Linkages and Multiplier Effects in the Ecologically Specialized Trade of Precolonial West Africa.
Monsieur Richard Roberts

Résumé

R. Roberts — Effets multiplicateurs et concaténation dans le commerce éco-spécialisé de l'Afrique précoloniale.
Analyse critique des théories défendues par A. G. Hopkins (An Economic History of West Africa, 1973) à propos des effets produits par la division géographique (ou écologique) du travail et de la production en Afrique occidentale. L'auteur conclut que le développement économique précolonial s'explique mieux par la spécificité politique des économies régionales que par un recours à la notion générale d'offre et de demande.

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Most students of West African economic history have recognized the impact the broad ecological belts which traverse the region had on economic activity. With the exception of some brief remarks in A.G. Hopkins', *An Economic History of West Africa*, there has been little general discussion of the nature of commercial activity thus encouraged. Most attention has been directed to particular cases of commercial activity stimulated by ecological complementarity. My objective in this short paper is twofold. I wish to assess whether Hopkins' approach to economic history, which focuses on the market, is adequately sensitive to the influence these distinct zones have had on the shape of the market in West Africa. Second, I will query some points touching on the utility of using the market and market demand as an explanation for the structure and character of West African economic and commercial history.

This article will raise three questions concerning the impact ecologically specialized trade had on West African commercial activity:

1. To what extent did trade based on ecologically specialized production result in significant productive linkages within the economy and in a widespread multiplier effect which would encourage further economic activity?

2. To what extent was trade within ecological zone severely limited by the specific character of ecologically specialized production?

3. To what extent did ecologically specialized production encourage profits for merchants who carried goods from one region to another, and thereby foster a geographical division of labour within West Africa and not a social division of labour?

1. This article focuses on chapter II 'The Domestic Economy' because it is here that Hopkins develops his major interpretation of West African economic history.

2. For example, Curtin 1975; Meillassoux, ed., 1971; Person 1968; 1970; 1975; Gallais 1968; Lovejoy 1980a; Lovejoy & Baier 1975; Baier 1977.

3. In this paper, I distinguish between economic history as the history of economic life in general (production, consumption, trade, political economy, etc.) and commercial history as the history of production for exchange and of trade.

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This article concludes with an alternative perspective on commercial history. This alternative explanation accepts the existence of ecologically specialized production as the foundation of long-distance trade within West Africa, but argues that this trade serviced both poor as well as wealthy consumers. I use the concepts of linkages and multiplier effects as a means of assessing the economy's structure. And finally, I propose that specific political economies, and not loosely defined supply and demand, were the motor for economic growth in West Africa.

The purpose of this paper is to explore in general terms some larger issues in West African economic history. I will make some references to the little known Middle Niger valley of what is now the Republic of Mali. The Middle Niger valley is close to the geographic midpoint of West Africa, but neither its location nor the data drawn from the region impinge upon the general nature of the arguments this article presents.

I

While geographers do not agree on the number of climatic regions in West Africa, most would accept some variation of three broad types: Sahelian, Sudanic, and Guinean. Most of West Africa lies between 5° and 20° N and is subject to the alternating movements of two large air masses, a dry one forming over the Sahara, and a moist one forming over the South Atlantic (Mabogunje 1972: 2). Because of its location between the Equator and the Tropic of Cancer, photosynthesis is not hindered because of variations in heat and light. Rather, the north-south movements of the winds and rains determine the bioclimatology of West Africa.

This means that the supply of moisture in both quantity and distribution is the single most important factor influencing the dominant vegetational characteristics of the ecological zones. These climatic zones encouraged certain forms of human adaptation, but it would be wrong to suggest that man has played a passive role. Man has consistently altered his environment; the forest, for instance, has been encroached upon by cultivation and logging, and the desert appears to be expanding, in part, through the overgrazing of certain delicate grasslands. Deforestation due to the demand for firewood and cultivable land has considerably altered the savanna in the areas around large towns and along the paths of railways.

