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BACKWARD INTEGRATION AND FOREIGN EXCHANGE CONSERVATION.*

INTRODUCTION

In Nigeria, the need to conserve foreign exchange has become more urgent following the major economic problems which the country has faced since the beginning of the 1980s. Among these problems have been the rising external debt burden and the increasing inability to finance the import of critical inputs for the productive sectors. This development has slowed down the performance of both the agricultural and industrial sectors. One way to overcome the problem of foreign exchange shortage is to diversify the export base and/or curtail the imports of those goods and services which have alternative domestic sources of supply. Diversifying the export base appears to be the more effective way, but, as our recent experience has shown, it is rather complex to accomplish in the short-run. Curtailment of imports is usually a



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more feasible option within the short to medium-term.

Where the objective is to save foreign exchange by reducing imports, it is generally believed that the starting point should be a programme of agricultural import substitution because: (i) local production of agricultural products is technically more feasible than that of industrial manufactures given the

factor endowments of most developing nations and (ii) the marginal cost of import replacement appears to be lower for agricultural products, mainly because some under-utilized resources could be mobilised at comparatively lower costs. Ultimately, this strategy calls for the production of an increasing marketable surplus of agricultural products to meet the requirements of the economy. In most cases, the efforts of farmers alone are not adequate in meeting these requirements.

The industrial users of agricultural raw materials therefore have a vital role to play in stimulating and ensuring adequate input supplies, if the nation as a whole is to conserve its foreign exchange. One way to achieve a diversified base for domestic supplies of agricultural raw materials is through backward integration by which the entrepreneur could produce some of his own inputs.

The objective of this paper is to discuss the overall implications of backward integration for foreign exchange conservation in Nigeria. I in-

* The text of this paper was also delivered at a workshop on the lessons of Integration organised by the Farm Management Association of

tend to deal with this subject in four parts. In part I, I will discuss the need to conserve foreign exchange through agricultural import substitution, while in part II, I shall examine the feasible strategies for backward integration. In part III, I will focus on the problems and challenges, while in the last part, I shall present the summary and some concluding remarks.

PART I AGRICULTURAL IM- PORT SUBSTITUTION AND FOREIGN EXCHANGE CONSER- VATION

Agricultural import substitution can play an important role in foreign exchange conservation in Nigeria since a significant proportion of local industries process agricultural raw materials, which are usually in short supply. In addition, given the dependence on imports for the augmentation of domestic food supply, import substituting farming and processing enterprises can play a vital role in the expansion of the non-agricultural sectors. Let me explore further the relationship between import substitution and foreign exchange conservation.

Import Potentials and Foreign Exchange Conservation

Two indicators point to the great potentials which an agricultural import substitution strategy has for the conservation of foreign exchange in the country. Firstly, in the

1970s and 1980s, a significant proportion of foreign exchange expenditures in Nigeria was on the importation of food and agricultural raw materials. Therefore, any attempt to conserve foreign exchange could effectively begin with finding domestic substitutes for these imports. Available data show that Nigeria's expenditures on imports rose from ₦7.2 billion in 1984 to ₦30.9 billion in 1989. Of these amounts, the imports of capital goods, consumer goods and raw materials accounted for 37.4, 32.5 and 30.1 per cent, respectively in 1984, while they accounted for 27.3, 44.9 and 27.9 per cent, respectively, in 1989. The low level of technological development in the country has often engendered the general belief that nothing can be done within the short to medium term to curtail the imports of capital goods. And indeed, there is the feeling that given the current economic malaise, more capital goods imports would be needed to optimally exploit the productive potentials of the nation. However, the high propensity to import large quantities of consumer goods and raw materials is of utmost concern. These imports accounted for an average of 60.7 per cent of total imports between 1984 and 1989, while the imports of agricultural raw materials and other finished agricultural consumer products accounted for 28.5 per cent, on the average, of total imports between 1984 and 1989. In monetary terms, expenditures on the imports of agricultural products (raw materials and finished consumer products) rose from ₦2.4 bil-

