A Model of Pure Plantation Economy: Comment[a]

By

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The very interesting and path-breaking paper presented by Mr. Best falls logically into two sections. The first deals with the main historical outlines of the slave plantation era and the second contains a mathematical model of the operation of the system. The two sections are obviously inter-related (if not inter-dependent), but I shall preserve the distinction made by Best for purposes of my comment. In the first section, I shall comment briefly on three conceptual issues, viz., the plantation, the distinction between hinterland and metropolitan economy together with the rules of the game and the use of typologies generally (as well as the typology of settlements). In the second section, I shall comment on the operation of the model.

I

The first and perhaps most fundamental issue involved in the model concerns the interpretation of the concept of the plantation. At some stages Best essentially alludes to the plantation as a physical phenomenon, ascribing to it more or less precise physical characteristics, such as its spatial boundaries, the physical commodities produced, its spatial location, etc. This is, of course, a very limited view of a *system*, but nowhere is the idea or the concept of the plantation fully discussed. My own preference which follows from a particular view of social philosophy is to interpret all social experience as essentially relational; relational in the sense that what gives reality to social experience are the relations between individuals and groups. Thus the same people, the same physical conditions of production, the same commodities produced, could give rise to an entirely different system if the essential relations between people were not those centred on "master" and "slave".

This failure to express clearly the characteristics inherent in the idea of the plantation has raised two very fundamental issues of interpretation. The first of these centres on the distinction made between the "hinterland" and the "metropolitan" economy. Strictly speaking, Best defines the essential difference as being expressed in terms of the locus of decision-making. But in fact the subsequent discussion takes place as if there were a sharp, clearly defined spatial distinction between the two economies. In effect, the geographical boundaries of the colonized territory delimit the hinterland econ-

[a]Editor's Note:
Thomas' Comment is restricted to the first version of Best's paper read at the Conference. This paper has since been revised twice and substantially altered, even in details such as notation. This second version arrived after Thomas' Comment was in proof and therefore it was not possible for the latter to make further adjustments in his Comment.

omy whilst the metropolitan economy is co-terminous with the geographical boundaries of the colonizing state. The second problem of interpretation follows on the fact that at various stages of the paper there is no clear indication as to what level of methodological aggregation the author is pitching. Are we at one stage discussing one plantation in one economy? Are we at a further stage discussing all plantations in one economy? Or are we at yet a further stage, discussing the whole system of plantations in all colonized economies? To none of these questions are the answers clear. Best's arguments implicitly (if not explicitly) move among these three stages quite fluidly. And, having not carefully expressed what he means by a plantation, the uncertainties created are logical ones since no one can deny the author the right to operate at whatever level of aggregation he chooses. Thus when we come to discuss the operations of the mathematical model we shall note that the consequences of this confusion are serious.

The other preliminary, though basic issue, I would like to comment upon is the use of typologies in classifying various aspects of the world economy and various stages of the evolution of the world economy. I have no objections whatsoever to the use of typologies, despite their alleged methodological limitations. They confer at least two important methodological advantages. First they can help in avoiding many of the purely semantic disputes which have plagued some areas of the social sciences. They can also help to prevent us from getting involved in what may be described as essentialist controversies. Thus, to take one of the most obvious examples, what is the advantage of pursuing passionately the answer to the question "what is meant by underdevelopment"? This is as sterile an occupation as any in which one can be involved. If we agree on the particular attributes of a country or a system, then we can classify them and define them in any way that suits our purpose. As long as there is agreement on attributes there is no need to search for the essential characteristics of any particular set of words that have been handed down to us. However, whilst one supports in general the use of typologies much of the advantage would be lost if one insists in setting up rival claims for particular typological descriptions. Thus colonial economy, dependent economy, imperialist systems, etc., can all be used interchangeably if there is clarity and consistency as regards the attributes of each of these systems.