These bioclimatic regions influenced West African commercial activity in a number of ways. First, they encouraged, within the same regions, generalized occupational specialization, at least among subsistence producers. Nomadic pastoralism was the dominant form of human


5. Subsistence production does not equate autarchy. Rather, subsistence production was oriented to production for consumption. Whatever surpluses
adaptation to the desert; pastoralism and mixed agriculture and pastoralism were common in the Sahelian and northern Sudanic regions; cereal cultivation was the norm for the Sudanic areas; and arboriculture and root crops were more characteristic of the forest. Second, they encouraged commercial activity along the borders of ecological zones and within microenvironments in regions (highlands/grasslands, flood plains/dry regions, etc.). Third, they encouraged a type of continental division of labour since most producers within similar ecological regions produced similar goods. This meant that there was little market demand for goods normally produced in the regions where they were produced. Such a geographical division of labour did encourage trade between ecological zones, given the necessary preconditions for trade (including security of travel, demand, and supply), and formed the basis of an insightful comment by a local French administrator in the Western Sudan in 1903:

“There exists in the Soudan very rich zones of production, but very distinct and based on mono-production. This results in an economic situation that in each of these zones the large majority of merchandise produced has low value and creates conditions for a favourable market for buying. Transported by the dyula to another unique production region, where these goods are totally absent, they acquire a very high value when exchanged for local products. For the same reason, the latter products which exist in abundance in one area are transported to another where they do not grow spontaneously and sell for a profitable price.”

Given this geographic division of labour, wherein some local products had a high comparative or even an absolute advantage in export trade, under what conditions will self-sustained economic growth develop? What specific productive linkages did this ecologically specialized trade have? How widespread were the multiplier effects of participation in this trade? How well does Hopkins’ discussion of the ‘domestic economy’ explain this ecological basis of West African trade?

II

The major contribution to West African economic history in recent years has been Hopkins’ An Economic History of West Africa. Hopkins has unified the diverse elements of economic history through a focus on remained were consumed, stored, or traded. Only when production for the explicit purpose of exchange is undertaken does a producer cease to be a subsistence producer, even through he may continue to provide his own food. For a detailed discussion of the role the domestic economy plays in cash cropping and labour migration see Meillassoux 1975.

6. The concept of a continental division of labour has been suggested by Meillassoux 1971: 67.

the market. The book is organized in such a way that economic history can be seen in the peculiar development and constraints on market growth. Hopkins (1973: 5) defines the market in terms of its components:

'The concept as defined here has three dimensions: first, the volume and value of goods and services transacted, which determine the extent of the market in quantitative terms; second, geographical variations in exchange activity, which fix the extent of the market in spatial terms; and third, the number and social status of the parties engaged in exchange, which influence the composition of goods and services traded.'

Constraints on the development of the market in precolonial West Africa, Hopkins argues, were related to deficiency in demand caused by a specific land-labour ratio and high transport costs (ibid.: 294). Hopkins' analysis is stimulating, insightful, and ambitious; yet it is important to probe more carefully his conception of the market and assess whether the market principle is the single most significant analytical factor in understanding West African economic history.

According to the above definition, the market is conceived in spatial terms whose parameters are ill-defined because it must account for the totality of market (exchange) activities in global terms. This includes quantitative factors as well as an identification of the scale of participation in exchange. Thus, Hopkins uses the term market in the broadest sense as the whole set of circumstances that surround the process of exchange. Exchange takes place through three distinct forms, which are related to geographical and social variables: (1) local trade; (2) long-distance trade; and (3) external trade. Local trade is defined in contrast to long-distance trade and is seen spatially: transactions that take place within ten miles of the area of production (ibid.: 53). In contrast, long-distance trade takes place beyond the range of easy return and implies structural differences. Participating in long-distance trade demands making arrangements for overnight stops, reallocation of household work, and occasionally the use of transport and commercial intermediaries (ibid.). More significantly, long-distance trade carried different kinds of goods and served different kinds of consumers. Long-distance trade 'tended to cater to the needs of relatively high income groups because only prosperous consumers could afford to pay prices which took account of the scarcity value of items that were unavailable locally, and the greater handling costs and risks of carrying goods beyond the area of production' (ibid.: 58). Long-distance trade developed complex spatial networks that were a response to geographically distinct 'social islands of purchasing power' (ibid.). Finally, external trade across the Sahara and the Atlantic is defined by a qualified theory of comparative advantage, which argues that international demand is for goods unavailable locally or cheaper to import than to produce (ibid.: 78-79). Hopkins is careful to stress that the anticipated multiplier effect of participation in international trade had specific and limited results (ibid.: 119). Since
this paper will limit its scope to the continental trade of West Africa, a more detailed examination of Hopkins' analysis of the domestic economy is warranted.

