach. He side-stepped the impossibility of (relevant) physical aggregation of heterogeneous lands by measuring and quantifying different types of land in terms of *money value* – the rent the entrepreneur is obliged to pay for use of the land.

#### IV. CANTILLON ON INTRINSIC VALUE

A critical fact that Brewer and Bowley have failed to appreciate (and what our 1993 paper unfortunately failed to bring out) is that Cantillon *did* understand the difficulty of measuring and comparing heterogeneous commodities by reference to physical characteristics. He realised that some alternative “common measure” was essential. He explains:

. . . Men have been forced of necessity to employ a common measure to find in their dealings the proportion and the value of the Products and Merchandise they wished to exchange. The only question is what product or Merchandise would be most suitable for this common measure, and whether it has not been Necessity rather than Fancy which has given this preference to Gold, Silver or Copper which are generally in use today for this purpose.

Cantillon makes the point that, even for the relatively simple purpose of comparing of the value of the Par under different circumstances, the use of physical measures of land and labour can be problematical:

The Money or Coin which finds the proportion of values is the most certain measure for judging the Par between Land and labour and the relation of the one to the other in different Countries where the Par varies according to the greater or less produce of the land allotted to those who labour. (*Essai*, I, xi, 18)

If, for example, one man can earn an ounce of silver every day by his work, and another in the same place can earn only half an ounce, one can conclude that the first has as much again of the produce of the Land to dispose of as the second. (*Essai*, I, xi, 19)

In Part II of the *Essai* Cantillon returns to the practical necessity of expressing values in monetary rather than real terms.

In this second part, *after summing up the different degrees of fertility of the land in countries and the several different kinds of produce it can bring forth with the greater abundance according its intrinsic quality*, and assuming the establishment of Towns and other Markets to facilitate the sale of these products, it will be shown by comparing exchanges which may be made, wine for cloth, corn

for shoes, hats, etc and by the difficulty which the transport of these different products or merchandises would involve, that it was impossible to fix their value, and there was absolute necessity for Man to find a substance easily transportable, not perishable, and having by weight a proportion or value equal to these different products and merchandises, necessary or convenient. Thence arose the choice of Gold and Silver for large business and of Copper for small traffic.

(*Essai*, II, i, 1) (Emphasis added)

Thus, *explicitly*, Cantillon associates heterogeneous land with a problem of measurement. When land is of “different degrees of fertility” and produces “different kinds of produce” its measurement (as contributing to intrinsic value) in economically relevant *real* units is simply not feasible. Again, in Cantillon’s words, some “common measure” is essential. The solution: the most serviceable way of expressing and comparing intrinsic values consisting of heterogeneous land inputs is in terms of money. In a money-using economy, once rental and wage costs (and deriving from these, commodity prices) are quoted in terms of money, *commensurate valuations* - meaningful comparisons – which otherwise would be impossible can then be made. Agents are able to identify and compare values without ever having to work out an inventory of the “embodied” physical resources which underlie these money values.

To sum up: we believe that Cantillon’s explanation of the nature of “intrinsic values” (long-run equilibrium values or “natural” prices) was more sophisticated than sometimes realised. The fact that he appreciated the impossibility of explaining relative values simply by physical quantities of land embodied surely clinches the matter, clearing him of the charge of putting forward a land-embodied theory. What Cantillon actually proposed was a cost of production theory which, with wages and rents exogenously given, measured intrinsic values by the *monetary expenditures* made on inputs of land (of all sorts) and labour by producers.

Before proceeding further we must deal with Bowley’s suggestion that any such cost of production theory is at risk of circularity, as, for example: “rents determine prices, and prices determine rents.”

It would appear that Brewer has not fully understood the economic implications of the social order portrayed by Cantillon. In the Cantillon model, costs of labour and land are pre-determined exogenously to the price system - reflecting socio-economic power within society. Wages are given at a conventional subsistence level; technology is as it is and thus is given also the potential output of any particular piece of land, and therefore the surplus product (if any) of land left for rent. Prices serve to give effect to the factors determining distribution. Landlords set a rent which ensures that their tenants retain only some limited portion of the produce; from the point of view of the tenant-farmers rents are a pre-determined charge on their work. Farmers must accordingly set prices so as to cover from sales receipts (net of other costs) the rents they are obliged to pay. Manufacturers’ prices must likewise be able to cover the rent element in the prices of agricultural produce they buy. Allowances for rent charges are thus built into the prices at which goods are offered on the market. That situation eliminates the potential ambiguity highlighted by Brewer: commodity prices are governed by rent, not *vice versa*. (Relative values depend, *ceteris paribus*, on distribution; see Appendix A4.)

Note that in the illustrative model of the Cantillon system presented in the Appendix intrinsic values can be calculated only when (given output) wages have been specified. The model thus mimics the “real” economy in that intrinsic values emerge in the market after wages have been exogenously determined (according to the relative bargaining strengths of proprietors and landless labour).

Note also Tony Aspromourgos’s (1989, p.365) comment on the potential circularity of cost of production theories of value. He refers to the “well-known circularity” which pertains to

all cost-of-production theories of prices: in general, costs of production cannot be known independently of prices. On the other hand, *no such logical difficulty arises from treating wage-rates as data*. . . . It is also evident that at many points in the *Essai* that Cantillon treats a real wage as given by a customary mode of living. . . . Thus Cantillon treats a normal real wage and wage relativities as determined independently of prices and outputs. Wages are assumed given both in the analysis of production and allocation and in the analysis of income distribution and prices.

(Emphasis added)

We now come directly to the matter at issue: Cantillon’s theoretical handling of heterogeneous resources, labour and land, especially the latter.

