

10 November 1993

ENGLISH ONLY

TRADE AND DEVELOPMENT BOARD  
Ad Hoc Working Group on  
Interrelationship between Investment  
and Technology Transfer  
Second session  
Geneva, 13 December 1993

COUNTRY CASE STUDY SUBMITTED BY THE FEDERAL REPUBLIC OF NIGERIA\*

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\* The attached country case study is circulated in the language and form in which it was received.

TD/B/WG.5/Misc.6  
GE.93-54265



**INVESTMENT FLOWS, TRANSFER OF  
TECHNOLOGY AND COMPETITIVENESS**

**THE NIGERIAN CASE STUDY**

**NATIONAL OFFICE OF TECHNOLOGY  
ACQUISITION AND PROMOTION  
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**OCTOBER, 1993**



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INVESTMENT FLOWS, TRANSFER OF TECHNOLOGY  
AND COMPETITIVENESS: NIGERIAN CASE STUDY

SUMMARY

In accordance with the decisions of the UNCTAD Ad Hoc Working Group on the Interrelationship between Investment and Technology Transfer, the Nigerian Case Study was carried out. The study drew from macro-economic and social statistics as well as firm level data obtained through administered questionnaires. Over 50 firms were covered. The main findings of the Nigerian Case Study are summarised as follows:-

1.1 Salient Features of Nigeria's Social and Economic Structure

1.1.1 Group Domestic Product

Macro-economic data covering a twelve-year period from 1980 to 1992 showed that the Nigerian economy was in decline. Gross Domestic Product (GDP) at constant 1984 costs went from \$121.8 billion (US) in 1981 to \$122.1 billion in 1982 and declined steadily to \$5.7 billion in 1992. This dismal performance was more pronounced in dollar terms. However when examined in Naira terms it showed only three years of absolute decline. Much of the fall in dollar terms is explicable by the precipitate depreciation of the Nigerian currency over the period. It is meaningless to talk of GDP growth rate in view of the negative trend observed.

1.1.2 Sectoral Structure of GDP

The fastest growing sectors of the GDP were Finance and Insurance, and Government Services. Wholesale and Retail trading remained relatively stable in its share of GDP over the period while the manufacturing sector declined remarkably. Crude Petroleum, Mining, Quarrying fell from 45% of GDP in 1981 to just over 13% in 1992. Agriculture also declined from 51% of GDP in 1981 to 6.3% in 1992. This absolute decline is better appreciated when it is recalled that GDP in dollar terms had declined to less than 5% of the 1981 level.

1.2.1 Imports, Exports and Balance of Payments

The volume of merchandise trade also declined in absolute terms. Exports stood at \$21.2 billion while imports were \$13.6 billion in 1980, giving a current balance of \$7.6 billion.

Export performance was erratic in the period, with the worst year being 1986 when exports stood at \$2.8 billion and the best year being 1980 when the value was \$21.2 billion. Imports have the same pattern with exports within the period. Apart from 1981 and 1982 when there were negative balance of payments, other years under review have been positive.

### 1.3.1 Population

Nigeria's population in 1992 as per 1991 census is put at 91.1 million while the projection from 1963 census is 127.1 million. It is estimated to have been growing at 2.1% while the 1963 growth rate is 2.5%. Nigeria's Labour force is estimated to be 41.5% while literacy rates are estimated to within 51% and 54% in the period.

## 2.0 Technology Flows, Including Investment-related Flows and Their Determinants.

### 2.1 Capital Goods Imports

The important flows examined are imports of capital goods foreign direct investment, joint ventures, licensing agreement and technical co-operation grants. Capital goods imports declined from \$9.2 billion in 1981 to \$1.3 billion in 1988. It stood at \$2.1 billion by 1992. This decline was reflected in the firms surveyed.

### 2.2 Foreign Direct Investment

Data on investment flows were collected for the years 1986 - 1992. This also showed a decline from an inflow of \$963.2 million in 1986 to a net outflow of \$57.8 million in 1992. Trade and suppliers credit form the bulk of capital flows. In terms of concentration, Textiles, Food Products and Other Chemicals have attracted over 37% of foreign capital flows into manufacturing.

### 2.3 Joint Ventures, Licensing Agreements and Other Collaborative Agreements.

Macro-economic data in respect of joint ventures and other form of Collaborative Agreements have been examined. Responses from firms indicate that foreign ownership ranges generally from 10% to 40%. Foreign ownership exceeded 60% in five firms. The National Office

of Technology Acquisition and Promotion had appraised over 2000 technology agreements and approved 1030 of these in the period from 1979 - 1992.

#### 2.4 Mechanisms of Technology Transfer

Firm-level surveys were relied on in assessing the mechanisms of transfer of technology. Technology linkages between multinational firms and their Nigerian subsidiaries were observed to be very weak. International Trading net-works especially in the manufacturing sector did not seem to have been developed in the period. Other elements of technology transfer such as information flow, R & D expenditure, R & D personnel in firms and the intensity of technology interaction were investigated in the questionnaires and found to be insignificant.

#### 3.0 Factors Influencing Technology Flows

The issues examined in this section were those related to policies of home government (technology owners), firm strategies economic and regulatory framework of host (recipient) country, human resource and technology base, and the general infrastructure. Nigeria has bilateral agreements with several countries including the UK, USA, Canada, Germany, Italy, France and the former Soviet Union. The most important factor that had influenced the flow of technology to Nigeria seemed to be the Structural Adjustment Programme started in 1986. That has led to speculative activities and capital flight which did not seem to have aided technology flows. SAP also seemed to have negated the best provisions of the industrial incentives provided by the Government.

#### 3.1 Human Resource and Technology Base

With a population of over 90 million, Nigeria has a large base for skills development. It has 38 Polytechnics, 56 Colleges of Education, and 37 Universities, as at 1992. Enrolment in these tertiary institutions in 1990 stood at 73, 161 in Polytechnics, 85, 574 in Colleges of Education, and 180,871 in Universities. This is a very strong base for

technological development. The Government also funds research and development in 24 Research Institutes. Applied Research Establishments capable of developing projects to prototype level and other technological infrastructure items are still in their infancy in Nigeria.

