

THE ROLE OF CENTRAL BANK IN THE ACQUISITION OF FOREIGN TECHNOLOGY FOR NATIONAL DEVELOPMENT

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The contribution of a central bank to technology acquisition is not direct in the sense that the bank, by nature of its activities cannot be involved in the domestication and indigenization of a foreign technology. However, the financial, trade and exchange and economic policies formulated and implemented by a central bank are very crucial to technology acquisition and investments in general. Also, a central bank's efforts to create and promote the establishment of the financial institutions responsible for mobilization and channelling of savings to the productive sectors of the economy for capital formation represents a positive contribution to technology acquisition. Since a central bank also formulates and implements monetary policy, the bank is also responsible for ensuring that money does not become a nuisance to economic activities. Rather, money should be a lubricant in the wheel of economic activities. Consequently, a central bank in its bid to achieve a favourable economic environment seeks to promote such policies that could lead to price stability as well as balance of payments viability. The success of the Bank in achieving these goals depends on the co-operation existing between the bank and the government and the banks. The Central Bank of Nigeria (CBN) has taken significant steps towards the achievement of these laudable goals in a bid to liberate the Nigerian economy from financial repression and create a viable economic environment for technology acquisition and investments.

Acquisition of foreign technology constitutes a major factor in economic progress in developing countries. It is so vital that any government interested in economic development should pay adequate attention to technology acquisition in its policies and actions. In fact, the principal reason for the ever increasing gap between the income levels of the developed and developing countries today is explained in the continuing advance in technological development in the developed countries which has made their productivity per capita multiples of what it is in the developing countries. Just as the acquisition of technology should be the concern of governments, it should also be the concern of any institution in the public sector and in this connection, the Central Bank of Nigeria which is the apex institution in the financial sector has played some vital role in the acquisition of this crucial input of economic development.

Technology is also an important element of foreign direct investment. The other elements are management and capital. In all matters relating to investment, the promotion of sound financial and monetary structure, stable economic environment and trade and exchange regulations are very important if a country is to induce a satisfactory inflow of the investment. These economic pre-requisites which dominate investment decisions, and constitute a significant part of what investors describe as investment climate are necessary for technology acquisition.

The main objective of this paper is to highlight the contribution a central bank could make to the creation of a conducive economic environment for investment and technology acquisition. It is obvious that such a contribution cannot be direct, it has to be in the form of the efforts the central bank has made (or is making) to develop the financial institutions as well as evolve sound financial structure that could effectively mobilize and channel resources to the productive sectors of the economy. The paper will also seek to describe the ways the Central Bank of Nigeria (CBN) has contributed to the laudable objectives of creating favourable atmosphere for technology acquisition

in Nigeria. As a background to the discussion, Part I of this paper elaborates briefly on some conceptual issues that are germane to transfer of technology through foreign investment and the topic of this paper. The factors likely to affect the flow of technology into a country is discussed in Part II. The intention in this part of the paper is to bring into focus the aspects of these factors that fall into the domain of the monetary authorities. The role of the CBN in the acquisition of technology will then be the subject matter of Part III. Part IV is devoted to summary and conclusion.

PART I

CONCEPT OF TECHNOLOGY ACQUISITION

Technology, in broad terms, refers to the ways and means of solving collective problems. However, this definition can be narrowed down to denote the whole body of the most efficient technical and organizational knowledge and information available for the production of goods and services together with the tools for achieving production. In this narrow sense, two important classes of technology emerge. First, the core technology which constitute the basic information required for the production of a good or service, comprising product specification, blueprints, engineering designs, material requirements, basic production techniques, and operational know-how. The second, ancillary technology is the support system relating to the movement of inputs and delivery of the output. This comprises the handling and transportation of materials, packaging, storage and other ancillary operations.

While technology should be related to the needs, income and socio-economic environment of the people it is designed to serve in many cases, it is inherent in the nature of developing countries that transfer of foreign technology to them must be accompanied with physical movement of capital goods and relevant service inputs. Technological goods such as machine tools, power generators, electric motors, computers, and other capital goods including management and technical services needed for the installation of these complicated, but essential industrial inputs have to be imported. While their importation does not imply real technology transfer in the sense that the country can immediately adapt, manage and generate its own technologies, the influx of the goods is an inevitable stage in the multiplicity of stages leading to the acquisition of foreign technology.