Note first how Cantillon deals with heterogeneous labour. Perhaps Cantillon’s most generally known (*via* Adam Smith) theoretical contribution is his explanation of wage differentials in terms of the costs incurred in training a worker to a trade. It is necessary that these costs be in time made up for by correspondingly higher remuneration. Cantillon observed:

[If a father puts his son] to a Trade he loses his Assistance during the Time of his Apprenticeship and is necessitated to cloath him and pay the expenses of his Apprenticeship for some years. The Son is thus an expense to his Father and his Labour brings in no advantage till the end of some years. . . . A Husbandman would never be willing to have a Trade taught to his Son if the Mechanics did not earn more than the Husbandmen.

(*Essai*, I, vii, 2)

Intrinsic value corresponding to the “quantity and quality” of heterogeneous labour required in production is measured by summing up the differing wage costs the employer has to pay for workers of different capabilities.

Cantillon gives an example. Comparing two suits of clothes, one of fine and one of coarse cloth, each made from the same quantity and quality of wool, he attributes the higher value of the fine suit to “more work and dearer workmanship” (*Essai*, I, x, 15). That suit is more expensive, not simply because it involves more work, but is the product also of better-paid work. Intrinsic values, measured in terms of money wages, correspond to the “quantity *and* quality” of labour.

Water on the streets of Paris, because water from the Seine is free, costs only the wage of the water-carrier.

The price of a pitcher of Seine water is nothing, because there is an immense supply which does not dry up; but in the streets of Paris, people give a sol for it – the price or measure of the labour of the water-carrier. (*Essai*, I, x, 6)

Note that the intrinsic value of the labour of the water-carrier is expressed by Cantillon in terms of the money paid, not as an actual quantity of labour.

As regards heterogeneous land we understand Cantillon to follow exactly the same procedure as with heterogeneous labour. That is to say, he makes land of different types commensurate in terms of money costs as represented by the rent which has to be paid. The “quantity” of pieces of heterogeneous land is interpreted as the sum total of rents demanded for the lands in question. Land counts towards intrinsic value by its cost (rent) to the entrepreneur – not directly by whatever area the land might be. For instance: Cantillon (*Essai*, I, x, 5) makes the point that the price of standing timber is “fixed by the matter or produce of the land, according to its goodness”. That is to say, the woodcutter has to pay for the right to fell the trees and what he pays reflects the value of the timber on the market. The rent paid by the woodcutter, which must be covered by the price at which he sells the cut timber, corresponds to the net value (less wage costs) of the product, not simply to the area of land on which the trees are grown.

Cantillon also refers to mining. “The real or intrinsic value of metals is like everything else proportional to the land and labour that enters into their production”. (*Essai*, I, xvii, 2) The (direct) land element in the value of the metal is “considerable only so far as the owner of the mine can obtain a profit from the work of the miners”; i.e., only if a mine is sufficiently productive to yield surplus value over the cost of working it, does the owner get a rent. Again, it is not the physical quantity of rented land, but the land’s (net) revenue-producing capacity that determines the rent extracted by the landowner.

If, observes Cantillon, a gentleman builds a garden on his land, the price that garden may fetch on the market may exceed or fall short of its intrinsic value. If a would-be purchaser bids for the garden, the money price he offers will reflect the perceived virtues of this particular piece of land.

## V. COMPLEMENTARY READINGS (AND AN OMINOUS SURPRISE)

The Bowley-Brewer “quantity of land” interpretation of Cantillon’s value theory is not universally accepted. Compare Tony Aspromourgos (1989) who makes our point, though without directly confronting the Brewer-Bowley argument.

Cantillon’s treatment of prices takes its bearings from a fundamental distinction between “intrinsic value” and market price. The intrinsic value of anything is “the measure of the quantity of Land and of Labour entering into its production, having regard to the fertility or produce of the Land and to the quality of the Labour.”

*Essentially, the intrinsic value of a commodity is the sum of the costs of the various kinds and quantities of labour and raw materials which are employed in its production.* (Emphasis added.)

Aspromourgos is certainly not an “Austrian” theorist, but it happens to be the case that members of that school, with whose attempts (see below) to turn Cantillon into an “Austrian” we strongly deplore, actually do recognise that Cantillon did not make the mistake of treating inputs of heterogeneous land as if they were homogeneous.

Thus Mark Thornton (2010) writes:

Cantillon viewed all resources as heterogeneous. Each piece of land was of a different quality, each labourer was also of a different quality. Therefore, while intrinsic value was a measure of cost, it was not possible in fact to simply count the number of hours and acres except in an abstract way or in simple illustrations.

Thornton, it would appear, (though not mentioning Cantillon’s solution of using money values) would not go along with the Bowley-Brewer contention that Cantillon was prepared to put aside the heterogeneity of land and “simply count the number of acres”.

Similarly, another “Austrian” commentator, Jörg Guido Hülsmann (2000):

There can be no doubt that what Cantillon had in mind, in using the phrase “intrinsic value”, was a quantitative evaluation of land and labour and that this evaluation could only be cast in terms of market prices. Cantillon thus anticipated the importance of money prices, emphasizing their unique importance for economic calculation.

We mentioned above that, on looking further into the Austrian treatment of Cantillon, a new - and major - issue presents itself. Members of the Austrian school express the highest admiration for Cantillon as an economic theorist – which is not at all surprising, but what is unexpected is that some at least of these modern Austrians apparently wish to claim Cantillon – as a “proto-Austrian”, even as a member of the “Austrian” school? <sup>3</sup> That surprising objective cannot be allowed to pass without comment. The situation looks ominous. Given the fundamentally different conceptions of the working of the economy – those of Cantillon and of the Austrian school – we suspect gross misinterpretation of Cantillon. On investigation we find that to be so: modern Austrian misunderstanding of Cantillon is what we mean by the second “modern misreading” to which the title of this paper refers.