### 3.2 General Infrastructure

The country had developed good roads network, telecommunications networks, post offices, electricity and water supply schemes that form the base for rapid economic development. It had also started its first Export Processing Zone (EPZ) in Calabar. Although these facilities exist, they are not adequate to sustain our technological development.

The new and emerging technologies have had important impacts on all economics world-wide, responses from Nigerian firms seem to indicate that the impacts of these technologies have not been felt owing to their high cost and protected nature.

### 4.0 Contribution of Technology and Investment Flows To Competitiveness and Technology Capacity Building

The conclusions that can be drawn from the country's case study are:-

- i) Technolgy flows declined over the entire period (1980 - 1992).
- ii) Investment flows also declined and became negative in the last two years.
- iii) Export performance of the Nigerian economy was minimal in the manufacturing sector, reasonable in the Agro-based and the petroleum sector.
- iv) Nigeria's international competitiveness in terms of manufactured exports actually declined - while it was average in the Petroleum and Agro-based sectors.
- v) The acquisition of technology in petroleum and some cash crop sectors of the Nigerian agriculture has enhanced the country's competitiveness in export trade among developing and developed countries.
- vi) Management and organizational technology has also been improved through foreign technology import thereby promoting international trade and competitiveness.

INVESTMENT FLOWS, TRANSFER OF TECHNOLOGY AND  
COMPETITIVENESS: NIGERIAN CASE STUDY

INTRODUCTION

1.0 Brief Historical Background

The United Nations Conference on Trade and Development (UNCTAD) at its eighth session adopted a text entitled "A New Partnership for Development: Cartagena Commitment". It recognised the crucial role that technology plays both as a determinant of ability to participate in world trade in manufactures and services, and as one of the fundamental factors of economic and social development. UNCTAD therefore emphasized policies and measures that stimulate technology flows and promote technological innovation in developing countries.

- 1.1 On 7th May, 1992 UNCTAD formed an Ad Hoc Working Group on the Interrelationship between Investment and Technology Transfer to "provide a forum for the exchange of experiences among members states so as to enable them to draw appropriate lessons for the formulation and implementation of policies at the national, and international level and for international economic co-operation" in pursuit of the objectives of the Cartagena commitment. One of the decisions of the Ad Hoc Working Group was that some country case studies be developed as an important mechanism for the exchange of experiences among member states. The case studies were to assist the Ad Hoc Working Group in "building a consensus on investment and technology and how related factors influence technological capacity-building and international competitiveness of countries." It was intended that the country case studies would be presented and discussed by the Ad Hoc Working Group, and the results were to form part of the Group's final report to UNCTAD. This report from Nigeria is one of the country Case Studies and it was prepared in accordance with the Group's Work Programme dealing with: Investment Flows, Transfer of Technology and Competitiveness." It is based on the formats, outlines, and Annexures provided by the UNCTAD Secretariat for this issue.

1.2 The Salient Features of Nigeria's Social and Economic Structure:

1.2.1 Gross Domestic Product

All available statistics show that the Nigerian economy is an economy in decline. Much of the decline is due to the precipitate slide in the value of the Nigerian currency, the Naira. As shown in our Table 1.0. The GDP at constant 1984 factor cost stood at ₦80.4 billion in 1981, which was the equivalent of \$121.8 billion (US). GDP rose slightly in 1982 and declined in absolute terms reaching its lowest Naira level of ₦73.1 billion in 1984. Thereafter it had grown marginally every year with the exception of 1988 when another decline was witnessed. As at 1992, GDP was projected to be ₦98.4 billion.

Although the guidelines from UNCTAD required comparisons to be made in US dollars, it can be seen that without giving the Naira (or local currency) picture, a dismal picture will be painted of an economy which started with a GDP of nearly \$122 billion (US) in 1981 and declined to only \$5.7 billion in 1992. Some of the explanation can be seen from Table 1.4 which gives the trend in the exchange rate.

Most of the declined is due to the adverse fortunes of Nigeria's oil, which is the main source of its earnings.

1.2.2 Gross Domestic Product Growth Rate

With respect to Nigeria we cannot discuss growth in GDP in any meaningful sense. It seems more meaningful to discuss rates of change. Apart from a positive change of 8.1% in 1985, the entire 12 years shown in our Table 1.0 show a dismal performance of the economy in US Dollar terms. The picture is mitigated when we examine GDP on the basis of the Naira. There were only three years of absolute decline - 1983, 1984, and 1988. But the positive growth rate even in terms of the Naira still indicate that the economy was not vibrant in the years under review.

1.2.3. Sectoral Structure of GDP

The most important structural change observable is the the absolute and relative decline of the real sectors of the economy - agricultural, mining, petroleum etc. Agriculture declined from over 51% of GDP in 1981 to 38.5% by 1992. Crude petroleum, Mining and Quarrying also declined from close to 45% in 1981 to just over 13% by 1992. The collapse of the crude oil market seems to be the most important factor responsible for the structural change in the GDP. The sector that has grown in spite of the absolute decline of GDP in the Government sector. Government services went from 7.5% in 1981 to 9% of GDP in 1992. The growth of this sector has been shown as responsible for the high inflation rates of the economy. Another sector that has maintained its share of GDP more or less, is the Wholesale and Retail trading sector which went from less than 15% in 1981 to just below 12.5% in 1992. The most vibrant sector of the economy has remained the Finance and Insurance sector which grew from less than 5% in 1988 to nearly 9% of GDP in 1992. In effect, the real sector has declined while Government and the financial sectors have expanded phenomenally. See Table 1.2.

1.2.4. Investment

In order to appreciate what has happened to investment during the period under review, it is important to recall that GDP actually declined over the period. That decline affected every component of GDP apart from the two sectors highlighted. Our Table 1.6 shows that the hardest hit by the decline in GDP was private consumption which fell over the period from 79.2% of GDP in 1982 to 65.2% by 1992. The most sudden fall was in 1987 when it went from 78.4% the previous year to 52.5%. Gross domestic investment fell from 17.3% in 1981 to 6.3% in 1992 in percentage terms. When we recall that GDP declined in dollar terms from \$121.8 billion to \$5.7 billion, it can be seen that Gross Domestic Investment for the entire economy fell below \$360 million (US), in 1992. There has also been a decline in capital inflow over the period. This is treated in greater detail in Chapter Two.