Technology transfer implies ready access to a technical knowledge for production of a good or service and control over the technical knowledge. For a developing country, control over such technical knowledge can only accrue if the skill and information inherent in the technology accrue to the native employees of the local enterprises using the technology. Three broad stages of the acquisition of the foreign technology are identifiable if real, as opposed to apparent technology transfer has taken place. The first stage involves the transfer of capability to operate the technology to the extent that no technical direction from source(s) outside the enterprise is required for achieving target output levels. At this stage, there could be expatriate employees but they are personnel of the local enterprise. The second is attained when output levels are produced by managers, supervisors and operatives who are nationals of the technology-importing countries. This implies that the local enterprise has effectively mastered the imported

technology and could use it effectively. During the third stage, the enterprise should have developed capability to adapt and diversify into similar or related industrial fields, a chain of developments that culminate in independent product and system design. With these capabilities the enterprises should be able to respond creatively, through product design changes, to changes in market conditions using the acquired technology. Further development of the technology should make transplantation and adaptation for use in different fields of production possible. These stages, often referred to broadly as domestication, indigenization, and diffusion stages will ensure that after the transfer of the technology, the country has control over the supply of the product or service. This is the heart of economic development.

With regards to the channels of technology transfer, the most important is the multi-national enterprises which, through their global operations have established wholly-owned subsidiaries, and joint-stock ventures with varying degrees of participation in many developing countries. The traditional package of foreign direct investment, comprising management, capital and technology make the flow of such investment an automatic carrier of technology. This applies largely to product and firm-specific technology. While this remains undisputable, the issues that are being disputed comprise the extent of the technology transferred, the rapidity of the flow of technological ideas from the foreign to local personnel, and the process of achieving the transfer. It is nonetheless certain that multi-nationals are channels of technological goods and perhaps industry. However, in the new form of foreign direct investment which permits the unbundling of the package comprising the investment and creates avenue for choosing the type of industrial inputs that is of interest to a country, various types of channels for foreign technology transfer have been opened up. These channels include product sharing, management contract, service contract and turnkey contract. From the experience of the developing countries that have entered into these arrangements, the technology transferred depends on the types of policies built into contracts and the insistence of the country to ensure that the policies are implemented. Immense benefits could accrue from such contracts if there is adequate provision for training at all levels to ensure that the country acquires that capability to domesticate and indigenise the technology. These arrangements are prevalent in the petroleum, petro-chemicals, agro-allied, mineral processing and heavy manufacturing industries that produce basic technological goods and service including iron and steel, pharmaceuticals, mechanical and electrical equipment. Compliance of the foreign party with such arrangement could require government intervention to compel multinationals to execute agreements relating to training of nationals of host countries.¹ In many developing countries that have achieved real technology transfer in the sense described above, it is through the insistence of their governments on the execution of training aspects of all types of the industrial contracts and agreements existing between their nationals and foreign parties that such countries are able to acquire foreign technologies.²

Licensing of technology to unaffiliated companies is another channel of technology flow. Although this arrangement is not common in Nigeria, it is worth mentioning if only to emphasize the important role it has played in the transfer of technology to the newly industrializing countries (NICs) of Latin America and South East Asia and to direct the attention of Nigerian entrepreneurs to the arrangements because of their potential significant benefits to the country. The product-specific technologies in use by many multinationals are patented to prevent unauthorized use. However, because such

technologies are standard and are also available from alternative sources, their owners are willing to enter into licensing arrangements to permit interested parties to use them. Such arrangements have enhanced the global transactions in technology in spite of regulatory policies because of increased production and technological capabilities in the publicly and privately owned enterprises. For example, several medium-size enterprises have been established in many developing countries for the manufacturing of consumer products and engineering goods based on foreign technologies acquired through licensing arrangement with multinational enterprises without involving the multinationals in equity participation. The most important factor favouring the use of licensing as a means of technology transfer is the strength of the domestic scientific and technological development institutions; and the availability of technological infrastructure in the country. These and other factors will be the subject matter of the next part of this paper.