lion in 1984 to a peak of ₦5.8 billion in 1988. At these levels, total agricultural import expenditure consumed a significant proportion of total export earnings, amounting to about 30.0 per cent of the total in 1988. Agricultural import expenditures also surpassed total export earnings from the non-oil sector. While non-oil exports averaged ₦1.5 billion between 1984 and 1989, total agricultural imports averaged ₦3.6 billion in the same period. This indicates that non-oil exports could only support 41.7 per cent of agricultural imports during the period. More worrisome is the adverse implications of such imports for the development of both agriculture and domestic industries. Apart from the stress placed on our lean foreign exchange earnings, availability of cheap imports was until recently a major disincentive to the production of traditional food crops and in most cases discouraged the industries from making adequate investments in the domestic supplies of these agricultural inputs.

The second major factor in favour of foreign exchange conservation through agricultural import substitution is the great potential for expanding the domestic supplies of agricultural raw materials and final products. Unlike the capital and chemical goods industry, agricultural production in Nigeria could be expanded significantly because of the availability of both land and labour resources, two key farm inputs. Already, a significant proportion of the labour force (55 per cent) of the country is engaged in farming, while the structure of hecterage ex-

pansion for agriculture may have a positive pay-off especially when the macroeconomic environment is right. Thus, agricultural import substitution is both technically and economically feasible even within the short run in Nigeria.

Domestic Raw Materials And Agro-Industries Performance

Apart from the direct foreign exchange savings, agricultural import substitution can play a unique role in the performance of industry. In Nigeria, agriculture supplies the major inputs to several manufacturing concerns. Available information shows that agriculture contributes more than 60 per cent to the value-added of the food processing, sugar, beverage and tobacco producing industries. It also contributes significantly to the value-added of the textiles, natural fibres, furniture, leather and brewing industries. Because of its contribution, therefore, the performance of these manufacturing concerns seems to hinge largely on the adequacy of supplies of the agricultural raw materials. For instance, the rates of capacity utilization of these industries have varied widely in consonance with the availability of supplies of raw materials. In the pre-SAP era when there was acute shortage of foreign exchange, most of these industries were characterised by low capacity utilization rates, resulting in sharp declines in the value-added of manufacturing industries in the country. Of greater concern has been the decline in value-added in the manufacturing

concerns due to the deterioration in the performance of the agro-allied industries. Undoubtedly, if the manufacturing sector is to witness rapid progress, adequate attention must be given to the performance of the agro-allied subsectors.

This has been clearly borne out by the recent relative improvement in the performance of the manufacturing subsector which was occasioned by the moderate success recorded in increasing domestic sourcing of raw materials. From the CBN's regular industrial surveys, it has been found that the industrial groups which depend largely on local raw materials have operated at above average capacity utilization rates. These industries included those engaged in the production of tyres and tubes, textiles, sugar confectionery, leather products, beer and stout, basic industrial chemicals, plastic products and miscellaneous food preparations. By contrast, enterprises with the high ratio of imported inputs have continued to operate at less than one-third installed capacities.

Improved Market Opportunities

Generally, an agricultural input substitution strategy often encourages the diversification and intensification of the domestic markets for both food and industrial goods. Largely due to inter-industry linkages, efforts at boosting agricultural raw material supplies often result in enhanced incomes for the farm sector. In a developing economy characterised by a large farm sector, enhanced farm incom-

es often create an effective demand for the products of the domestic industries. Usually farmers increase their expenditure on industrial products - both consumer goods [clothes, furniture, household utensils, building materials] and producer goods [fertilizers, pesticides, tools and implements]. These benefits can be enormous provided a desirable macroeconomic policy environment is in place. In particular, undue protection for industry, and pursuit of policies that penalise agriculture could be unfavourable to the realisation of these benefits. But, where the correct policy environment exists, the development of agricultural raw materials not only conserves foreign exchange, but also enhances the foreign exchange earning capacity of the industrial sector.