1.2.5. Imports, Exports, Balance of Payments

Nigeria's merchandise export has been dominated by crude petroleum, since the early 1970's. Movements in the merchandise trade had followed the vicissitudes of the international oil market. In spite of this, however, the country has recorded substantial positive balances on its merchandise trade. In 1980, exports stood at \$21,192.1 million while imports were \$13,576.0 million and a current balance of \$7,616.6 million. The highest balance was recorded in 1985. Thereafter it declined sharply. Another peak was recorded in 1990 which was \$8,723.1 million obviously due to the temporary fortunes from the oil market. The balance of payments position of the country has worsened over the years in spite of the positive balance on the current account due to the growing debt burden of the country. Much of the debt overhang has been cushioned by the debt-swap and debt rescheduling of the Government. Figure 1.1 gives a chart of the external debt position of the country from 1980. Table 1.8, gives a detail structure of the Nigerian Balance of Payment from 1982 to 1992.

1.2.6. Population and Population Growth

The population of Nigeria is still a matter of controversy. The most reliable census held up till 1991 was the 1963 census. Most figures of Nigeria's population given for years up to 1990 were projections of the 1963 census figures. The World Bank in its various country surveys of Nigeria had based its analysis on projections of the 1963 census. Using 1963 as base year, a projection of the population figures by the Federal Office of Statistics indicates that the population of Nigeria by 1989 was 125.5 million, from a base of 60.3 million in 1960. The 1991 census however shows the population as 88.5 million, so that the figure for 1992 would stand at 91.3 million see Table 1.9.

The labour force, defined as all person between the ages of 15 years and 65 years is shown on that Table as 32.2 million in 1980 and 41.5 million in 1990. Projections have been based on a growth rate of 2.5% per annum. The National Population Commission has used a growth rate of 2.1 for its own projections.



1.2.7. Literacy Rates

There are no firm figures regarding literacy rates since the details of the census results have not been released. However, it is estimated that adult literacy rates are in the order of 50 to 54 per cent. Table 1.10 gives a set of selected social indicators. Between 1988 and 1992, literacy rates are 49.8%, 50.1%, 52.2% and 54.0% respectively.

Table 1.0

GROSS DOMESTIC PRODUCT AT CONSTANT  
1984 - FACTOR COSTS

Year	GDP (Billion ₦)	GDP (Billion \$ US)	% Change (\$ GDP)	% Change (₦ GDP)
1981	80.4	121.8	-	-
1982	80.6	122.1	0.2	0.2
1983	76.8	116.2	-5.0	-4.8
1984	71.3	108.0	-7.1	-7.0
1985	77.1	116.8	8.1	8.1
1986	77.9	30.0	-74.3	+1.0
1987	79.3	18.4	-38.7	+1.8
1988	77.8	16.6	-9.8	-1.9
1989	85.5	11.3	-32.1	7.3
1990	90.4	11.3	0.0	8.3
1991	94.0	9.5	-15.9	4.0
1992	98.4	5.7	-40.0	4.7

- Sources
1. Federal office of Statistics
  2. Central Bank of Nigeria
  3. Central Planning Commission.