Having made the broad distinction between the hinterland and the metropolitan economy the paper goes on to say: "In this designation inheres certain specifications regarding what may be called the general institutional framework of *collaboration* between the two. It would suffice here to note the five major rules of the game, as it were."[1] When I survey our wretched historical experiences, the last word I could imaginably use to describe the relationship between the colonizers and the colonized is, "collaboration". The relationship between the hinterland and metropolitan economy has been

[1] My emphasis.

based on the almost continuous use of violence, or the threat of it, by the metropolitan economy in order to safeguard its interests in the hinterland economy. As a consequence this has had a dehumanizing impact on the peoples of the hinterland economy, whilst those of the metropolitan economy have involved themselves in the most complex and contorted efforts to remove from their consciousness the products and consequences of their use of violence against the bulk of humanity. Collaboration should and indeed must be the most inappropriate description of such a relation.

The major "rules of the game" which govern "collaboration" between metropolis and hinterland have been classified by Best as *Inter Caetera,* the *Muscovado Bias,* the *Exchange Standard,* the *Navigation Laws* and *Imperial Preferences.* The first of these relates to the Papal Bull of 1493. The analogy (geographical!) of a sharp differentiation between the two economies can hardly be taken seriously. The relationship of the metropolitan to the hinterland economy has been historically a very flexible one, reflecting the domestic conditions and needs of the metropolitan area. And, with their capacity to define and re-define situations as they desired there was no need to commit themselves to inflexible positions. This was clearly expressed in the Muscovado Bias. Here, Best suggests the rule was designed to restrict the hinterland to terminal activity and the basis for this is the division of labour between the two economies. In fact the system was more comprehensive (indeed during this period Best denies the existence of labour!) and was designed to permit a general pattern of specialization of economic function between the two economies. The pattern of specialization shifted from time to time and this occurred wherever the existing system threatened the benefits which were directed to the metropolis.

The third rule of the game was the Exchange Standard. I find it difficult in the terms of the model which subsequently we have to discuss, to see the significance of this at this period. The hinterland economy was comprised essentially of a subsistence non-monetary sector. The returns to slaves (capital) were expressed in non-monetary units. The savers and investors were supposed to be identical persons and the expansion of a plantation depended on ploughed-back profits. If any financial intermediation took place this occurred mainly between the plantation owners. The institutions which were elaborated at that time had no relevance to the exchange standard. They depended essentially on the laws promulgated *within* the metropolitan countries in order to guide intermediation *within* those countries.

Historically, the fourth and fifth rules of the game were the vital ones in defining the pace and pattern of development of the economy of the colonial system. Changes in these laws were the chief guide to the pattern of production and trade in the colonial territories. When economically it suited Britain, for example, when she was industrializing rapidly (the free-trade era) preferences were abandoned and in turn this had vast repercussions on the colonial economies. It led to the abandonment of the slave system. Indeed over the long run of West Indian history these "preferential arrangements" have worked enduringly to our disadvantage. They have not only governed the terms of exchange of West Indian produce for metropolitan goods and services, but they have governed the terms of exchange of various categories of goods produced *within the West Indies.* As a general consequence this has in turn tended to reinforce the region's colonial structure of trade and production. It is clear therefore that the rules of the game did not have just a simple external expression but, of more importance to us in the West Indies, profound internal consequences.

Earlier it was pointed out that Best defined the distinction between metropolis and hinterland in terms of "locus of decision-making". Whilst this distinction was important the particular example Best uses is unfortunate. Describing the situation he claims that in both economies "adjustment centres on foreign trade and payments" and then goes on to differentiate by means of one critical variable, viz., "the locus of discretion and choice". In this particular example an important difference in the way in which trade originated in the metropolis and in the hinterland is being overlooked. In the metropolis trade developed essentially as an extension of the domestic market. Goods were produced first of all for the home market, and only after did export specialization develop. On the other hand, in the hinterland economies, at the very outset specialization in the production of goods for the metropolis governs economic activity. Indeed if it were not for the intrusion of spatial differentia into these two concepts in the method of Best's analysis, it would be recognized that in the heyday of the pure plantation system there can be no real distinction in the two economic systems! For there to be a distinction it must follow *not from the fact that adjustment centres on trade and payments and that the decision centres are different but from the recognition of the different origins of trade and payments in the two systems.*

The final points I would like to comment on are the three categories of "settlements" or "forms of organizing the hinterland economy" or forms of contact" to which Best refers. The author argues that the motives for initial contact were various and from these he has derived three categories of settlement, viz., plunder, exchange and production. He then goes on to distinguish the economies prior to emancipation on this basis. This classification does not conform to the pattern of historical development of the colonial slave-world. To my mind they represent a sequential process in which colonial territories were first plundered. After some time rudimentary exchange arrangements (trading posts) were established with the indigenous peoples and then finally production and settlement were organized when the potential of exchange had been fully exploited. In the process of organizing production, particularly in areas such as the Caribbean, the indigenous peoples who resisted this encroachment were decimated and the imported slave-system set in motion. And in this motion the essential characteristics were violence and exploitation.