Hopkins' discussion of commercial activity is based upon a distinction between short- and long-distance trade. This distinction concerns not only spatial aspects but also quality of goods and nature of demand. 'Short-distance trade resulted from the productive strategy of local households, and from variations in the natural and human resource endowment of the micro-environment' (ibid.: 54). Most subsistence farmers planted sufficient acreage to survive with their yields even in poor growing seasons. In average years, a normal surplus was produced (Allen 1965; Hopkins 1973: 54). Trade was made possible 'by the complementary needs within regions which are sometimes regarded, wrongly, as being uniform. Variations in natural resources did not have to be profound for local trade to develop, though marketing activity was especially intense on the borders of ecological zones' (Hopkins 1973: 54). Moreover not all households were uniformly productive. Differences in consumer/producer ratios and in productivity among households encouraged differential capacity for trade and consumption (Hopkins 1973: 54-55; Sahlins 1972; Van Dusen Lewis 1979).

Even acknowledging variations within microenvironments, where one region produced better tasting millet, cassava, or yams, how far could such demand develop? In the same chapter, Hopkins presents a brilliant description of the inherent constraints on this type of trade:

'The conditions which gave rise to local trade also set limits to its expansion. On the supply side, pre-industrial costs of production meant that there was no way of reducing the selling prices of foodstuffs and crafts to the point where consumers could have afforded significantly greater quantities without any change taking place in average per capita incomes. It seems likely that a greater volume of goods could have been produced at constant unit prices with the factors already available, but constraints on the demand side meant that this happened only sporadically. The "primitive" consumer was perfectly willing to depart from established consumption levels, but lacked the means of doing so. Variations in the resource base enabled a certain amount of trade to take place, but limitations to complementarity in a small area meant that it was usually possible for households to supply acceptable substitutes for most of the goods offered for sale. In other words, the kinds of goods which farmers were best able to produce and trade were already being produced and traded equally cheaply by those who were their potential customers. Consequently, the scope for exchange was limited and per capita incomes remained low.' (Ibid.: 57-58. Emphasis ours.)

Local trade could not provide the stimulus for market development precisely because demand for local produce was weak. Except following localized famines, scarcity per se was not the motor for economic activity. Taste preferences existed, but the availability of local substitutes depressed prices and prohibited economic specialization. Had per capita incomes risen markedly, subsistence farmers' marginal propensity to consume would have risen (Hopkins 1973: 58; Rao 1963). However,
per capita income during the period prior to the growing European
demand for cash crops did not expand and therefore local market activity
was constrained by the very nature of subsistence production.

To overcome these inherent limitations of the local market, Hopkins
(1973: 54) proposes that long-distance trade had stimulating effects on
all levels of marketing activity, including local markets. Exactly how
long-distance trade stimulated local markets is crucial, but remains ill-
explained in Hopkins’ analysis. I would suggest that part of the problem
is an overly rigid correlation between types of goods and types of trade.
Hopkins argues:

‘Long distance trade can be regarded as an attempt by African entrepreneurs
to overcome the limitations of local commerce. Constraints still existed on the
supply side, because it was just as expensive to produce goods for long distance
trade as for sale locally. On the demand side, however, long distance trade pre-
sented an opportunity of connecting social islands of purchasing power, that is
consumers who, though only a small proportion of the total population, had suffi-
cient wealth between them to support a market which was greater than that
available to local traders in any one area. The less affluent majority participated
in this commerce to a certain extent by using profits accumulated from local
trading activities to purchase cheaper types of cloth and small quantities of
essential items, such as salt. In general, however, long distance trade tended to
cater for the needs of relatively high income groups because only prosperous
consumers could afford to pay prices which took account of the scarcity value of
items that were unavailable locally, and the greater handling costs and risks of
carrying goods beyond the area of production.’ (Ibid.: 58.)