Attracting Farm And Other Investments

A deliberate policy of agricultural import substitution could lead to the expansion of investments in the agricultural sector and the economy as a whole. Both public and private investments become a crucial part of factor contribution to overall economic development. With regard to public investment, the implicit and explicit taxation of farm incomes could be a good domestic source of savings and investment at the initial stages of development as clearly demonstrated by the Nigerian experience of the 1960s. Usually such savings are channelled towards improvement of communications, rural infrastructures and the provision of public utilities.

With regard to the private sector, diversification into the production of agricultural raw materials calls for huge agricultural investments. In particular, investment is made on either direct production or procurement of agricultural products, which can result in the use of improved techniques of production, thereby enhancing the productivity and modernization of the farm sector.

PART II POSSIBLE STRATEGIES FOR BACKWARD INTEGRATION IN NIGERIA

As stated earlier, backward integration implies the process by which an entrepreneur can produce his major input requirements. This means that a food processing firm, for instance, must produce or organise the supplies of major agricultural raw materials in a manner to ensure and guarantee the efficiency of input procurement, capacity utilization and overall output. Backward integration anchored on agricultural import substitution is usually embarked upon due to the weakness in the prevailing input procurement system, especially when it relies on foreign sources. An effective input procurement system that can provide a solid foundation for manufacturing operation must possess five basic characteristics. These are the supply of adequate *quantity* of raw materials of desirable *quality*, at the right *time* and at

reasonable *cost* within the framework of an efficient *organisational structure*.

The Nigerian experience with the reliance on imports of raw material needs has been discouraging, to say the least. Input procurements have been constrained by foreign exchange shortages in the economy. This has often been accentuated by delivery delays, high transport costs and import duty charges. Indeed, the reliance on imports makes the task of organising the input procurement system much more difficult because of other international economic and political considerations. Thus, to ensure adequate supply of high quality raw materials at the appropriate time and at a reasonable costs, the entrepreneur needs to organise his procurement system in an efficient manner. In general, adequacy of the desirable quality of raw materials and their timely delivery could be guaranteed by backward integration. This could also save the industrialists the costs and negative externalities associated with raw material imports, leading ultimately to the conservation of foreign exchange. These considerations have led to the evolution of varying strategies of backward integration in some developing countries.

Strategies For Backward Integration

Backward integration can take many forms. It can take the form of backward vertical integration, contract arrangement with primary producers, government supported supplies and collective bargaining

with producer organisations. I wish to dwell briefly on each of these:

Backward Vertical Integration

This is the most complete form of integration. It usually involves the ownership of and investments in the development of the raw material requirements of the industry. In the case of agro-allied industries, it involves the establishment of farms to produce the required agricultural raw materials. Backward vertical integration is most suitable and appropriate especially when the firm has to introduce new crops. For instance, for the paper, flour and brewery industries, vertical integration could be a more appropriate strategy for ensuring adequate supplies of pulp wood, wheat and alternatives to malted barley [such as maize and sorghum]. For others, backward vertical integration may not be feasible because of social and political factors like trade union resistance to labour displacement. The main possible effects of backward vertical integration are reflected in the control, capital requirement, flexibility and costs of an enterprise.

As for control, if the agro-industry has qualified personnel to perform the new functions, its control over decision-making in the enterprise is bound to increase with backward vertical integration. However, integration can significantly increase the fixed and working capital requirements of the agro-industry, which in turn increases total costs and capital exposure. Except these costs are reflected in the final product prices, the loss of competi-

tiveness may undermine the success of integration. Moreover, backward integration tends to lock the agro-industry into fixed investments [that may not have an immediate pay-off] and a predetermined structure. This limitation reduces multiple source options. Overall, an integrated system permits efficiencies and economies of scale that are not otherwise attainable and therefore allows the firm to achieve lower variable costs. But integration also implies greater fixed costs for the acquisition and/or rents on land, machines and farm inputs. If market prices for alternative major raw materials fall, and these are reflected in lower product prices, the fixed costs can represent a significant expense to the firm. All things being equal, backward vertical integration may appear to be a feasible option for embarking on foreign exchange conservation. It may however, be attained only at an exorbitant domestic resource cost, especially at the outset.