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<sup>3</sup> The present writer wishes to mention that, only when this paper, including criticism of Austrian treatment of Cantillon, was virtually completed, did he (with thanks to Tony Aspromourgos) become aware of the powerful criticisms (Peter Groenewegen, 2012; Matteo Menegatti, 2016) made against recent Austrian efforts to represent Cantillon as an ancestor of their school of thought. *The credit for discovering and reporting this unfortunate Austrian enterprise belongs wholly to these authors.* The present author has found Menegatti’s of great value in elucidating the Austrian attempt to transform Cantillon’s objective concept of intrinsic value into Austrian subjective value.

## VI. THE AUSTRIAN “TAKE” ON CANTILLON

Austrian writers hold Cantillon in the highest regard. For instance, Murray Rothbard (probably the leading figure among modern “Austrians”), avers that “the honour of being called ‘the father of modern economics’ belongs ... not to its usual recipient, Adam Smith, but to a Gallicized Irish merchant, banker and adventurer who wrote the first treatise on economics more than four decades before the publication of the *Wealth of Nations*.” Rothbard explains: “[The antecedents of modern economic thought are to be found] half a century before Smith’s *Wealth of Nations* . . . not in Britain but in France. More significantly, the French writers [Cantillon pre-eminent among them] must be set down not as pre-Ricardian but as proto ‘Austrian’, that is, as forerunners of the individualistic, microeconomic, deductive and subjective-value approach that originated in Vienna in the 1870s.” Mark Thornton (2005), rates Cantillon even more highly “. . . the title of the best economist in history, I would give to Richard Cantillon.”

Praise indeed. The reason for Austrian scholars’ particular admiration of Cantillon must be that they find (or claim to find) in him a conception of economic reality closely akin to their own – and different from the “classical” political economy associated with Adam Smith and David Ricardo. While not all “Austrians” share that view (see below), it is clear that a strong body of opinion does regard Cantillon as a pioneer of “Austrian” thinking. Can that opinion be justified?

What characteristically “Austrian” elements can be found in Cantillon’s work? <sup>4</sup> One feature of Cantillon’s account of how markets work is the key role he gives to the “entrepreneur” (his word) whose operations, always under uncertainty, serve to coordinate the disparate plans of buyers and sellers in the market. To quote Rothbard again (2010):

One of Cantillon’s remarkable contributions to economic thought is that he was the first to stress and analyze the entrepreneur. To this real-world merchant, banker and speculator, it would have been inconceivable to fall into the Ricardian, Walrasian and neoclassical trap of assuming that the market is characterized by perfect knowledge and a static world of uncertainty. The real-world marketplace is permeated by uncertainty, and it is the function of the businessman, the “entrepreneur”, to meet and bear that uncertainty by investing, paying expenses, and then hoping for a profitable return. . . .

As Professor Tarascio has pointed out Cantillon’s pioneering insight into the pervasive uncertainty of the market was largely forgotten and before long dropped out of economic thought until independently resurrected in the 20th century by [Frank] Knight and such modern Austrians as Ludwig von Mises and F. A. Hayek [and, one might include, Maynard Keynes].

Austrians do like Cantillon’s recognition that it is *subjective* factors, not the mere application of labour, which give value to commodities. Thus David O’Mahoney (1985):

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<sup>4</sup>That question is posed here with reference specifically to elements of *theory*, without going into wider questions concerning methodology and epistemological focus.

Demand . . . as [Cantillon] says repeatedly, depends on humour, fancies, mode of living, and the like. And he seems to contend that it is these humours and fancies that ascribe value to things. It is the “consent of mankind” which gives a value to “Lace, Linen, fine Cloths, Copper and other Metals” just as it does to gold and silver. None of these things is essential. People could subsist without any of them. But they choose not to, and by so doing ascribe value to them.

A further, quintessentially Austrian, element of Cantillon’s theory is his appreciation (indeed, it is said, his discovery) of the concept of “opportunity cost”. Thus Thornton (2007):

. . . land could be used to grow corn or to provide hay for horses. Labour could toil on the farm or be trained for a craft. Cantillon clearly saw that when a landlord chose to own more horses, what he was giving up was the production (and sale of grain, and that if France wished to import fine lace, then she would have to forego a large amount of wine produced from her vineyards. Cantillon understood the concept of opportunity cost, and his *Essai* was an attempt to construct the concept to explain economic choice.

There can be no dispute about the fact that certain ideas – fundamental to Austrian economics – are to be found in the work of Richard Cantillon: Cantillon appreciates the role of the entrepreneur, understands that it is demand against current supply that determines day-to-day price in the market, and recognizes that application of resources to a particular use precludes enjoyment of the product of alternative usage. But is that enough to make Cantillon an honorary Austrian? A precursor – possibly yes, in these respects we have enumerated, but *fundamentally* an Austrian? In other words, can Cantillon legitimately be considered, as Mark Thornton (2007) claims, “a member of the Austrian School”?

We believe not. Our understanding is that Austrian theorists have found no way of reconciling Cantillon’s “intrinsic value” with their particular vision: in fact there can *never* be a way of making “intrinsic value” compatible with the Austrian thesis that *all* values – of “lower” and “higher order” goods alike<sup>5</sup> - derive from direct or indirect contributions to subjective satisfaction,<sup>6</sup> (and, other side of the coin that costs consist of satisfaction foregone). The problem with the Austrians is in fact more fundamental than that with Brewer. The Brewer misunderstanding concerned the measurement of intrinsic value; the Austrians seem not to understand the very nature of Cantillon’s concept. There is nothing subjective about it. For one

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<sup>5</sup> “Lower and higher order goods”: In Austrian usage goods are “ordered” according to closeness to, or distance from, the final user in the sequence of production operations. Production of, say, shoes is a lower order activity, whereas the manufacture of shoe-making machines is of higher order and steel production of an order even higher.