III

Despite the comprehensiveness of Hopkins’ analysis, the argument
that market constraints limited the preconditions for market develop-
ment is essentially tautological. The nature of the problem is inherent
in the structure of the argument. Identification of demand from the
‘less affluent’ and the ‘social islands of purchasing power’ with types of
commodities is misleading. Hopkins has recognized this problem when
he stated that the ‘less affluent’ purchased certain items of long distance
trade, such as cheaper cloth and pinches of salt (ibid.: 58). In contrast
with Hopkins’ assessment, I would suggest that the largest number of
transactions (and not necessarily volume or cash flows) within the Middle
Niger valley, for instance, was the exchange of ecologically specialized
vegetable, mineral, or animal produce. Most of this trade was in the
form of seasonings: dried fish, slivers of meat, karité butter, spices,
baobab flour, pinches of salt, etc. 8 This trade, although based on long
distances, differed in substance from Hopkins’ ‘social islands of pur-
chasing power’. Consumers for these goods need not have been wealthy:

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8. ROBERTS 1978; see also the case studies in BOHANNAN & DALTON 1962;
ARHIN 1976-77.
only small portions were needed to enliven the regular fare of millet porridge.

A description of the market at Nyamina in 1863 is appropriate. Nyamina, before the Umarian conquest some three years earlier, was a large entrepôt for the salt and gold trade. By 1863 its importance had declined, but it was still a thriving regional market:

'At Yamina, like all large cities, a market meets everyday; but there is one day a week when there is a large market, that attracts people from far and wide. Buyers and sellers crowd together [...] The market is a large square around which are located, without regularity, the small sheds on which the partitions are of wood or straw [...] Under the booths one sees one, two, or three merchants seated on straw; before them, also on straw, one finds their commercial objects: salt, glass beads, cloth, paper, sulphur, lead shot, rings of copper or silver for the ears, the nose, the hands, and the toes, necklaces, local cotton cloth, pagnes, boubous, burnous of the best quality. In one corner there is a public barber who uses a razor which comes from Sierra Leone [...] a salt merchant who [...] sets up small, very small heaps whose prices vary from 5 cowries up to 100 or 200 [...] The salt has just arrived from Segu, valued at 20,000 cowries, that is the price of a slave. Now we arrive at the butchers, all the butchers are on the same side of the market [...] Much meat is grilled and smoked immediately [...] Further on, one finds women in front of calabashes selling grain, baobab flour, maize, tamarind, herbs, beans, groundnuts, couscous, pimento, etc. There are also fish merchants, who sell fresh fish or smoked fish; fish is bought to add to the sauce which goes on the cereal couscous.' (Mage 1868: 187-191.)

In a series of recent studies (1978; 1979; 1980a; 1980b; and in Ajayi & Crowder, forthcoming), Paul Lovejoy has discussed the place of two such commodities, salt and kola, in the economic history of the Central Sudan. Both were divisible into small quantities with relatively low unit prices. Demand for the two other characteristic West African commodities, gold and slaves, was clearly limited to the external trade or to those with sufficiently high capital reserves or income. Demand for kola was widespread in the Muslim savanna, and salt was in demand throughout West Africa. However, the nature of demand for kola, which was a luxury, and for salt, for which local substitutes (ashes, saline greases, etc.) were occasionally available, was weak. People consumed when they could, but made do without when they could not.