Figure 1.1

# EXTERNAL PUBLIC DEBT (END OF PERIOD)

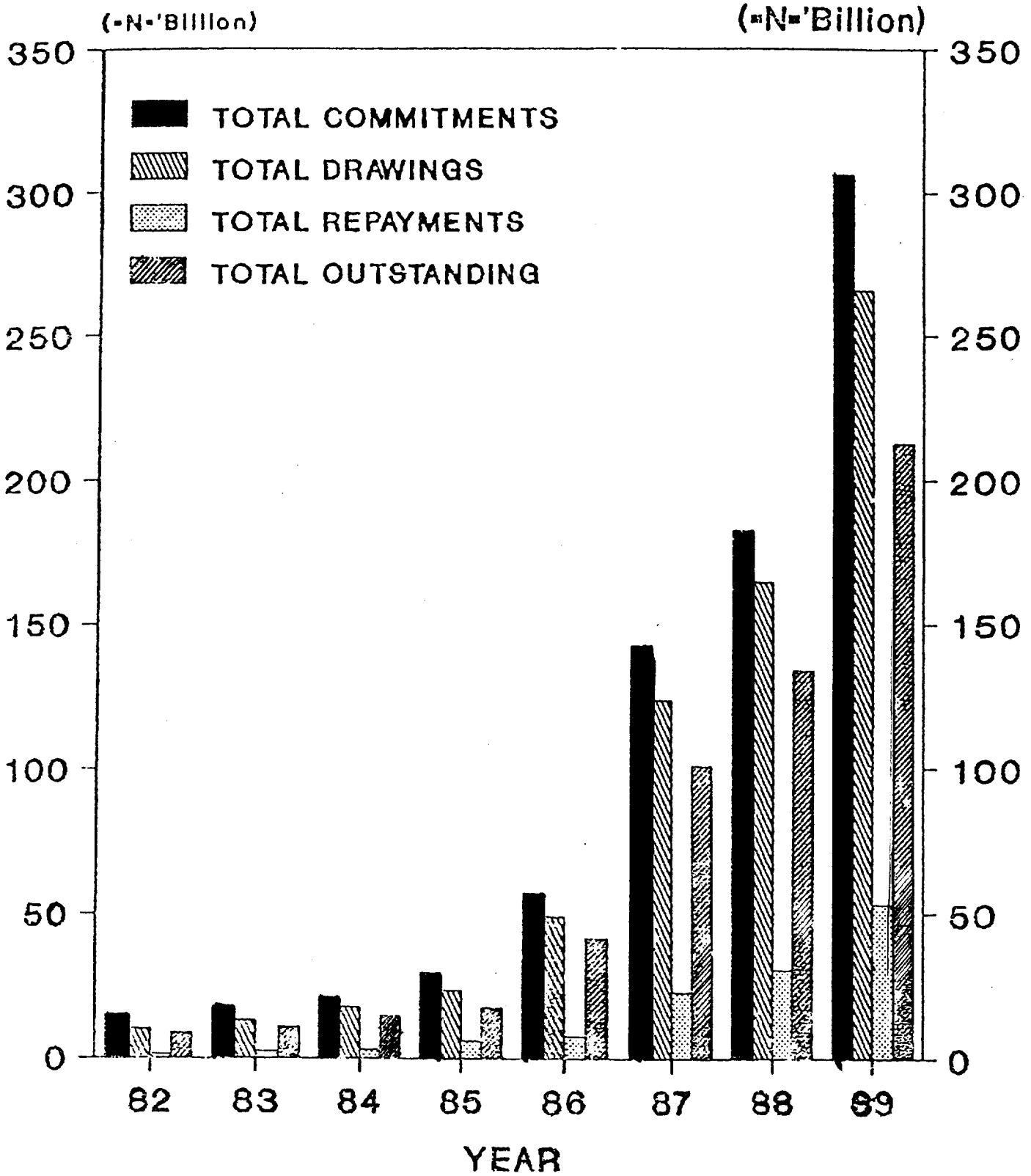


Table 1.1.2

GROSS DOMESTIC PRODUCT AT 1984 CONSTANT FACTOR COST 1987 - 1989  
(\$ MILLION)

Activity Sector	1981	1982	1983	1984	1985	1986	1987	1988	1989
1. Agriculture	29600.1	27108.8	23613.1	22054.2	23506.3	13476.3	5666.4	5473.4	3540.0
2. Livestock	6341.9	6006.3	5863.7	5832.5	5370.8	2724.9	1222.6	214.7	688.8
3. Forestry	2130.0	1809.6	1652.9	1647.5	1442.0	823.8	363.7	323.0	150.6
4. Fishing	2513.0	2338.8	856.8	1486.9	826.4	498.8	171.8	221.1	202.8
5. Mining & Quarrying	17834.6	14313.5	12186.3	13236.7	12038.5	5789.5	2289.6	2166.4	1325.2
5.1 Coal	1.8	0.8	0.6	1.0	1.6	0.8	0.3	0.2	0.1
5.2 Crude Petroleum & Gas	16370.4	12986.2	11278.3	12473.1	11630.6	5677.3	2235.2	2114.1	1290.6
5.3 Metal Ore	33.4	22.3	16.4	12.3	7.7	0.9	1.3	1.3	0.8
5.4 Quarry & Others	1428.8	1304.1	890.8	750.3	398.7	110.5	52.7	50.8	32.6
6. Manufacturing	11554.9	11678.4	7393.3	6421.0	6615.3	3275.3	1502.4	1483.3	928.7
6.1 Large Scale	9847.3	9980.4	6386.6	5500.6	5667.1	2805.8	1287.0	1271.3	755.0
6.2 Small Scale	1707.5	1697.9	1006.6	920.4	948.3	469.5	215.4	212.1	133.1
7. Utilities	794.0	705.6	740.2	670.9	529.8	212.0	98.0	91.5	59.1
7.1 Electricity	445.1	441.2	380.4	393.5	382.1	128.6	58.7	51.8	32.6
7.2 Water	348.9	264.4	359.7	277.4	147.7	83.4	39.3	39.8	26.7
8. Building & Construction	5516.8	3939.9	3114.8	2484.4	1471.3	756.8	361.0	348.1	223.3
9. Transport	6996.0	4900.7	3801.3	3440.7	3545.9	1597.7	697.1	615.9	379.9
9.1 Road	6038.6	4092.5	2886.8	2723.9	3002.4	1369.3	604.8	535.5	336.4
9.2 Rail	182.0	175.1	142.2	142.5	89.8	44.6	14.4	9.8	4.5
9.3 Ocean	537.7	390.8	541.8	353.8	258.7	99.1	40.5	39.2	20.9
9.4 Air	237.5	242.1	230.3	220.5	195.1	84.7	37.3	31.4	18.1
10. Communication	480.3	405.1	326.0	335.1	270.4	139.5	61.5	54.5	34.1
10.1 NITEL	111.4	97.9	56.7	81.3	84.3	43.1	19.0	16.8	10.6
10.2 NIPOST	200.2	141.1	114.4	115.6	101.3	53.2	23.5	20.9	13.0
10.3 Radio & Television	168.5	166.0	154.8	138.2	84.8	43.2	19.0	16.8	10.5
11. Wholesale & Retail Trade	15191.3	14190.8	12414.4	11205.5	10014.1	5340.3	2476.9	2364.1	1514.4
12. Hotel & Restaurants	1221.6	1033.2	778.7	641.8	509.2	266.1	117.8	103.3	64.2
13. Finance & Insurance	3988.1	4512.2	3991.4	3115.0	2604.4	1620.0	764.7	819.9	592.1
13.1 Financial Institutions	3555.6	3923.6	3642.4	2850.6	2407.0	1509.0	711.2	767.1	555.7
13.2 Insurance	432.4	588.6	348.9	264.3	197.4	111.0	53.4	52.8	36.5
14. Real Estate & Business Services	333.1	297.5	293.8	278.9	259.1	161.5	62.5	55.2	34.5
14.1 Real Estate	88.7	77.5	69.8	42.8	23.1	10.2	4.5	4.0	2.5
14.2 Professional Services	244.4	220.0	224.0	236.2	236.0	131.3	58.0	51.3	32.0
15. Housing (Dwelling)	3008.1	2721.7	2470.0	2442.6	2122.4	1104.7	487.2	430.3	269.0
16. Community, Social & Personal Services	1348.4	1218.2	1025.0	827.9	679.0	364.5	158.2	142.0	88.0
16.1 Private Non-Profit Institution	7.6	8.0	4.2	9.6	4.8	3.1	1.4	1.2	0.8
16.2 Repairs & Other Services	1340.7	1210.2	1020.7	818.3	674.1	361.4	159.3	140.8	88.0
SUB TOTAL (1 - 16)	108853.0	97181.2	83186.8	76121.7	71804.8	38131.8	16483.9	15788.2	10095.7
17. Producers & Govt. Services	7947.5	7048.4	6594.0	6003.1	5420.8	2897.9	1339.0	1350.3	906.1
17.1 Government	7041.9	6358.7	5919.8	5310.8	4809.3	2391.6	1168.7	1198.6	788.1
17.2 Universities	431.3	358.6	301.6	301.6	301.6	137.6	81.6	82.5	51.6
17.3 Others	474.5	449.1	356.3	341.0	310.8	174.4	81.6	81.6	51.6
GRAND TOTAL	116800.6	101229.6	88448.6	82124.9	77225.6	41029.8	17822.9	17138.5	11001.8