It might also be noted here, that at this stage of the analysis Best is dealing with *all* plantation-type economies. Yet, for example, generalizations such as those centreing on the "Gall and Wormwood" period and the "Goveia Syndrome" relate only to one sub-type. That is one in which, after production has been organized, the extensive limit of production is rapidly reached. The colonial economies where this has occurred have been relatively few. The more typical situation was one such as Guyana (then British Guiana), where during the period of falling prices and profits, production changes took place through rapidly shifting cultivation patterns. Thus there may be a movement to virgin lands at the limits of the existing plantation or a shift from, say, riverain to coastal areas. In these ways the emphasis on improving slave productivity might have been lessened through finding new and more productive lands. And these adjustments were dictated not so much by rising costs (although these mattered), but by the fact that Britain had industrialized, and the Navigation Laws were no longer needed to secure her markets. In other words the system of protection dissolved because of developments in the metropolitan economy and not because of rising costs and inefficiency in the hinterland economy. These inefficiencies of the system have always existed. It was the Navigation Laws, like contemporary Imperial Preference, which obscured them.

II

My comments on the operation of the pure plantation model will centre on the mathematical model, the bare bones of which Best has presented to indicate the mechanism of adjustment of the system. In general the model, as presented, is perhaps too simple to deal with the complex realities of the pure plantation system. This tendency to over-simplification deserves mention because it may lead to conclusions which cannot be supported by the historical evidence.

There are two preliminary assertions made by Best which are questionable at the level of his own analysis. Firstly, he asserts that if an economy consists of 1, 2, 3 . . . *n* plantations this would make no difference to the analysis. This is obviously not the case. Even the simple cost and profit functions used by Best would have to recognize the complications which follow from the interdependence of these functions between plantations. Thus for example, the profit and cost functions of plantation 1, would depend on the demand for slaves in plantations 2, 3, 4 . . . *n* as well as output in these plantations and hence final selling prices of the products of all plantations. Similarly we question the validity of the second assertion, viz., that capital consists entirely of the number of slaves. Even if we ignore the essentialist fallacies involved in arguing whether the slaves were capital or labour, (when in fact they were slaves), surely capital was not limited to the number of slaves. In a Marxian sense one may argue that all capital is created by labour. But this is not the essence of the point raised here by Best. Many of the plantations had to rely on irrigation, sea-defence systems, clearing equipment etc. which were not produced in the plantation. These imported capital goods were surely part of the capital stock (and a very vital part) on which production depended. The creation of this capital depended on labour (and other!) inputs *outside* the hinterland economy.

On the basis of these two preliminary assertions the production function is postulated as one subject to diminishing returns. Output (P) is given as a function of the number of slaves (N). Thus we have $P = f(N)$ such that $f'(N) > 0$ and $f''(N) < 0$. It seems to me an unnecessarily gross over-simplification to operate with a one-factor model. This limitation to the model of the pure plantation holds true irrespective of whether slaves are treated as capital or labour. To ignore land, and to ignore the fact (given the exhaustible supplies of land implicit in the earlier analysis) that this must have a price attached to it, is also to ignore the fact of a possibly high degree of substitutability between land and slaves. Indeed, in some hinterland economies the elasticity of substitution must have been very high as it would have been dependent on the land availability situation at the time.

In Guyana, particularly during this period such substitutability was a major explanatory factor behind the shifting settlement patterns. The importance of this factor was perhaps greater than diminishing returns to the slaves. As a general proposition such a simple complication as a two-factor model would allow us to see clearly the "differences" in the adjustment mechanism as it operated in those hinterland economies which had reached the extensive margin of cultivation and those which had not. In fact substitutability was also important in the commodities produced. Implicit in the model is a one-crop system. But historically adjustment has taken place by shifting from sugar to coffee, to cotton, etc.