Integration By Ownership And Leasing

Backward vertical integration can also be quite complete, if a firm owns a farm but leases out the operations of the farm to a management firm. This arrangement is usually designed to guarantee cost recovery, especially when the potential output of the farm surpasses the raw material needs of the firm. The lease would probably specify the rents to be paid in kind [with the products of the farm] and cash depending on the terms of lease. The management firm would be expected to earn its reward from

the surpluses from the farm. While this approach guarantees a minimum annual return to the farm investment, it may not guarantee adequate supplies of raw material needed except the lease agreements include clauses which insist that the lessee provide certain quantity and quality of raw materials annually.

Contract Arrangement With Primary Producers

Backward integration may also operate by contract. That is, contract for future delivery of a particular commodity may be entered into by the firm with the farmers. This contract may be quite specific in terms of quality, quantity and price. It may also touch on the handling logistics and time of delivery of the said commodity. The contract is most effective if it is matched with some credit [i.e., short-term pre-delivery credit] designed to assist the farmer to grow the desired crop. In some cases, the credit can also be in kind such as the supply of the desirable varieties of seeds to be grown to the farmer. The tobacco industry in Nigeria has recorded a significant success in the use of contract farming arrangements. For a long time, the Nigerian Tobacco Company has assisted farmers through supply contract to grow raw tobacco to meet its raw materials needs.

If the agro-industry firm is a monopolistic end-user of the said agricultural raw material, the power base of integration lies with it. The effectiveness of this contract to guarantee raw materials supply under this condition would depend, to a large extent, on the willingness

to provide adequate price incentives and other services to the farmers.

Government Sponsored Supplies

Very often, the response by industry to the call for domestic sourcing of certain agricultural raw materials may be slow. In some cases, the slow response by industrial end-users could be deliberate in order to forestall incurring huge costs on backward integration. If the government is determined to enforce this policy, it may partially intervene through price support and subsidy programmes to assist in the production of these agricultural raw materials. An example of this government-induced backward integration is the case of the 'Wheat programme' embarked upon by the Federal Government. When wheat imports were banned in the country, the government gave some grants to support wheat growing in some states. Basic extension service support and other production incentives were provided to wheat farmers to foster increased production. This was designed to principally benefit the flour and feed mill industries by guaranteeing adequate supply of wheat grains. This approach however often entails large public expenditures on subsidies, while the result may not initially be very satisfactory.

Producer Organisations

When input procurement depends on numerous small suppliers, one way to foster backward integration is to encourage the formation of collective farmer and/or producer organisations. If such an organisation does not exist, the firm

might need to create a focal point around which to mobilize the community interest and participation in its search for agricultural raw materials. Organising producers is usually a difficult and time-consuming task, fraught with a lot of barriers. One effective method for a firm initiating a producer's organisation is for it to identify these multiple constraints surrounding the small farmers' efforts in produce marketing and to suggest a solution. The most common marketing barriers include lack of infrastructure [for example, roads and storage], services [transport], inputs [bags and credit] and information [prices and quality standards]. Finding solutions to these problems calls for investments on organising the producers, a cost which the firm may have to bear at the outset.

PART III PROBLEMS AND CHALLENGES OF BACKWARD INTEGRATION

It can thus be observed that efforts to conserve foreign exchange through backward integration often require over-coming several constraints. In summary, these are: creating the conducive enabling environment, strengthening the technological base, providing the capital needs and creating desirable market opportunities. I want to also talk briefly on these key areas.

Strengthening The Enabling Environment

A key problem that would need to be addressed for effective backward integration is to create a conducive enabling environment. This requires a re-orientation of incentives through policy reforms. In particular, land tenure problems and discriminatory protection of manufacturing industry through exchange rate over-valuation must be avoided. In addition, there is also the need to institute effective agricultural pricing policies, keep real interest rates positive, keep real wages at levels justified by productivity, apply cost recovery in pricing infrastructural services, and avoid high and accelerating inflation by following disciplined fiscal and monetary policies. Another major consideration is the need to improve the poor state of infrastructure [roads, telecommunication, potable water

supply, transport etc.]. These two factors can actually set the pace for the success of backward integration.