<sup>6</sup> “The determining factor in the value of a good, then, is neither the quantity of labour or other goods necessary for its production nor the quantity necessary for its reproduction, but rather the magnitude of importance of those satisfactions with respect to which we are conscious of being dependent on command of the good. This principle of value determination is universally valid, and no exception to it can be found in human economy.”

“Hence the principle that the value of goods of higher order is governed . . . by the prospective value of the product, is the universally valid principle of the determination of the value of goods of higher order.”

(Menger [1871], 1976, pp.147 and 156)

thing, intrinsic value refers to objective physical inputs, to the quantities of land and labour needed for the production of commodities; secondly, the hire prices of rent and wages which the entrepreneur has to pay to command these resources are determined by the will of the landowner as to how much of the produce of his land he keeps for himself, or allows for those who actually work the land. Neither subjective valuation of the produce nor of the disutility of work play any part in determining wages; it is socioeconomic power, together with technology – not preferences – that determines intrinsic value

While it looks very much as if Austrian theorists would love to include Cantillon as one of their own, that wish must inevitably come to grief on the stumbling block of intrinsic value. We shall cite instances of Austrian attempts to cope with Cantillon's intrinsic value, but before we do, we draw attention to what looks suspiciously like a propensity to pre-judge and "Austrianize" his analysis – by down-playing intrinsic value – pushing into the background that key component of his theory which sits so uncomfortably with Austrian thinking. This hardly suggests open-minded appraisal of Cantillon's theory. Thus we find (Rothbard, 2010):

Cantillon engaged in the first sophisticated modern analysis of market pricing . . . [He] was largely interested in price formation in the real world – i.e., actual market prices – rather than in the chimera of long-run "normal" pricing.

Similarly (Hülsmann, 2007):

Again and again [Cantillon] underscores the crucial importance of market exchanges, characterizing the market price as the *prix de la vérité* (true price).

Why "chimera"? Not to mince words, this focus of Rothbard and Hülsmann on market prices to the neglect of intrinsic value is a travesty of Cantillon's explanation of the operation of the price mechanism. Whatever may have been in Rothbard and Hülsmann's imaginations, Cantillon certainly did not concentrate narrowly on market prices: it is to intrinsic values that, in his model, prices naturally gravitate. He is explicit: market prices oscillate about intrinsic values.

There is never a variation in intrinsic values, but the impossibility of proportioning the production of merchandise and produce in a State to their consumption causes a daily variation, and perpetual ebb and flow in Market prices. However in well organized Societies the Market Prices of articles whose consumption is tolerably constant and uniform do not vary much from the intrinsic value. (Essai, I, x, 11)

Note Mark Thornton's (2005) extraordinary comment. Wishful thinking?

When you read the *Essai* you get the distinct impression that Cantillon could not have meant what we understand today as intrinsic value, or that he believed in a truly objective measure of cost.

It is hinted too (Finegold, 2010) that, as so much of Cantillon's analysis is congenial to Austrian readers, "failure" to complete his whole theory in such terms was probably attributable, not so

much to intent, rather to want of contemporary guidance to help him to find a more Austrian route:

Cantillon surprisingly also introduces a kernel of the subjective theory of value. While Cantillon [was] unable to fully break away from an objective theory of value, and thus offers his explanation for intrinsic value, he nevertheless concedes that this “intrinsic value” is not the one that manifests itself on the market. [We may suggest], given that Cantillon was operating at a time when there was no subjective theory of value, nor any marginal theory of value, it was difficult for him to reason outside of the existing paradigm of “objective value”

So - Cantillon only put forward “intrinsic value” for want of something better? Perhaps this non-Austrian concept is best ignored? Note further: the statement that intrinsic values don’t appear on the market is, of course, a blatant misrepresentation of Cantillon.

## VII. CANTILLON – AN EARLY “AUSTRIAN”?

Let us now turn to attempts made to read Cantillon as an “Austrian”. That would require neutralization of Cantillon’s concept of intrinsic value.

For example, David O’Mahoney (1985) argues that we don’t need to think of intrinsic value as implying a cost of production theory of value of the classical sort: “Certainly many of Cantillon’s remarks could be cited in support of a [cost of production interpretation] of [his] position. But it is also possible to see another side to it.” In other words O’Mahoney believes that “intrinsic value” may be accommodated along with the Austrian theory of imputed (subjectively determined) values – or perhaps just ignored. On his reading of Cantillon, the fact that market prices (determined by demand against given supply) must cover costs of production does not mean Cantillon is proposing a cost of production theory; on the contrary: “*it is the prices offered that determine what production costs can be incurred, not that production costs determine what the prices must be.*” (Emphasis added)

While we might take that latter statement as a sophistical misrepresentation of conventional theory, prioritizing demand over costs, Rothbard supports O’Mahoney’s reading:

“Cantillon, then, did not foreshadow the classical equilibrium theory that cost of production constituted the long-run, and presumably therefore, the most important, determinant of market price. ... for Cantillon, cost of production had a very different function: deciding whether a business could make profits or else have to suffer losses and go out of business.” Similarly, Henry Hazlitt (2003), “. . . though what a good has to cost to produce cannot directly determine its value, what it will cost to produce determines how much of it will continue to be made. It is the limit that cost of production puts upon the total quantity of a good produced that determines its marginal value and therefore its market price. There is a constant tendency for marginal cost of production and market price to equal each other, *though not because the first directly determines the second.*” (Emphasis added)

This argument serves merely to create a superficial resemblance between the Austrian and Cantillon theories. In both theories, the market price, determined by demand against the current supply, is, in time, brought into conformity with cost of production. But costs of production do not mean the same thing in each theory. For the Austrians, costs of production represent the opportunity costs – utility foregone – incurred by using resources in as they are being used, rather than in some other utility-yielding application. Cantillon, on the other hand, while recognizing that a particular application of resources precludes alternative uses, sees production costs (of actual production) in objective terms: the “intrinsic value” of a commodity refers the “embodiment” within that commodity of a certain amount of the country’s basic resources, land and labour (or, ultimately, land). The cost of the commodity is made up the rents and wages which the entrepreneur must pay to secure the use of these resources. In setting rents (and simultaneously wages) the proprietor is thinking only of how little he can make the share of output to be handed over to farmers and labourers. Rents and wages correspond only to the landowner’s ability to keep for himself a portion of what is produced on his land. This is purely a matter of economic power, nothing to do with subjective preferences.