Even if we feel constrained to deal with a one-product-single-factor model, a further legitimate question is, what factors determined increases in the availability of slaves? At least four factors come to mind. First, we have the rate of natural increase in the slave population. This would depend on such factors as birth and death rates, the sex ratios (and here the plantation owners have a significant role to play!) Secondly, we have to take into account the rate of escape and recapture of Maroons. Best mentions this in his analysis but does not state explicitly the way in which this affects factor availability. Thirdly we have to note the net imports of capital (slaves) which depend on the numbers captured and brought from Africa. Finally, if we are dealing with one plantation in a multi-plantation system then the availability of slaves would depend in part on the possibility of plantations buying slaves from each other and thereby creating a local secondary slave-market.

These factors which help to govern the supply availability of slaves, serve also to emphasize three neglected aspects of the analysis of the adjustment mechanism. First, it emphasizes that the production function depends on *global* considerations. Thus the operations of the *total* plantation system is at all stages relevant. Secondly, it stresses the interdependence of individual plantations and hinterlands. Thus output, profit, and cost functions are for each plantation interdependent and this interdependence varies with the total number of plantation hinterlands, as well as whether there are 1, 2 . . . *n* plantations in any single hinterland economy. Thirdly, by focusing attention on the capture of Maroons (and the escape of slaves), it serves to show that as a system, the plantation cannot be defined in spatial terms.

A further comment I would like to make about the production function is the absence of technical progress. This absence certainly helps to simplify the analysis, but in the process it overlooks critical factors in development. A vast array of empirical data show that increases in total output in most economies have depended as much on technical progress as on accumulation of capital. In point of fact when the concept of technical progress is widened beyond purely "technological" considerations to embrace such factors as internal reorganization on the plantations, the dependence of output on technical progress is likely to be even greater. This comment does not presume that the technical progress functions were "neutral" or "biased" in one direction or another; that is a matter for specific factual investigation. But in general its exclusion from the simplest models, and in particular those which centre attention on adjustment to changes, is something to be avoided.

The next function dealt with by Best is the cost function. In this function

$$S = (w + mt + dnt + lt)N$$

All of the symbols are not fully explained, but w, m and l are described as constants. Since w and m represent the "Ackee and the Saltfish" sector respectively, in the input-output table and the author explicitly allows for changes in these, then to be constants they should be perhaps constant rates! But then this is not strictly necessary for the analysis. More fundamental, however, are the considerations raised in the previous paragraphs as regards the interdependence of cost, and profit functions, etc.

The cost function postulated is one of rising costs and from this the author argues that in the model the terms of trade as a consequence "deteriorates with expansion in the scale of the industry (i.e. the number of slaves, N, employed)". I am not certain that this follows from the function as stated, but in any event the very interesing question raised is what concept of the terms-of-trade does the analysis imply? As productivity changes are incorporated in the analysis and certainly implied in his function

$$P = U\,N^{\alpha} \text{ where } \alpha \leqslant 1$$

then the terms of trade concept is the "single factoral terms of trade". A continuous deterioration in this terms of trade concept implies a situation of immiserizing growth for the hinterland economy. If this was the case, why did plantation owners continue in operation? Was it because of the fixity and lumpiness of the capital employed? Was it because the plantation owners had relatively inflexible ideas about the ways to employ their capital? Or did immiserizing growth in fact take place in Phase Two? None of these answers is clearly given, or perhaps can be. But varying assumptions and interpretations of the historical data make for quite revealing answers.

The third function in the model is the investment function. Investment is a function of venture profit, either actual or expected. There are a few issues that can be raised here which would complicate the model but which would at the same time make the results more interesting. The investment function is not specified as being either gross or net. Presumably it is net. Whatever it is, investment to cover depreciation must have varied from economy to economy as well as from plantation to plantation. In low-lying areas subject to flood and where expensive irrigation and drainage systems were set up, depreciation charges must have been very high.