PART II

FACTORS AFFECTING THE FLOW OF TECHNOLOGY TO A COUNTRY

The flow of foreign technology into a developing country tends to follow the same direction as direct foreign investment. Consequently, regulations directed to affect the flow of foreign investment, even if they are not meant to regulate the flow of technology, will automatically affect foreign technology flows. Similarly, regulations affecting foreign technology flows have direct impact on the flow of foreign investment. In what follows, the factors affecting the flow of foreign technology are discussed with a view to identifying those that fall within the purview of a central bank.

The most important economic factor that could influence the flow of foreign technology into a country comprises the type of macro-economic policies pursued, or more specifically, the financial and exchange rate policies. In order to attract foreign direct investments and achieve satisfactory inflow of technology, a country should maintain a stable economic environment and adopt financial and exchange rate policies that could attract foreign investors. These include policy measures directed to influence the structure, level of development, and efficiency of the financial and banking institutions which foreign investors regard as the gateway between the host country and the rest of the world; the most important institutions in the money and capital markets; and the appropriate infrastructure for the mobilization of institutional savings. The flow of foreign technology to a country will also be facilitated by the type of opportunities in these markets to raise local investible funds both for long-, medium- and short-term investments. For illustration, in Nigeria, short- and medium-term financing are provided by commercial and merchant banks while long-term loans and equity participation are available in the development banks such as the Nigerian Industrial Development Bank, the Nigerian Bank for Commerce and Industry and the Federal Mortgage Bank. In addition, there are opportunities to float debentures, bonds and equity, which are important instruments for channelling savings to productive

1. In Nigeria, the National Office of Industrial Property is the agency of the Federal Government for monitoring industrial agreements signed between Nigerians and foreign parties.

2. Nigerians have entered into many industrial contracts and agreements with many foreign parties in many industries including manufacturing and oil mining and processing. Failure to honour these contracts and agreements especially the training aspects of the agreements, has contributed immensely to the poor state of technology acquisition in Nigeria.

investors. The Securities and Exchange Commission and the Nigerian Stock Exchange are the institutions that ensure the orderly placement of these securities in the Nigerian capital market. The insurance companies and other savings-type institutions also play significant roles in the collection and allocation of domestic savings, which play fundamental role in the financing of technology transfer and acquisition. A central bank of a developing country has to be involved in the establishment of many of these institutions that constitute the inevitable infrastructure of a sound financial system.

With regard to the exchange rate policy, stability of the rates is crucial for long-term investment planning, an unavoidable stage in investment decisions and a very crucial factor in the attraction and acquisition of foreign technology. Also, the procedure for allocating foreign exchange among users is a key factor in the inflow of foreign technology because of the important role foreign exchange plays in the acquisition of technological goods and in the survival of enterprises using the foreign technology. These factors, which are very important to the suitability of the economic environment for investment and technology acquisition belong to the areas of operation of central bank whose function includes the supervision of the banks that allocate the foreign exchange and formulation of policies that would ensure effective flow of financial resources into the real sectors of the economy.

Another factor affecting the flow of foreign technology is the type of micro-economic policies pursued. Micro-economic policy measures should be such that provide incentives to investors in order to enhance the country's competitiveness. Such incentives tend to increase estimated return to investment projects thereby raising the profitability of investment in the country, thereby increasing the competitiveness of the country among foreign investors. In Nigeria, a vital strategy in the attraction of foreign technology includes the granting of various incentives to foreign direct investment. The effect of such incentives on the flow of technology is to reinforce the contribution of favourable economic climate. The incentives can be classified as follows:—

Tax Concession

- (i) Tax Relief for Research and Development
- (ii) Pioneer Status
- (iii) Companies' income tax relief
- (iv) Tax Free Dividend
- (v) Depreciation Allowance for the purpose of computing taxable profit.
- (vi) Tariff concession.

Financial and Export Promotion Incentives

The following incentives are designed to encourage investment in non-oil export production; and in particular, to attract the multi-national enterprises that already have established foreign markets to use the country as export platforms where manufactured goods will be produced and exported.