GROSS DOMESTIC PRODUCT AT 1984 CONSTANT FACTOR COST  
(\$ BILLION) 1988 - 1992

Table 1.2 Continued

Activity Sector	Percentage Share in Total					Annual Percentage Change (Growth Rate)								
	1988	1989	1990	1991	1992	1988	1989	1990	1991	1992				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Agriculture (Crops)	5.5	3.53	3.38	2.84	1.55	31.93	31.24	30.1	30.08	29.90	4.99	4.37	4.48	3.52
2. Livestock	1.1	0.68	0.70	0.54	0.28	6.39	6.07	5.80	5.60	5.46	2.01	1.97	1.93	1.90
3. Forestry	0.3	0.15	0.15	0.12	0.06	1.89	1.33	1.30	1.40	1.28	24.49	8.11	2.50	2.44
4. Fishing	0.2	0.21	0.21	0.18	0.10	1.29	1.91	1.90	1.90	1.87	59.00	6.92	4.12	3.95
5. Crude Petroleum	2.1	1.49	1.45	1.26	0.67	12.33	13.22	12.80	12.40	12.90	15.02	5.62	8.62	0.79
6. Mining & Quarrying	0.50	0.03	0.03	0.33	0.01	8.31	0.30	0.30	0.30	0.28	4.17	8.00	3.70	0.00
7. Manufacturing	1.3	0.92	0.91	0.79	0.45	8.65	8.20	8.20	8.30	8.63	1.63	7.60	7.34	7.47
8. Utilities	0.99	0.06	0.06	0.05	0.03	0.54	0.54	0.60	0.50	0.56	7.14	11.11	4.00	5.77
9. Building & Const.	0.35	0.22	0.21	0.18	0.09	2.03	1.97	1.90	1.90	1.90	3.80	5.49	4.05	3.89
10. Transport	0.5	0.37	0.35	0.29	0.16	3.59	3.35	3.10	3.10	3.10	0.36	1.79	3.51	3.39
11. Communication	0.05	0.03	0.03	0.02	0.01	0.32	0.30	0.30	0.30	0.25	0.00	4.00	-7.69	4.17
12. Wholesale and Retail Trade	2.4	1.50	1.43	1.18	0.64	13.80	13.36	12.70	12.60	12.47	3.91	3.05	3.22	3.46
13. Hotel & Restaurant	0.1	0.06	0.06	0.05	0.03	0.60	0.56	0.60	0.50	0.50	0.00	2.13	0.00	2.08
14. Finance & Insurance	0.3	0.70	0.98	0.82	0.45	4.78	6.22	8.70	8.70	8.66	39.52	51.83	4.06	3.90
15. Real Estate	0.05	0.03	0.03	0.02	0.01	0.32	0.30	0.30	0.30	0.27	0.00	4.00	0.00	3.85
16. Housing	0.4	0.27	0.26	0.21	0.12	2.51	2.37	2.2	2.2	2.26	1.54	5.05	3.85	2.78
17. Producers of Govt. Services	1.4	0.90	0.94	0.79	0.47	7.88	7.99	8.40	8.90	9.00	8.81	13.94	4.08	12.01
18. Comm. Soc. & Pers. Services	0.14	0.09	0.08	0.07	0.04	0.82	0.78	0.80	0.70	0.71	1.56	3.08	1.49	2.94
GDP	17.16	11.29	11.23	9.44	5.18	100.00	100.00	100.00	100.00	100.00	7.33	8.27	4.61	4.12
NON-OIL G.D.P.	15.04	9.80	9.78	8.18	4.51	87.67	86.78	87.11	86.68	87.10	6.25	8.67	4.10	4.61

SOURCES: 1. Federal Office of Statistics (FOS), Lagos  
2. National Planning Commission Projections  
3. Central Bank of Nigeria Annual Report 1992.

GROSS DOMESTIC PRODUCT (EXPENDITURE APPROACH) AT 1984 PURCHASER'S PRICE  
(\$ BILLION)

Table 1.3

Component	Percentage Share in Total								Annual percentage change (Growth Rate)					
	1988 (1)	1989 (2)	1990 (3)	1991 (4)	1992 (5)	1988 (6)	1989 (7)	1990 (8)	1991 (9)	1992 (10)	1989 (11)	1990 (12)	1991 (13)	1992 (14)
1. Private Consumption Expenditure	5.84	8.14	7.58	6.25	3.38	76.90	71.88	67.34	65.98	65.24	0.02	0.17	0.22	0.16
2. Government Final Consumption Expenditure	1.45	0.89	0.90	0.78	0.45	8.42	7.83	8.02	8.31	8.64	-0.04	1.35	0.81	0.44
3. Gross Capital Formation	0.69	0.57	0.71	0.59	0.33	4.01	5.06	6.33	6.23	6.32	4.62	4.41	0.26	0.31
4. Export of Goods and Non-Factory Services	2.33	2.14	2.60	2.28	1.27	13.55	18.92	23.07	24.15	24.55	6.71	3.97	0.92	0.32
5. Import of Goods and Non-Factory Services	0.50	0.41	0.53	0.44	0.23	2.88	3.68	4.76	4.67	4.75	4.99	4.96	0.23	0.32
6. Gross Domestic Product (At Market Prices)	17.22	11.32	11.25	9.46	5.19	98.64	100.00	100.00	100.00	100.00	0.97	1.02	0.43	0.22

Sources: 1. Digest of Statistics 1989  
2. Central Bank of Nigeria: Annual Report and Accounts 1992.

Table 1.4:

NAIRA EXCHANGE RATES  
1980 - 1992

<u>YEAR</u>	<u>\$US</u>	<u>£ STERLING</u>
1980	0.5469	1.2647
1981	0.6027	1.2495
1982	0.6731	1.1734
1983	0.7506	1.1216
1984	0.7672	1.0765
1985	0.8924	1.1999
1986	1.7323	2.5554
1987	3.9691	6.5929
1988	4.5367	8.0895
1989	7.3651	12.0695
1990	8.3469	16.2419
1991	16.710	29.216
1992	21.631	34.381

Source: Central Bank of Nigeria; Statistical Bulletin 1991, June. P. 146.