Consider now Mark Thornton’s (2005) “shocking” discovery.

I ... puzzled over Cantillon’s intrinsic value ... what I found is shocking. Cantillon’s phrase *intrinsic value* is actually used to denote opportunity cost – the defining concept of economics. ... [Cantillon] recognizes ... that the entrepreneur must try to anticipate the best way – among many - to put his lands and labour to use. Taken together, from start to finish, Cantillon’s intrinsic value is opportunity cost, in that he recognizes explicitly all the components that the modern term entails. Not only did Cantillon use opportunity cost implicitly, he used it in a precise and detailed manner for several key illustrations involving land, labour and capital.

We return to Thornton in a moment, but consider first what opportunity cost means to an Austrian. J. R. Pasour, JR (1978) makes crystal clear the incompatibility of Cantillonian intrinsic value with the Austrian idea of cost as opportunity cost.

[T] the opportunity cost of any activity is inherently subjective. ... Consider the cost to be imputed to (say) land in producing corn. The cost of land in corn is the value of opportunities foregone by using land for corn instead of using land in its best alternative use. ... The cost of similar land in corn may well be quite different for Jones and Smith. Jones, for example may anticipate a return to land of \$30 per acre when using that land for soyabeans (the best alternative use). Smith, on the other hand, ... may anticipate a return of \$50 per acre to land in soyabeans. Thus, the opportunity cost of land used in producing corn is \$30 per acre for Jones and \$50 per acre for Smith, even though Jones and Smith pay the same rental price for the land. This example illustrates the fact that the cost of land (and other inputs) as it influences the entrepreneurial decision (choice) is inherently subjective.

Austrians hold that the cost of putting land to a particular use is the estimated return it could earn from its next best application. If land is to be used in a particular way it must at least match that

opportunity cost. Likewise with labour: in Austrian theory the prices paid for land and labour are determined on the same basis – of opportunity cost, which in turn reflects consumers’ subjective valuation of output produced.

The puzzled (non-Austrian) reader asks - what has happened to rent and wages, the focus of Cantillon’s attention? The answer is that they have been transformed into opportunity costs – estimates of what land and labour could earn from alternative employment. Entrepreneurs determine, on the basis of opportunity costs, what they must pay for these inputs; the sellers of land and labour services then choose the best offers available to them (workers comparing wage offers against the discomforts of work).

Thus we have two answers to the question of what has to be paid as rent for land and wages for labour to command the services of these resources? The Austrians assert that rent and wages have to be sufficient to induce the required resources to forego alternative employments (the rewards in which, of course, derive from contributions to customers’ subjective satisfaction). On the other hand, Cantillon directs our attention to the circumstances under which the produce of the country is divided up between proprietors and labourers. The resulting shares have nothing to do with relative contributions to production, or the disutility of work, but – as we keep emphasizing – everything to do with the power of property. These rents and wages are exogenously fixed by forces outside the market.

To return to Thornton’s “key illustrations” intended to demonstrate “from start to finish” that Cantillon’s intrinsic value is actually opportunity cost. These concern (a) income presently foregone by taking an apprenticeship to learn a trade; (b) income foregone and expense incurred by a landowner who beautifies his property with terraces and canals; and (c) security foregone by lending for commercial purposes, with profit or interest charged in proportion to the risk incurred.

While all three Thornton examples may make sense as instances of opportunity cost, they are *irrelevant* to the matter at issue – demonstration of the identity of opportunity cost with intrinsic value. In case (a) the question is whether gain in the form of the higher lifetime earnings of a skilled tradesman justifies the temporary hardship of accepting the lesser earnings of apprenticeship. Both rates of pay - what a skilled man gets and what a trainee is paid – fall within a range established by current convention. Opportunity cost is relevant to choosing a position *within* that range. However, the *level* of that range, which is to what we refer when we speak of the general rate of wages, is, in Cantillon’s world, determined without reference to opportunity cost. As we have already emphasized, the weak bargaining position of landless labour fixes the wage at a mere survival level; neither preferences nor productivity come into the picture.

Consider case (b): to Cantillon, “intrinsic value” refers to the resources that go into making the garden. In deciding to use his land for pleasure, rather than for commercial gain, the proprietor of course incurs an opportunity cost. That however is something other than the price of the resources used to construct the garden. *Opportunity cost is one thing, intrinsic value quite another.*

Case (c): Cantillon was not thinking in Austrian terms of three factors of production - land, labour and capital: this example doesn’t seem to bear directly on the determination of rents or wages.

Thornton, it would appear, introduces these illustrations in order to argue that (a) if all productive operations incur opportunity cost; and (b) by “intrinsic value” Cantillon means costs of production, it follows (c) that “intrinsic value” must be understood to mean the same thing as “opportunity cost”. This argument was apparently the magic wand by which Thornton intended to turn Cantillon’s tangible and objective land intrinsic values into subjective Austrian estimates of costs. But he fails to pull off the trick.

It is quite extraordinary that present-day Austrian interpreters of Cantillon do not appear to appreciate the fact that the prices – rent and wages - of the productive resources of his system, land and labour – do not emerge out of a process of imputed values and market competition, but derive from socio-economic relationships within society. To repeat: what the landlords take, and what labour gets, are determined *exogenously to the market* by the superior economic power possessed by the proprietors. Cantillon’s conception of intrinsic value cannot be accommodated within the Austrian framework of thought.