The incentives comprise:—

- (i) The Custom (Duty Drawback) Regulations
- (ii) Export Credit Guarantee and Insurance Scheme
- (iii) Retention of foreign exchange earnings by exporters in Domiciliary Account in local banks.
- (iv) Refinancing of Export and Rediscount Facility
- (v) Creation of Export Development Fund
- (vi) Extra capital allowance of 5 per cent on plants and equipment for export-oriented industries.
- (vii) The establishment of an Export Processing Zone

The implementation of those incentive measures involving the banks can be carried out through a central bank.

As mentioned above, acquisition of foreign technology is also facilitated by domestic availability of technological infrastructure. This comprises projects whose products are basic industrial inputs. The enormity of the amount of the investments in such projects has compelled the governments of many developing countries including Nigeria to be involved in the establishment of the projects rather than leave it entirely to private sector agents. Examples of such projects are iron and steel, petro-chemicals, fertilizer production, pulp and paper, machine tools, etc. There are also many other projects in the oil, gas, power and energy area whose execution will strengthen the technological base of a country. It is important to note that within the limits of available funds, the Federal Government has been heavily involved in the establishment of some of these projects. Mention must be made of such infrastructural facilities like roads, telecommunications, electricity supply, water, etc. Stability in the provision of the services of the infrastructures and efficiency in their operations are important to the inflow of foreign technology.

The procedure for repatriating capital, profits, dividend and other associated transfers relating to technology contracts such as royalties, license, management and directors' fees, salaries for key expatriate personnels, etc. is very crucial to the flow of technology. Foreign investors that are invariably the owners of the technologies are not only interested in making profits when profits are made, investors want to ensure that the proportion accruing to them could be transferred without hindrance. Consequently, countries which are unpredictable with respect to their profit repatriation policies, experience considerable difficulties in attracting foreign technology. Developments in a country's policy affecting foreign participation, technology screening and regulation are usually evaluated by technology owners according to the impact such policies produce on their ability to transfer their capital while still meeting previous commitments. Thus, technology will shun off countries whose policies are deemed unfavourable. Policies relating to capital transactions and transfers belong to the

government, although a central bank could be used to implement such policies.

As already pointed out in the first part of this paper, the quality of the human resources available in a country is of immense significance to the absorption and application of a foreign technology. This depends largely on the technical and professional cadres. The basic power of the human factor is knowledge, the acquisition of which depends largely on the strength and quality of the educational institutions especially the scientific and research institutes. The quality of the services of the educational institutions, starting from primary to the highest level of acquiring basic education, to the vocational, technical and technological institutes for the development of technological capabilities as well as the research and development (R&D) institutions are very crucial to the stages of domestication, indigenization and diffusion of the foreign technologies flowing into a country. The ability to imbibe the knowledge contained in the training programmes, whether on-the-job or formal, which are contained in the various contracts made with foreign experts depends on the quality of the basic and technical education previously received. This is one crucial reason why government of a country should not be indifferent to the development affecting the standards of education in the country. The health of the human factor is also equally important. Productivity of workers cannot be expected to increase in a country which does not make sustained effective efforts to maintain acceptable health standards among its citizens.

Without pretending to have exhausted the list of the factors influencing the flow of foreign technology into a country, the foregoing provides the most important ones. The aspects involving the central bank of a country in technology acquisition are as presented above. They include the formulation of policies affecting the trade and exchange transactions between the country and the rest of the world; and the promotion of sound monetary, financial and exchange rate policies. In the next part of the paper, the ways the Central Bank of Nigeria renders these functions will be discussed.

PART III

THE ROLE OF THE CENTRAL BANK OF NIGERIA IN TECHNOLOGY ACQUISITION FOR ECONOMIC DEVELOPMENT

Institutional Development

This part of the paper highlights briefly the Bank's participation in the establishment of government-sponsored financial institutions which are central to the efficiency of the financial sector in the mobilization and channelling of savings for purposes of capital formation. Although the major pre-occupation of the Bank's management in this respect was the creation of institutional framework that is conducive to the effective mobilization and channelling of savings, and thereby create a viable environment for investment projects, there is no doubt that the measures adopted could have significant positive impact on the pace of technology acquisition and economic development.