The implications of this ecological specialization for market analysis should be explored. First, local demand for local produce was small. Effective demand came from beyond the production region. Reliance upon export influenced the capacity of the market to expand precisely because of its dependence upon uncontrollable external demand. Second, ecological specialization on a continental basis bears a strong resemblance to cases where staple export theories have been applied. Staple theories have maintained that economic development was influenced by the limits of a resource in its natural endowment, such as salt, and by the

unlikelihood of stable conditions which could foster continuous production
due to changes in weather and yields.\textsuperscript{10}

Third, the economic linkages of this sort of trade were minimal. We
should identify two types of productive linkages: backward linkages
which supply the particular enterprise with needed inputs, and forward
linkages, which utilize outputs from particular enterprises in some new
activities, especially additional processing (Hirschman 1958: 100). Kola
production encouraged several types of backward linkages, includ-
ing basket making and collection of special leaves to retard moisture loss
in the nuts. The size of kola exports suggests that these activities requir-
ed considerable labour, but they did not necessarily require alteration
in the agricultural calendar nor in the organization of work. Basket
weaving probably had a low opportunity cost of labour, performed by
those too old to cultivate, and collecting leaves could easily be under-
taken by normally unproductive children. Kola production did not
require any further processing and therefore had no significant forward
linkage effects (Lovejoy 1980a; 1980b).

In contrast, the salt industry had both backward and forward link-
ages. The desert salt mines required tools, and salt evaporation
required pottery, firewood, and/or earthen dam construction. Once
processed, the salt industry required containers for transport. Desert
salt trade encouraged shapers and brand name markers.\textsuperscript{11} The most
significant backward linkage for saline evaporation enterprises was the
encouragement of a pottery industry. Since pottery was often the
exclusive preserve of the women of the \textit{numu} ('ironworkers') caste, the
linkage effect did little more than raise the opportunity cost of production
since entry into the industry was restricted (see for instance Le Barbier
1906; N'Diaye 1970).

Fourth, ecologically specialized production resulted in a geographical
division of labour, wherein most producers within regions produced the
same kinds of goods using the same techniques of production. This in
turn resulted in low prices in areas of production precisely because of
little local demand. Low prices discouraged occupational specializa-
tion, but encouraged long-distance trade. Yet high costs of transport,
as Hopkins points out, functionally limited what could be transported.\textsuperscript{12}
Thus, the dietary staples which most farmers produced were not in
demand, except in the case of the desert-edge. Pastoralists needed
cereals in their diets during certain times of the year, especially when
supplies of milk were low. Since their herds were returning north at the

\textsuperscript{10} For instance, INNIS 1970; WATKINS 1963; 1977. HOPKINS (1973) has used
the staple theory in his discussion of the West African external trade, but it is
equally appropriate and equally limited for a discussion of the domestic economy.

\textsuperscript{11} LOVEJOY (1978; and in AYI \& CROWDER, forthcoming). Ann McDougall
is presently preparing a dissertation on salt trade in the Western Sudan. DUPUIS-
YAKUNA 1921.

\textsuperscript{12} HOPKINS 1973. For a brilliant discussion of transportation costs, see
CURTIN 1975, ch. vii.
beginning of the rainy season anyway, transport costs were virtually zero (Curtin 1975; Baier 1977; Roberts 1980a).

Hence, external demand for local produce stimulated an expansion of production, but offered producers only a marginal return on the investment of their labour. Producers were not encouraged to risk occupational specialization. Within this context, then, it is possible to examine the multiplier effects of this ecozonal specialization. Through the operation of a multiplier process increased income earned in an expanding industry will induce expansion in other industries. Part of the growing total income earned in the initial industry will be spent on consumer goods, and this will induce an expansion of output in other industries. These additional incomes will be spent partly on consumption goods and thus induce further production (Meier & Baldwin 1964: 226). In the absence of significantly increased cash incomes, however, multiplier effects from the ecozonal trade were minimal.

The productive and commercial aspects of ecozonal specialization resulted in the establishment of a geographical division of labour based upon similar productive activities within regions which complemented those in other regions. Thus, on a continental perspective, a market approach may work, but for an exploration of economic history in less than global terms, this does not prove satisfactory. Moreover geographical division of labour does not have the same linkage and multiplier effects a social division of labour has.