Before we end our discussion of the Austrian view of Cantillon, we should note that not all Austrians seek to include him as a member of their school. F. A. Hayek [1931] (1967) referred to the division of output between land and labour “which is the foundation of Cantillon’s cost theory of value”. Vincent J. Tarasco (1985) (“the intrinsic values of all commodities have a definite basis for measurement in terms of factor inputs necessary to produce one unit of output”) and Robert F. Hébert (1985) would agree. We consider the latter’s summing up on the place of Cantillon relative to the Austrian school very much to the point:

Probably the most distinctive trait of the Austrian tradition in economics is its radical subjectivism. Menger reversed a century-old (British) tradition of explaining value in terms of production costs. He did this by making value depend instead on the subjective utility considerations of individuals who seek to satisfy their own wants. From this perspective Cantillon’s analysis was quite different. His value theory centered on the classical notion of objective, or intrinsic value

Hébert has put his finger on the irreconcilability of Cantillon’s and Austrian conceptions. While, as we have noticed, certain ideas are held in common, different understandings of the fundamental matter of cost rules out any notion of including Cantillon within the Austrian school.

## VIII. CONCLUSIONS

We arrive at the conclusion that Cantillon’s theory of value is innocent of the charge made against it by Anthony Brewer, and is as deserving of praise as are other more celebrated elements of the *Essai*. Further, as Cantillon’s is – unlike the subjective Austrian theory - a cost of production theory of value, we cannot accept that it be classified as “Austrian.” Subsequent filiation of Cantillon’s thought is with the Physiocrats and Adam Smith.

Cantillon’s analytical achievement was outstanding. He presents a clear and coherent picture of the working of a surplus-producing economic system of an essentially agricultural character, operating

at a time before capitalists' profits had been distinguished as a separate category of income. In these circumstances national income is divided between the proprietors of land and the landless majority who labour on the land or work up its produce. Distribution depends on the relative economic power of the parties concerned. Equilibrium relative values ("intrinsic values") are established through the market system, operating in a particular institutional context. These intrinsic values correspond to costs of production and reflect both current technology and the division of the available output (the share captured by the proprietors and the remuneration left for the workers).

We prefer Cantillon's treatment of distribution and value - on grounds both of logic and of realism - to later marginalist (including Austrian) approaches. In fact we go so far as to suggest that Cantillon's handling of these matters, even though set in an eighteenth century world, offers valuable guidance as to how to develop a generally applicable analysis – along "old" classical lines. Cantillon shares with Smith (and after him Marx) the understanding that the working of an economy cannot be explained without recognition of the socio-economic conditions which determine the relative economic power possessed by different classes within society.

#### A SIMPLE MODEL OF A CANTILLON-TYPE SYSTEM

We now introduce (A.1) a simple model to illustrate the Cantillon conception and demonstrate that "intrinsic values" of commodities correspond to the quantities and qualities of land and labour employed in their production. Initially – but only for manageability - we assume land and labour both to be homogeneous; we will in due course (A.2) drop that assumption and demonstrate the compatibility of Cantillon's theory with the existence of heterogeneous resources. We also illustrate (A.3) how Cantillon used the "Par" as indicating the division of the economy's produce between land and labour, and finally (A.4) we show how the structure of intrinsic values depends on the division of output between land and labour (a phenomenon incomprehensible from an Austrian perspective).

A1 Suppose a country possesses a given area of cultivable land, of uniform character. There are two social classes, landowners who draw rent and landless workers, mostly employed on the land, who earn a wage (corresponding to the accepted "mode of living") which reflects their weak bargaining position against the owners. Profits on capital do not appear as a category of income. Production takes place in two sectors – agriculture and manufacturing, with a specified technology used in each sector.

Two goods are produced: "commodity a" (agricultural produce, not distinguishing between basic foodstuffs, raw materials and luxuries) and "commodity m" (craft manufactures, both necessities and luxuries). Farmers use some of the "a" they produce for their own purposes (seed and food) and sell the rest to the manufacturers (materials, food) and to the landowners (food, luxuries). At the same time farmers buy in some "m" from the manufacturers. Manufacturers use raw materials from the farmers along with some of their own products (wage goods and equipment), and sell output to farmers and landowners. The farming and manufacturing sectors are thus interdependent, using as inputs their own and each other's products, grown on the land or worked up from its

produce. Both sectors supply goods directly to the proprietors. The system produces a surplus of output over current material usage. It is assumed that all incomes are spent, the landowners alone consuming luxuries as well as means of subsistence.

We suppose that 360 units of labour (360N) - working families - are employed and 650 units of land are cultivated (650L). As mentioned, labour and land are, merely for initial simplicity, each taken to be homogeneous. The economy is understood to be in a state of equilibrium with supplies adjusted to demand so that current market prices correspond to intrinsic values. (In equilibrium, manufacturers' sales receipts just cover costs of materials and labour; as far as the farmers are concerned, material and labour costs are covered with rent charges absorbing all surplus value generated over these costs.)

*Production functions of each industry*

Agriculture: 200N working on 650L use 80a to produce 390a;

Manufacturing: 160N use 80a + 50m to produce 190m.