During the first two decades of its establishment the Bank adopted measures that led to the rapid transformation of the rudimentary financial sector that existed at that time. This led to the broadening of the money market instruments to include treasury bill, call money as a means of interbank borrowing, treasury certificate, certificate of deposit (negotiable and non-negotiable) and banker's unit fund. Depending on their maturity periods, all the instruments are defined by the CBN as eligible to be counted as liquid assets for the purpose of computing the liquidity ratio. The introduction of these instruments provides channels for the funds of surplus sectors of the economy to be rationed among the deficit sectors. In particular, the certificates of deposits and the banker's unit fund which are designed to make the surplus commercial and merchant banks' funds as well as those of other savings institutions available to merchant banks and the government constitute important channels for the transformation of financial savings to productive investment.

Another way in which the CBN has influenced the course and pace of technology acquisition for the development of the Nigeria's economy is through its participation in the establishment of, and continued assistance to key institutions in the capital market. This market comprises the development banks, corporations, investment trust, banks, mutual funds such as co-operative banks, insurance companies, savings and loans institutions. The Nigerian Stock Exchange, which is the hub of the market was nurtured in its formative years through CBN subventions. The establishment of the sister institution, the Nigerian Securities and Exchange Commission, which is responsible for determining the price and timing at which shares or debentures of a company are to be sold, was due to the substantial resources, in material and men, of the CBN. For many years, the Commission's staff were on the Bank's payroll.

The Bank's efforts in the creation of a financial structure that could mobilize and channel savings to productive investment also involve the Bank in taking up substantial equity participation in the development banks. These institutions, which operate largely in the market for medium- and long-term capital include the Nigerian Industrial Development Bank (NIDB), Nigerian Bank for Commerce and Industry (NBCI), and Federal Mortgage Bank. The equity subscription of the CBN in each of these institutions was 40 per cent of their paid-up capital. The equity and loan capital as well as the professional advisory services which these institutions offer to industrialists represent important contribution towards technology acquisition in the country.

Other roles of the CBN which, although primarily aimed at developing the banking system but are capable of enhancing the inflow of technology include the Rural Banking Programme introduced in 1977. This programme has resulted in the creation of 602 commercial bank branches in the rural areas as at the end of 1988. The debt conversion programme of the Federal Government which is being implemented by the CBN is also capable of enhancing technology acquisition through its linkage with the inflow of foreign direct investment. Similarly, the Small and Medium Enterprises Apex Unit established to disburse a World Bank loan to eligible Nigerian enterprises also contributes greatly to technology transfer to the Nigerian economy. The latest in the series of the institutions promoted by the CBN for the purpose of guaranteeing the confidence of depositors in the banking system is the Nigerian Deposit Insurance Corporation.

Although the deregulation of Nigeria's financial market is not yet completed, the Bank has initiated a reform of the financial system with a view to liberating the economy

from financial repression. Measures already introduced include simplification of the format for sectoral credit allocation, decontrol of bank deposit and lending rates, introduction of the auction system for dealing in treasury instruments and liberalization of procedures for establishing new banks. The CBN has also restructured its monetary policy to include the establishment of prudential guidelines for banks and the requirement of higher minimum capital base. It has also been able to secure the support of government in the form of a Decree empowering it to carry out the comprehensive financial sector reforms that it has planned to introduce.³ Also, in recognition of the need to instil confidence in the banking system, the CBN has conducted several examinations into banks with a view to ascertaining their liquidity and degree of solvency. Action will be taken on banks found insolvent. Having taken these steps it can be reasonably concluded that the next step which is a complete deregulation of the financial sector will soon be taken.