POPULATION

Year	Total Population <hr/> (Million) (FOS Projection) (1991 Census)	Total Labour Force <hr/> (Million)	% of Population <hr/>
1977	-	30.5	-
1978	-	31.0	-
1979	-	31.9	-
1980	84.4	32.2	38.2
1981	86.6	33.2	38.3
1982	88.8	34.9	39.3
1983	91.0	35.5	39.0
1984	93.3	36.1	38.7
1985	95.7	37.2	37.9
1986	98.2	38.4	37.9
1987	101.4	39.3	47.2
1988	112.3	83.2	
1989	116.0	84.9	39.9 <sup>(4)</sup>
1990	119.8	86.7	46.9
1991	123.4	88.5	46.9
1992	127.1	91.3	47.0

- Sources:
1. F.O.S: Economic and Social Statistics Bulletin 1988
  2. F.O.S: Digest of Statistics 1989
  3. Central Bank: Annual Report & Statement of Accounts 1992
  4. New Decade Projections of Labour force data for 1989 - 1992 using average of 47.% of Census Figures.



Table 1.6 GDP EXPENDITURE APPROACH  
PERCENTAGE SHARES

<u>Year</u>	<u>Private Consumption Expenditure P.C.E.</u>	<u>Government Consumption G.C.</u>	<u>Gross Domestic Investment G.D.I.</u>	<u>Export of Goods E.G.</u>	<u>Import of Goods I. G.</u>
1981	79.2	10.0	17.3	12.7	19.1
1982	78.9	9.7	12.8	12.8	14.1
1983	77.3	10.4	9.9	12.1	9.6
1984	79.6	9.7	4.4	13.4	7.1
1985	78.7	9.3	5.4	13.7	7.1
1986	78.4	9.0	6.1	11.4	4.9
1987	52.5	8.8	3.8	38.0	3.0
1988	76.9	8.4	4.0	13.6	2.9
1989	71.9	7.8	5.1	18.9	3.7
1990	67.3	8.0	6.3	23.1	4.8
1991	66.0	8.3	6.2	24.2	4.7
1992	65.2	8.6	6.3	24.6	4.8

Sources: 1. Federal Office of Statistics Ibid  
2. Central Bank of Nigeria Ibid

NIGERIA'S MERCHANDISE TRADE  
(\$ MILLION US)  
1980 - 1992

Table 1.7

Year	Imports (\$ Million)	Exports	Balance
1980	13,576.0	21,192.1	+7,616.6
1981	18,804.6	16,468.4	-2,336.2
1982	15,074.9	13,726.0	-1,349.1
1983	9,784.6	11,569.9	+1,785.3
1984	6,693.3	13,640.0	+6,946.7
1985	8,264.0	17,493.7	+9,229.7
1986	1,692.1	2,795.2	+1,103.1
1987	4,516.0	7,341.2	+2,825.2
1988	4,390.6	6,931.7	+2,541.1
1989	3,693.1	7,870.9	+4,177.8
1990	4,948.0	13,671.1	+8,723.1
1991	7,755.7	12,264.3	+4,508.6
1992	7,203.7	11,886.2	+4,682.5

Source: Central Bank of Nigeria.

Table 1.8

BALANCE OF PAYMENTS  
(\$ MILLION)

1982 - 1987

<u>Category</u>	1982	1983	1984	1985	1986	1987
<b>A</b> Current Account						
Export, Goods and IFS	14323.6	12056.2	14195.5	18389.4	3618.3	7332.7
Oil	13032.7	11111.1	13441.8	17005.5	3224.8	6691.7
Non-oil Merchandise	942.9	634.1	405	753.3	212.8	578.4
Non-factor services	348.0	311.1	348.6	630.6	180.7	219.9
Imports, Goods & NFS	17399.7	11928.5	10179.5	12367.1	2800.5	4516.0
Merchandise	13772.9	9459.1	8028.8	10084.4	2110.4	3816.6
Non-Factor Services	3625.8	2469.4	2150.8	2282.7	690.1	699.3
Resource Balance	-3075.0	127.7	4015.9	6022.3	817.7	2816.7
Net Factor Income	-1192.1	-937.1	-1352.3	-2314.1	-494.1	-1251.1
Receipts	224.8	112.9	60.9	109.8	38.0	42.9
Payments	1416.9	1050.0	1413.2	2423.9	609.2	1294.0
Interest on MLT Loan	693.3	660.0	1080.2	1080.2	377.8	229.8
Others	723.6	390.0	333.0	938.3	151.8	138.7
Net Transfers	-438.5	-433.0	-384.5	-351.5	-92.6	22.4
Current Account Balance	-4705.6	-1242.4	2279.1	3356.7	231.0	1543.2
<b>B</b> Capital Account						
Direct Foreign Investment (Net)	439.39	400.45	218.94	657.72	130.56	64.19
Portfolio Investment	-	-	314.09	1186.36	58.42	1013.53
Net MLT Borrowing	1091.36	1654.70	-502.27	-1902.58	-603.04	387.57
Disbursements	2001.06	3383.79	1876.36	2282.12	331.48	241.02
Amortisation	909.70	1729.09	2378.64	4184.70	934.53	628.59
Other Long-term Net	25.0	26.36	376.36	-600.76	-168.09	-44.40
Net Short-term Capital	310.0	-1670.91	-2108.18	-2025.61	256.22	-2077.48
Capital Account Balance	1865.76	410.61	-1701.06	-2684.85	325.93	-1431.73
Net Change In Reserves	2118.64	456.51	-	528.94	299.19	-35.53
<b>C</b> Net Errors and Omissions	721.21	375.30	-40.45	-142.88	-204.28	-75.92
Level of International Reserves	2118.64	456.51	572.27	916.82	751.87	243.31
SDRs	223.18	0.61	-	60.6	0.92	-
Net Position in IMF	502.12	-	34.70	-	-	-
Foreign Exchange	1393.33	455.91	-	-856.21	-750.94	243.31
Gold	-	-	537.57	-	-	-

Source: Central Bank of Nigeria

Note (1) Exports are valued FOB

(2) Gold is valued at official price.

Table 1.8 contd.