The real wage is *given* as (0.5a + 0.25m) per unit of N; translating labour inputs into wage-goods, we have commodity inputs and outputs, thus:

Agriculture uses	180a + 50m to produce 390a
Manufacturing	160a + 90m to produce 190m
total usage =	340a + 140m
total output =	390a + 190m (disposable income = 230a + 140m)
surplus =	50a + 50m

*Relative values (“intrinsic values”)*

These are derived (*distribution exogenously fixed*) from the price-cost equations below:

Agriculture:  $180P_a + 50P_m + (50P_a + 50P_m) = 390P_a$  ( $50P_a + 50P_m =$  rent charges)

Manufacturing:  $160P_a + 90P_m = 190P_m$

Taking  $P_a$  as *numeraire*, intrinsic values work out at:

$$P_a = 1, P_m = 1.6, \text{ wage} = 0.9, \text{ rent} = 0.2$$

If we set  $P_a = \text{£}50$ , corresponding money values are:

$$P_m = \text{£}80, \text{ wage} = \text{£}45, \text{ rent } \text{£}10.$$

*Costs of production.* Production takes place over time: inputs used in time “t” to produce output available in time “t+1” were themselves produced in “t-1” and so on. Sraffa’s (1960) procedure of “reducing” inputs to their own earlier produced inputs allows identification of total resource usage over time. Applying the Sraffa procedure, we can describe the whole set of present and past inputs which have gone into the production of “a” and “m”. It is these inputs that make up what Cantillon calls the “intrinsic values” of commodities.

“Reducing” intrinsic values to their component elements, we find that one unit of “a” is made up (total land and labour used in production *over time*) of 0.643 labour + 2.097 land; likewise one unit of “m” consists of present together with past inputs of 1.51 labour + 1.2 land.

Confirmation: when valued in money terms, the values of these sets of inputs tally with the above calculation of intrinsic values: £50 per unit of “a” and £80 per unit of “m”. That is to say, intrinsic values correspond (in this example with homogeneous land and labour) to total input *quantities* of these resources, and also (with prices) to the *value* of these resources. *If (see below) inputs of land and labour were heterogeneous, such that we could not identify inputs as consisting of specific quantities of “land in general” (or “labour in general”) it would still be the case that intrinsic values corresponded to the total input costs (over time) of the resources purchased by entrepreneurs to produce the commodities in question.*

## A.2 Heterogeneous land

We must emphasise that we interpret the Cantillon theory *not* as a “land-embodied” theory of value, but as something quite different - a “cost of resources” or “*cost of land*” theory. By focusing on the *monetary cost* of hiring land, and not on the *physical quantity* of land, the theory is not limited in applicability to the case of homogeneous land. We demonstrate below that Cantillon’s approach holds good in the general situation of heterogeneous land where a land-embodied theory cannot apply.

We now drop the land homogeneity assumption and demonstrate the general applicability of the Cantillon approach. *When measuring intrinsic values in monetary terms, heterogeneous land poses no problem.* We refer to the model with homogeneous land and labour with which we have been working as “System One”. The homogeneity assumption was necessary only to set up the model. We now introduce “System Two” which is in all respects identical to System One, except except that land now taken to be heterogeneous.

As we showed for System One, intrinsic values can be envisaged as made up of the prices paid, over the whole course of production, by entrepreneurs for the land and labour used in the production of each commodity. Even if it is impossible to speak meaningfully of quantities of “land in general”, different sorts of land used can be quantified *a la* Cantillon in terms of money values. What we wish to show is that, in this further example with several varieties of land in use, relative prices correspond to the Cantillon thesis that “the price, or intrinsic value of a thing, is the measurement of the quantity of land and labour entering into its production, *having regard to the fertility or productivity of the land, and to the quality of the labour*”. The notorious difficulty of incommensurability in real terms of pieces of land of different types is a red herring. *Heterogeneity of land does not undermine Cantillon’s approach.* Cantillon had the matter covered: as regards the validity of his theory, whether land is homogeneous or heterogeneous is beside the point. It is the money values of inputs of land and labour inputs that matter.

Compare the agricultural sectors in our two systems. In System One 200 units of standard labour worked on 650 standard land producing per annum 390 units of commodity “a”. In System Two we have 200 standard labour again producing 390a, but working now on 500 acres of *heterogeneous* land. We suppose four types of land:  $\alpha$ ,  $\beta$ ,  $\gamma$  and  $\delta$ , each with its own characteristics, are used in production. We assume that these 500 acres of heterogeneous land comprise equal areas of the four sorts of land, i.e. 125 acres each, of  $\alpha$ ,  $\beta$ ,  $\gamma$  and  $\delta$ . Although the same physical area is available of each sort of land, these parcels of land are not of equal economic

significance. So, does encountering 500 acres with different properties bring us face to face with the Bowley-Brewer obstacle? No: here the *physical* incommensurability of parcels of heterogeneous land doesn't matter. If the rents on different lands are known, *as they are in the Cantillon model*, the Bowley-Brewer measurement problem disappears.

Consider System Two. Again, as in the case of System One, we suppose the real wage is conventionally fixed (with the same real value as in System One. In System Two, with four types of land, there is no measurement problem. We know, *being given exogenously to the price system*, the value of real wages (the same across the farming sector) and we also know the output of each type of land; the amount of output left for rent is therefore determined.

In System Two the agricultural sector consists of four sub-sectors – each cultivating one type of land. These farming sub-sectors interact with the manufacturing sector. Together with that sector these four sub-sectors produce a total output of 390a and 190m.

### *Production in System Two*

Agriculture: sub-sector  $\alpha$ : 50 standard labour using 20a on 125 land  $\alpha$  produce 135a  
 sub-sector  $\beta$ : 50 standard labour using 20a on 125 land  $\beta$  produce 105a  
 sub-sector  $\gamma$ : 50 standard labour using 20a on 125 land  $\delta$  produce 81a  
 sub-sector  $\delta$ : 50 standard labour using 20a on 125 land  $\gamma$  produce 69a

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 200 standard labour using 80a on mixed types of land produce 390a  
 i.e. 180a + 50m produce 390a

Manufacturing: 160 standard labour using 160a + 90m produce 190m

Total output    390a + 190  
 Total costs      340a + 140m  
 Surplus            50a + 50m (to rent)

### *Relative (intrinsic) values*

Note: the situation is that – assuming that output is matched intended demand - sales proceeds cover costs. On the better types of land, the higher sales proceeds serve to cover the higher rent charges incurred. We have price-cost equations:

Agriculture:  $100P_a + 50P_m + 80P_a + 50P_a + 50P_m = 390P_a$   
 (recognising that farmers' rent payments must be covered by sales receipts.)