Economic Environment

As mentioned previously, stability of the economic environment is very crucial to the inflow of technology. A fundamental factor underlying the economic environment is the situation of general level of prices, balance of payments and growth in output. Clearly, inappropriate levels of these variables are not favourable to technology acquisition and investment. The role of monetary policy in achieving satisfactory levels of these variables could be appreciated if it is realized that money represents a claim on resources, and that in a free market society holders of money are free moral and economic agents who are not restricted or have any inhibitions to exercise their rights. Consider, for example, a situation where money supply exceeds the desired money holdings. Irrespective of the cause, the money market will be in disequilibrium as money holders are holding assets in proportions they consider unsuitable. The holders of money will reconstitute their asset holdings and this may affect the magnitudes of real and financial assets and, ultimately, their prices. In the final analysis, in response to the excess money supply, interest rates will tend to fall, exchange rate will tend to depreciate while the general level of prices will rise because of the accompanying increase in aggregate demand. If the excess money supply is sustained, inflationary expectations will build up and ensure a reversal of the downward trend in interest rates. The sustained increase in the general level of prices will intensify exchange rate depreciation all leading to instability in the financial, goods and labour markets. The CBN is an important organ of the monetary authorities responsible for ensuring that money does not constitute a nuisance to economic activities. Money should lubricate the wheel of economic activities.

The array of instruments of monetary policy at the disposal of the Bank includes the traditional ones: open market operations, variable rediscount rate and moral suasion; and the new ones, namely, reserve requirements (cash, liquid assets, reserves and supplementary reserves) and sectoral credit allocation. Appropriate manipulation of these instruments has significant effects on the levels of money stock, interest rates, prices and growth of output; that is, variables that are vital to the stability of the economic environment.

3. Federal Republic of Nigeria. Central Bank of Nigeria Decree 1991. Supplement to Official Gazette Extraordinary No. 26, Vol. 78, June 1991. Lagos 1991.

There is no doubt that the CBN, in order to successfully discharge this function requires the collaboration of the government, banks, as well as the other institutions in the financial system. In recognition of this fact, government has promulgated two Decrees giving the CBN complete autonomy over the financial system.⁴ The CBN has also made recommendations to government for the establishment of a Monetary Policy Co-ordinating Committee comprising high officials of the Bank, and the Ministry of Finance that will ensure co-ordination between monetary policy and the fiscal operations of government. The Committee, if and when established, will undoubtedly contribute to the ability of the CBN to maintain monetary stability and create a stable financial and economic environment suitable for investment and technology acquisition.

Trade and Exchange Regulations

The CBN assists the Federal Government in the formulation and implementation of policies regarding trade and exchange transactions between the country and the rest of the world. Within the framework of the current de-regulation and liberation arrangements, the CBN organizes the foreign exchange market for the purpose of determining the naira exchange rate and allocating available foreign exchange among the authorised dealers which are currently largely banks. Given the important role of foreign exchange in the various stages of acquisition of foreign technology and the role of exchange rate in determining the aggregate local cost of investment projects, the Bank occupies a strategic position in the acquisition of foreign technology for the economic development of the country. Consequently, the Bank continues to make regulations affecting the repatriation of the foreign exchange earned on exports, monitors the disbursement of foreign exchange to users with a view to eliminating waste; and as much as possible, minimises incidents of fraud.

Under the current system, banks have been assigned the important role of allocating the foreign exchange obtained from the CBN and autonomous sources among prospective users. It is desirable that priority be given to new investment projects and industrial production in the allocation of foreign exchange. This is born out of realization of the fact that the only means of acquiring technological goods and services in a developing country like ours is the ability to pay for the goods and services. However, under a free market arrangement in which banks are independently left to allocate foreign exchange profit motive may prevail over the society's aspiration for economic growth and development which are the fruits of technology acquisition and investment. In this connection, the CBN ensures through moral suasion on banks to channel domestic and foreign financial resources to manufacturing and other productive sectors.

Certificate of Importation, Transfer of Profits and Dividends, Capital Repatriation

The involvement of the Bank in the current procedure for acquiring technological goods in Nigeria is clearly defined in section 14 of the Second-tier Foreign Exchange Market (SFEM) Decree 1986. "Subject to the compliance with the provision of the

4. Federal Republic of Nigeria. Central Bank of Nigeria Decree 1991; and Banks and Other Financial Institutions Decree 1991 (Decrees 24 and 25). Official Gazette Lagos, June 25, 1991.