Technological Base

The success of backward integration depends to a large extent on technological evolution that makes greater specialization profitable and allows for a high degree of adaptation of existing plants, machinery and technical packages for use in domestic production of raw materials and substitutes. This not only requires a break through in technology, it calls for the need to foster desirable Research and Development [R & D] programmes. In Nigeria, technological constraints may pose serious challenges because of the low level of both public and private investment in R & D. According to a CBN finding, manufacturers in Nigeria spend only an insignificant amount of their investment outlays [about 2.0 per cent annually] on R & D, while the rate of adoption of research findings from public research institutes by the private sector has often been low.

Financial Aspects

Inadequate finance may play a dominant role in limiting the level of backward integration. Often, integration requires additional investments on restructuring of plants and on R & D generally, in order to provide the power base for effective integration. As funds tend to be tied down for a long time, there is usually an unwillingness on the part of the private entrepreneurs to commit this

level of resources to integration efforts. In view of the enormity of this problem, some countries have often created a special fund [mobilized through special taxes] to support R & D, while others ensure that integrators are given special incentives by the government.

Limited Market Opportunities

Often, backward integration which leads to the development of import substitutes locally, could result in sharp changes in the tastes of the products of the integrator. If there is a consumer resistance to these 'new' products, this may affect sales. Rather than having a positive pay-off, the integrated firm may begin to incur secondary costs due to the loss of markets.

PART IV SUMMARY AND CONCLUDING REMARKS

Summary

I have discussed in this paper in a general way the overall implications of backward integration for the conservation of foreign exchange in Nigeria. I have observed that investments in agricultural import substitution for the production of both food and raw materials are important due to the current large import expenditures on them, which tend to place some stress on the already lean foreign exchange earnings of the country. In addition, I have noted

that Nigeria possesses the potentials for expanding the domestic supplies of agricultural raw materials due to the availability of both labour and land resources. Among the benefits derivable from these include the potential improvements in the performance of industries, the creation of market opportunities following the income generating capacity of import substitution, and increased agricultural performance.

I have also argued that backward integration is a viable option for the conservation of foreign exchange in Nigeria. Apart from foreign exchange conservation, it also plays an important role in ensuring adequate supply of desirable quality of raw materials at the right time and at a reasonable cost within the framework of an efficient organisational structure. Some strategies for backward integration include vertical integration, integration by ownership and leasing, contract arrangements with primary producers, government sponsored supplies and producer organisations. The major problems and challenges of backward integration for the purpose of foreign exchange conservation include weaknesses in the enabling macroeconomic environment, technological constraints, lack of finance, and limited market opportunities for the products.

Concluding Remarks

One conclusion from this paper is that to ensure foreign exchange conservation, there is the need to

create a conducive macroeconomic environment sufficient enough to induce both farmers and agro-industrialists to invest in the agricultural sector. This, perhaps, would represent the most feasible option within the short run, for embarking on import substitution strategies for foreign exchange conservation. Apart from this, there is the need to focus attention on the development of adaptive technologies capable of guaranteeing the supply of domestic agricultural raw materials to meet our industrial needs. This calls for the adaptation of existing industrial plants and packages for increased sourcing of agricultural raw materials domestically. There is no doubt that the success of backward integration hinges on the availability of finance. Huge fixed investments would need to be incurred on plant adjustments and Research and Development, both by the private and public sectors. I am convinced that there are vast potentials for overcoming this constraint if the Nigerian banking sector sustains its current growth. In general, provided there is strong commitment to the implementation of the Structural Adjustment Programme, I believe that in the medium to long-term, Nigeria could achieve the objectives of foreign exchange conservation, increased industrial output and sustained national output.

I thank you for your attention.