IV

How, then, can we explain the character of commercial history in West Africa? This question points to one additional weakness of Hopkins' analysis of the domestic economy: its timelessness. The domestic economy is not discussed in diachronic terms, which may reflect both the little we know about economic history prior to the 19th century, and the thrust of Hopkins' analysis which is on the better documented external trade. Nevertheless, the economic history of West Africa begins to take on historical character if we redefine the motor of commercial activity. If scarcity, per se, is not the sufficient motor for pre-industrial production and trade, then a refinement of the origins and character of the 'social islands of purchasing power' may provide a suitable alternative explanation. Such an approach would also examine the specific effects political economies had on economic activities.

By political economy I understand the intimate relationship between the structure and activities of the State and the operation of the economy. There is little doubt that those who controlled the State actively inter-

13. Africanists know much more about the economic history of the coast than about the interior; see for instance CURTIN 1975; REYNOLDS 1974; NORTHRUP 1978. Ray Kea is preparing a detailed economic history of the Gold Coast.
vened in the economy through a variety of ways including taxation, surplus extraction, warfare, involvement in production (such as mining), encouragement of occupational specialization, and by the maintenance of internal security. There is widespread agreement among historians that large States and empires were conducive to commercial expansion (for references see Lovejoy 1978; 1979; 1980a; 1980b; and in Ajayi & Crowder, forthcoming). This hypothesis is proven by negative examples of commercial decline following the collapse of States or the inability of specific States to maintain internal security (Roberts 1980b).

Not all States were equally solicitous of merchants, however. Curtin (1975) and Wright (1977) argue that traders in Senegambia were often heavily taxed when passing the numerous petty kingdoms which lined the trade routes down the Senegal and Gambia rivers. Other States, such as Asante and Gyaman, encouraged traders by offering security, presents, and probably favourable terms of trade (Wilks 1961; 1971; Terray 1974).

The differences in commercial strategy may reflect differences in the States' political and economic orientation. For instance, the Segu Bambara State (c. 1713-1861) needed steady supplies of fire-arms and horses in order to continue producing slaves for export (Roberts 1980b). Additional proceeds from the sale of slaves were consumed in terms of luxury goods. The Segu State encouraged traders by providing commodities which were in demand (slaves), and by providing internal security, a market police to insure the quality of the goods sold (especially gold), and favourably adjudicating conflicts between merchants and chiefs in favour of the former (Carrère & Holle 1853: 186-187).

Furthermore, the relative longevity of the Segu State and the security it provided encouraged occupational specialization within the Middle Niger valley. Fishermen, herders, farmers, and traders certainly predated the rise of the Segu State because they were adapted to the complex ecology of the Niger valley and interior delta (Gallais 1967; Sundström 1972). However, their articulation as specialized producers and their interaction as such were encouraged by internal security and by the demand from the army and the court to devote more of their labour to specialized production. An expanding market developed in which the specialized producers could purchase their own subsistence. Only at this point did the producers earn marginally higher incomes, but incomes sufficiently high to generate a viable demand for locally produced cloth, more salt, and more condiments. The Maraka towns of Sinsani and Nyanima became important regional markets as well as entrepôts for long-distance trade.

Following the Umarian conquest of the Middle Niger valley, between 1860-1863, the regional economy suffered. The Umarians were never able to re-establish large scale security within the region, and continued resistance by rebellious Bambara further disrupted the degree to which specialized producers interacted. These producers appear to have relied
increasingly upon the production of subsistence at the expense of occupational specialization. Changes in the State and the influence the State had on economic conditions therefore are crucial in reconstructing the economic history of the region.

I believe that an approach to West African economic history which takes into consideration the ecological basis of commerce and the influence of political economies not only on demand but on production may well open insights into economic history not provided by a market approach. The latter should not be abandoned altogether, for formalist as well as substantivist economics have something to offer to the understanding of the complexities of pre-industrial economic life. Both approaches, however, should be subordinated to the role political economies played in shaping production and demand. This would also contribute more concretely to a *historical* reconstruction of precolonial West African history and give some substance to the otherwise vague ‘social islands of purchasing power’.

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