The concept of venture profit itself is not very clear. One is not certain whether it is net of charges on loan capital which plantation owners borrowed in Europe or not. If it is not "net" of fixed interest payments, then what was the relationship of venture profit to these fixed loan charges – which in the absence of equity issues would have been high – whenever recourse was made to the capital market? If however all investment was governed by ploughed-back profits, then these interest payments may have been irrelevant. As a consequence however, the investment function would have to be much more complicated. One of the difficulties in spelling out clearly the concept of venture profits is that it hinges so largely on incalculable factors, such as expectations, the social prestige attributable to land-owning, the attitudes of the plantation owners to their overseas possessions as compared with enterprises in Europe, and so on. Indeed this feature of "incalculability" is stressed by Best. Despite this, the author goes on to derive a profit maximization function which is based on the equalization of marginal costs and marginal revenue! Surely this denies (for the sake of mathematical convenience) the very vital factor stressed so much in every other instance.

Enough comment has perhaps been made on some of the functions to indicate the general lines of criticism I would like to advance on the other functions. In the interests of brevity I shall proceed directly to Best's own summary conclusions of the model and then offer a few concluding remarks. There are four main summary conclusions.

The rate of profit

(1) falls as N increases if $\alpha<1$

(2) falls as n (cost per unit of slaves) increases

(3) rises if w and m are reduced (provided they are not offset by an increase in l)

(4) falls with an increase in t. This effect is relatively larger, the larger is the relative import bill per slave (m).

It seems to me after analysis that (1) and (2) are necessary conditions, and not separately sufficient conditions for a fall in profit rates. An increasing N can be offset by a falling n, even if α remains constant or falls. Similarly changes in α can offset changes in N and n to the extent of increasing the profit rate. The same proposition holds for the third summary conclusion. If w and m rise this can be offset by rising prices per unit of output sold, and thus by itself the third conclusion is not a sufficient condition for falling profit rates. Indeed, conditions (1) and (2) and (3) become necessary conditions for a falling profit rate given *constant prices*. It might also be pointed out that in the fourth proposition, a falling terms-of-trade does not guarantee a falling profit rate unless all other costs per unit of output remain constant, i.e. conditions (1), (2) and (3) must be specified. To base conclusions about the adjustment mechanism on any one of these factors separately is incorrect.

In principle one might object to the use of profit rates as the key factor in the adjustment process. Profits might be central to the process in the case of one isolated plantation. However the system had its own criteria of efficiency which vary with the level at which the analysis is conducted. There are three such levels, viz., the global efficiency of the plantation system, the efficiency of a plantation economy, and the efficiency of a single plantation unit. If global efficiency – i.e. territorial resource specialization in the whole colonial system – operated to suit metropolitan interests, then the system would be supported (through preferential arrangements) irrespective of efficiency at the other two levels. Conversely, no matter how efficient or profitable the system might be at the level of the individual economy or plantation its survival was not ensured unless it coincided with the global efficiency of the colonial system. If this point is recognized then the key to this wretched period of human history lies in an interpretation of the *overall viability of the colonial system as a slave-system.* And in this viability the factors which mattered most (because of the power-structure) were the metropolitan views on how their self interests were best served. These were only in small measure correlated with profit rates for individual plantation operators and owners; or for that matter with the fortunes of individual colonized territories.

Some of this analysis is reflected in the accounting framework provided by Best. The interesting points lie in the classification of sectors as there is no attempt by the author to go outside the basic and useful input-output matrix. The sectors chosen reflect the key elements in the process as seen by the author. It provides for very useful insights into the operation of the system. In many respects this framework is potentially superior to the use of simple *marginal* analysis to explain what were effectively large *structural* adjustments. No explicit attempt is made in the paper to dynamize the matrix formulation of the problem. It is also true that of and by itself the matrix formulation does not indicate lines of causation. But no doubt an attempt will be made to dynamize the model after the lines of causation are inferred from existing data. The difficulties perhaps will be found when attempts are made to quantify the data for these sectors from existing historical sources. The description of sectors like the description of other elements in the model borders very closely on the "gimmicky", but this is a linguistic problem that can also be easily overcome.

On the whole the paper has provided so much insight that the comments offered here have been rather long. Yet they are by no means exhaustive! This surely indicates how fruitful and stimulating the work being attempted by Best and Levitt will eventually become. One awaits the final results of their pioneering endeavours with great eagerness.