Manufacturing:  $80P_a + 40P_m + 80P_a + 50P_m = 190P_m$ .

Prices (intrinsic values) with “a” as numeraire, are:  $P_a = 1$ ,  $P_m = 1.6$ ,  $w = 0.9$ ,  $\text{rent} = 0.2$ ;  
 alternatively, with  $P_a = \text{£}50$ , we have  $P_m = \text{£}80$ ,  $w = \text{£}45$ ,  $\text{rent} = \text{£}10$ .



Labour and land requirements:

for given wage per unit labour 0.70 labour + 1.35 land required per L;  
i.e. quantity of land needed to support 1 labour = 1.35 = “the Par”.

Land required over time (or contemporaneously) to support whole labour force  $(360N \times 1.35)$   
= 486 (of 650).

But the value of the Par tells us not only that so much land, *over time*, period by period, has been used to produce the output of wage goods (of period t-1) which is presently (period t) available for consumption; it tells us also (assuming production unchanging over time) how much land is *currently* devoted to the production of wage goods. In the present period (period t) production is being carried on which will only come to fruition at subsequent dates: some current production will become available in t+1, some in t+2, and so on. In other words, the various production activities which are currently being carried on and will contribute to the output of finished wage goods at future dates mirror exactly the pattern of past production activities which have contributed to the most recent output of finished wage goods (that of period t-1). That is to say, the pattern of past production matches the pattern of current production, with quantities of land and labour used at periods in the past corresponding to quantities of land and labour presently engaged in production activities which will be completed only over a number of periods into the future.

When therefore we find that the value of the Par indicates that 486 land went over time into the production of the output of period t-1, we can conclude that in the current period labour working on 486 land is engaged in producing, at various stages in advance of the work’s ultimate date of completion, wage goods for the support of labour in the future.

We deduce therefore that, presently, 486/650 - in other words, approximately 75% of the (homogeneous) land - is currently given over to support of the workforce. That is the significance of Cantillon’s Par. It is an indicator of the cost to the landowners of supplying - at the going standard - the means of support of the working population. As Cantillon puts it, the real “expense” to the landowners of the “wage-bill” is the output they forego since the produce of a proportion of their land has to be made available to the workers. In this instance, with the specified real wage corresponding to 1.35 units of land per worker, i.e. 486 (of 650) land must be allocated to providing subsistence for the whole workforce of 360 labour. (The 50a + 50m rental income derives from the remaining 25% of the land.) The value of the Par reflects, *ceteris paribus*, the balance of economic power between landowners and those who do not own, but work the land (with the conventions of a particular time and place coming into the reckoning).

#### A.4 Going further

By drawing Sraffa’s (1960) explanation of the relationship between distribution and relative values we may take the analysis of relative values a little further - further indeed than Cantillon himself took it. The point can be made that in the case of a surplus-producing economic system, even with a given endowment of land and labour and given technology, the set of (intrinsic)

values consistent with equilibrium is not unique. The particular set of values established depends on how the output available for distribution is actually divided between the competing claimants. If different divisions of the surplus between proprietors and workers are (at least conceivably) possible, intrinsic values can be determined only when the distributional situation is known. The reason of course is that the payments made for the services of labour and land which make up the intrinsic values of commodities vary according to the distribution of output between proprietors and labour.

Thus, by contrast with the Walrasian (or Austrian) perspective, relative values do not appear simply as indices of scarcity. *Ceteris paribus* – even given the same resources and technology – wage and rental rates and relative commodity values are not uniquely determined: they depend further on how surplus output is divided between the competing claimants. Let us, using our simple Cantillon-type model (with homogeneous land and labour), examine the implications of an alternative division of the surplus. The value of “m” relative to “a” with that particular division of the surplus, was (1.78/1.11), i.e. (1.6/1.00).

Our supposition initially was that the wage share of the total available output ( $230a + 140m$ ) amounted to ( $180a + 90m$ ) and the rent share to ( $50a + 50m$ ). The real wage per unit of labour consisted of ( $0.5a + 0.25m$ ) per unit of labour with rent at ( $0.077a + 0.077m$ ) per unit of land.

Now suppose different social circumstances with proprietors able to retain for their own use a greater proportion of the output of their lands: the Par takes a different (smaller) value. Production conditions are as previously supposed, with the same quantities of labour and land producing the same total output, of  $390a$  and  $190m$ . But distribution is different. With the real wage per worker lower at ( $0.25a + 0.25m$ ) per annum, total usage of land and labour required for the support of one worker is now only ( $0.539$  labour +  $0.830$  land). As compared with the previous scenario the value of the Par has fallen (from 1.35) to 0.83 land per unit of labour supported. The proprietors enjoy to a greater extent free disposal of their estates. Total rent appropriated by the proprietors has gone up to ( $0.35a + 0.22m$ ) per unit of land.

The structure of intrinsic values is now different, the reason being that the two commodities “a” and “m” use land and labour inputs, whose relative price has altered, in different proportions. With Pa as *numeraire*,  $P_a = 1$ ,  $P_m = 1.2$ ,  $w = 0.55$  (per unit of labour) and rent (on 650 land) = 0.61 per unit of land. Alternatively, in money values, with Pa (as before) = £50,  $P_m$  now = £60, wage = £27.5 and rent = £30.5.

It is evident from the altered pattern of prices that equilibrium relative values do not depend simply on demand and supply but reflect also the underlying factors of social and economic power upon which the distribution of income depends. *Even if this is only a “thought experiment” rather than a real possibility, the exercise reveals that relative values depend upon how output happens to be distributed.* We take it that the value of the real wage is exogenously given reflecting current social conditions.

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