Nigerian Enterprises Promotion Decree (NEPD), any person may invest in an appropriate enterprise any foreign currency imported into Nigeria". The value of such investment may be converted to local currency at (S)FEM rate. The investor, acting through his/her bank, shall obtain a Certificate of Importation from the CBN within 14 days the capital is imported.

Application for remittance of dividends of non-resident shareholders must be forwarded to the Ministry of Finance and Economic Development accompanied by the following:—

- (a) Evidence of Approved Status on non-resident capital investment or evidence of previous approval to remit dividend.
- (b) Tax Clearance Certificate issued by the Federal Department of Inland Revenue on the account to be remitted.
- (c) Audited account for the dividends were declared and two preceding years.
- (d) Board of Directors' resolution
- (e) Declaration that the dividend declared has not exceeded the maximum allowed by the current policy.

On receiving the approval mentioned above, the capital and the profits or dividend derived from the original investment could be repatriated at the option of the investor through the FEM. The role of the CBN is confined to the important stages of ascertaining that the original capital was indeed imported. To the extent that these imports are technological goods the Bank's involvement in the life of foreign technology imported into the country begins at the very initial stage of the arrival of the technological goods into the country. Perhaps it is necessary to state that, unlike in the days of exchange control, the Bank is no longer involved in the transfer of profits and dividends. Companies wishing to transfer profits and dividends merely need to obtain the authorization of the Federal Ministry of Finance as stated above; and effect the transfer through its banks.

PART IV

SUMMARY AND CONCLUSION

This paper has examined the role a central bank could play in the acquisition of foreign technology. In the process of doing this, the implication of meaningful real technology transfer was discussed while suggestions were proffered, as to what a country especially a developing country such as Nigeria could do in order to achieve real, as distinguished from apparent, technology transfer. Emphasis was placed on training of the indigenous personnel at all levels including the middle and top level management. The crucial role the government must play in ensuring the compliance of the foreign party to an agreement involving transfer of foreign technology was also stressed. It was equally emphasized that channels such as turnkey, product sharing,

service and management contracts which are new forms of acquiring foreign technology in resource-based industries like mining, petroleum, petrochemical and such heavy manufacturing industries like iron and steel, fertilizer production, etc. should not only lay emphasis on training the indigenous personnel but should also be effectively enforced to ensure that the stages of domestication and indigenization of the technology are at least acquired within the shortest time possible.

The paper also examines in general the factor affecting the inflow of foreign technology to a country with a view to identifying those that are within the jurisdiction of the monetary authorities especially the central bank. These concern the creation of a favourable economic environment for investment through the introduction and implementation of sound monetary, financial and exchange rate policy. Another important factor highlighted in the paper is the development of institutions required for the mobilization and channelling of savings to more productive investment.

The role of the CBN in the acquisition of technology for economic development was also examined. Since its inception, the Bank has devoted much efforts to the rapid development of the rudimental monetary and financial sectors with a view to effecting efficient mobilization and channelling of domestic savings to productive sectors of the Nigerian economy. The Bank is also involved in the creation of suitable economic environment for investment and technology inflow through the monetary policy measures it formulates and implements. Other aspects of its contribution to the transfer of foreign technology includes the orderly allocations of foreign exchange among authorized dealers.

On the whole, the role of the central bank in the promotion of technology acquisition is not direct in the sense that the bank is not involved in the processes of domestication, indigenisation and diffusion of a particular technology. However, through the financial, exchange rate and economic policies pursued, a central bank could significantly influence technology acquisition. The policies the bank introduces for developing the institutional framework for mobilization and channelling of savings for capital formation; efforts made to promote efficiency of the financial institutions in rationing financial resources among the real sectors of the economy; the effectiveness of the system for allocating foreign exchange among users, the stability and level of exchange rate of the currency the bank issues are important aspects of what a central bank would contribute to the acquisition of technology. Other important contributions a central bank could make to promote technology acquisition are to ensure that policies result in stability of general price level and interest rates and achieve balance of payment viability. A central bank can also be used to monitor the flow of technological goods so as to ensure orderly transfer of profits and dividends and the initial capital when desired.

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