## BALANCE OF PAYMENTS — ANALYTICAL STATEMENT

(\$ million)

Category	1988 (1)	1989 (2)	1990 (3)	1991 (4)	1992 <sup>1</sup> (5)
<b>A CURRENT ACCOUNT</b>	-214.6	1,117.7	5,565.1	1,277.1	2,278.9
Merchandise	2,541.1	4,177.8	8,723.1	4,508.6	4,682.5
Export (F.O.B.)	6,931.7	7,870.9	13,671.1	12,264.3	11,886.2
Oil	(6,319.0)	(7,469.8)	(13,265.6)	(11,792.3)	(11,641.7)
Non-oil	(612.7)	(401.1)	(405.5)	(472.0)	(244.4)
Imports	-4,390.6	-3,693.1	-4,948.0	-7,755.7	-7,203.7
Oil	(-845.1)	(-634.3)	(-755.6)	(-784.3)	(-1,130.8)
Non-oil	(-3,545.5)	(-3,058.8)	(-4,192.4)	(-6,971.4)	(-6,072.9)
Services and Income	-2,841.3	-3,215.0	-3,607.7	-3,967.3	-3,136.6
Investment income (credit)	41.5	152.1	211.3	210.8	157.5
Interest on reserves	(41.5)	(152.1)	(211.3)	(210.8)	(157.5)
Others	(—)	(—)	(—)	(—)	(—)
Investment income (debit)	-2,122.8	-2,544.2	-2,949.9	-2,627.1	-2,530.2
Interest on Loans	(-2,050.4)	(-2,447.0)	(-2,814.5)	(-2,444.0)	(-2,413.0)
Others	(-72.4)	(-97.2)	(-135.4)	(-183.1)	(-117.2)
Non-factor services (Net)	-760.0	-822.5	-869.0	-1,551.1	-763.9
Unrequited transfers (Net)	85.6	154.9	449.7	735.8	733.0
<b>B CAPITAL (EXCLUDING D and E)</b>	-4,099.4	-4,103.3	-6,126.7	-2,773.4	-8,021.2
Direct Investment (Net)	381.8	1,884.2	583.0	697.9	836.1
Portfolio Investment (Net)	580.4	-219.8	-54.1	-60.0	2,130.3
Other capital long-term	-3,602.1	-3,289.3	-3,552.0	-3,096.0	-5,639.7
Official (of which)	-3,576.6	-3,271.6	-3,557.6	-3,096.0	-5,639.7
Amortisation	(-3,874.0)	(-3,441.0)	(-4,021.0)	(-3,332.0)	(-6,065.0)
Disbursement	(297.4)	(169.4)	(463.4)	(236.0)	(425.3)
Other official	(—)	(—)	(—)	(—)	(—)
Private (Net)	-25.5	-17.7	5.6	(—)	(—)
Other Capital short-term (Net)	-1,459.5	-2,478.4	-3,103.5	-315.3	-5,347.9
Total (A and B)	-4,314.0	-2,985.6	561.5	-1,496.3	-5,742.3
<b>C NET ERRORS AND OMISSIONS</b>	-307.1	-136.3	-155.2	-97.8	-119.8
Total (A, B and C)	-4,621.1	-3,121.9	-716.8	-1,594.1	-5,862.0
<b>D EXCEPTIONAL FINANCING</b>	4,111.3	4,306.9	3,018.2	2,195.5	2,088.8
(i) Promissory notes (arrears)	(—)	(—)	(—)	(—)	(—)
(ii) Deferred/Resch. Debt Service	(4,010.9)	(3,852.3)	3,018.2	(2,195.5)	(2,088.8)
(iii) Others	(100.4)	(454.6)	(—)	(—)	(—)
Total (A through D)	-509.8	1,185.0	2,301.4	601.4	-3,773.3
<b>E CHANGE IN RESERVES<sup>2</sup></b>	509.8	-1,185.0	-2,301.4	-601.4	3,773.3

<sup>1</sup> Provisional.<sup>2</sup> Minus (—) sign indicates increase in reserves.

Plus (+) sign indicates decrease in reserves.

Table 1.9  
NIGERIA WORKING POPULATION, 15 YEARS AND OVER 1963 - 1  
AGE CATEGORIES (YEARS)

<u>YEAR</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 34</u>	<u>35 - 44</u>	<u>45 - 54</u>	<u>55 - 64</u>	<u>Total</u>
1980	3,288,499	6,239,784	10,295,861	5,674,237	2,881,825	1,496,211	29,876,417
1981	3,388,970	6,430,424	10,610,423	5,847,598	2,969,871	1,541,924	30,789,210
1982	3,489,441	6,621,063	10,924,985	6,020,958	3,057,917	1,587,637	31,702,001
1983	3,593,777	6,819,035	11,251,646	6,200,987	3,149,350	1,635,107	32,649,902
1984	3,701,976	7,024,340	11,590,405	6,387,683	3,244,169	1,684,336	33,632,909
1985	3,814,040	7,236,976	11,941,263	6,581,048	3,342,375	1,735,324	34,651,026
1986	3,928,037	7,453,279	12,298,170	6,777,746	3,442,274	1,787,190	35,686,696
1987	4,045,897	7,676,914	12,667,176	6,981,111	3,545,559	1,840,814	36,757,471
1988	4,167,622	7,907,881	13,048,280	7,191,145	3,652,230	1,896,197	37,863,355
1989	4,291,278	8,142,575	13,435,433	7,404,512	3,760,595	1,952,459	38,986,792
1990	4,420,732	8,388,147	13,840,734	7,627,881	3,874,039	2,011,358	40,162,891
1991	4,554,049	8,641,111	14,258,134	7,857,917	3,990,870	2,072,015	41,374,096
1992	4,689,299	8,897,741	14,681,583	8,091,288	4,109,394	2,133,551	42,602,856

Source: "Digest of Statistics" FOS Publication December, 1989 modified by New Decade Consultants.

Table 1.10

## SELECTED SOCIAL INDICATORS OF NIGERIA

Parameters	Percentage Change over Preceding Year								
	1988 (1)	1989 (2)	1990 (3)	1991 (4)	1992 (5)	1989 (6)	1990 (7)	1991 (8)	1992 (9)
<b>A. Education</b>									
1. Adult literacy rate	49.8	50.1	52.2	54.0	54.0	0.6	4.2	3.5	0.0
2. No. of Pupils per primary school	-386.2	366.0	384.0	389.0	404.4	-5.2	4.9	1.3	4.0
3. No. of Pupils per teacher (primary) <sup>1</sup>	35.0	37.0	36.0	37.0	39.0	5.7	-2.7	2.8	5.4
4. No. of Pupils per secondary school	491.0	469.0	488.0	538.0	599.2	-4.5	4.1	10.3	11.4
5. No. of Pupils per teacher (secondary) <sup>1</sup>	22.0	20.0	21.0	22.0	25.0	-8.7	5.0	4.8	13.6
6. No. of Students per school in tertiary institutions	N/A	—	2,582.0	2,198.0	N/A	—	2.2	-16.7	—
7. Percentage of Females in Educational Institutions									
(i) Primary	42.4	45.0	43.2	43.8	44.1	6.1	-4.0	1.4	0.7
(ii) Secondary	41.2	42.0	43.0	41.0	45.0	1.9	2.4	-4.7	9.8
(iii) Tertiary	N/A	N/A	N/A	N/A	N/A	—	—	—	—
8. Number of Educational Institutions									
(i) Primary	33,796.0	34,904.0	35,433.0	35,446.0	36,610.0	3.3	1.5	0.0	3.3
(ii) Secondary	5,991.0	5,913.0	6,046.0	5,905.0	6,009.0	-1.3	2.2	-2.3	1.8
(iii) Tertiary	N/A	112.0	114.0	122.0	125.0	—	6.2	7.0	3.0
9. Number of enrolments at schools									
(i) Primary	12,690,798.0	12,721,087.0	13,607,249.0	13,776,854.0	14,805,937.0	0.2	7.0	1.2	7.5
(ii) Secondary	2,941,781.0	2,771,465.0	2,949,225.0	3,124,171.0	3,600,620.0	-5.8	6.4	5.9	15.3
(iii) Tertiary	N/A	289,237.0	307,207.0	268,131.0	N/A	—	6.2	-12.7	104.9
<b>B. Health and Nutrition</b>									
1. Population per Physician (No.)	4,857.4	4,500.0	4,300.0	4,023.0	3,867.0	-7.4	-4.4	-6.4	-3.9
2. Population per Nursing Staff (No.)	701.8	687.0	666.0	645.0	626.7	-2.1	-3.1	-3.2	-2.8
3. Population per Hospital Bed (No.)	800.0	811.0	804.0	734.0	712.6	1.4	-0.9	-8.7	-2.9
4. Life expectancy at birth (years)	51.0	54.0	54.0	54.0	54.0	5.9	0.0	0.0	0.0
5. Children Immunisation									
(i) Fully immunized (overall)	N/A	N/A	80.0	81.1	83.5	—	—	1.4	3.0
(ii) Tuberculosis (%)	N/A	41.0	45.0	57.0	74.1	—	9.8	26.7	30.0
(iii) DPT (%)	N/A	20.0	25.0	57.0	75.0	—	25.0	128.0	3.0
(iv) Poliomyelitis (%)	N/A	21.0	30.0	57.0	79.4	—	42.9	90.0	39.3
(v) Measles (%)	N/A	31.0	45.0	54.0	79.4	—	45.2	20.0	47.0
6. Daily calorie per capita	2,039.0	2,146.0	2,200.0	2,200.0	2,200.0	5.2	2.5	0.0	0.0
<b>C. Population and Demography</b>									
1. Population in Nigeria (census 1991)	83,164,350.0	84,910,801.0	86,693,928.0	88,514,501.0	91,346,965.0 <sup>1</sup>	2.1	2.1	2.1	3.2
2. Female as % of population	—	49.7	49.7	49.7	49.7	—	0.0	0.0	-8.6
3. Male as % of population	—	50.3	50.3	50.3	50.3	—	0.0	0.0	0.0
4. Crude birth rate (per 1000 persons)	47.0	47.0	46.0	46.0	45.0	0.0	-2.1	0.0	0.0
5. Crude death rate (per 1000 persons)	16.0	15.0	15.0	14.0	14.0	-6.3	0.0	-6.7	0.6
6. Maternal mortality (per 1000 live births)	15.0	11.0	11.0	10.0	10.0	-26.7	0.0	-9.1	0.0
7. Infant mortality (per 1000 live births)	85.0	85.0	85.0	85.0	85.0	0.0	0.0	0.0	0.0
8. Total fertility rate	6.3	6.5	6.0	6.0	6.0	3.2	-7.7	0.0	0.0
9. Percentage of women of child bearing age using contraceptives	7.5	7.5	8.0	9.0	16.0	0.0	6.7	12.5	77.8

<sup>1</sup>CBN Estimates.<sup>2</sup>Revised Estimates.

Source: Derived from statistics of Ministries of Education, Health, National Population Commission, and CEN Estimates. FOS and National Commission.

CHAPTER TWOTechnology Flows, Including Investment-related  
Flows and Their Determinants.

2.0 In this Chapter, relevant macro economic data will be examined. We shall examine the modes of technology transfer as indicated in the UNCTAD Secretariat outline:

- (a) Import of capital goods
- (b) Foreign direct investment
- (c) Joint ventures, licensing agreements
- (d) Technical co-operation grants.

2.1.1. Import of Capital Goods

In attempts to determine the pattern and flow of capital goods into Nigeria, we have used the SITC category of Machinery and Transport Equipment. It was also felt that some of the goods in "Miscellaneous manufactured goods" were capital goods. These two categories are presented in Table 2.1 from 1980 to 1988. It was possible to obtain figures on the specific category of "capital goods" from 1986. The information shown under that category was considered more directly relevant for the present study. Columns (2) and (4) in Table 2.1 are therefore alternatives, but column 4 is more accurate.

It can be seen that the import of capital goods into Nigeria has declined in dollar terms from the peak of \$9,246.7 million in 1981 to the lowest level of \$1,264.1 million in 1988, if we interpret capital goods imports as the import of machinery and transport equipment. Using the more accurate category of capital goods import provided in the Central Bank Annual Reports, it can be seen that the value in 1986 was \$1,400.5 million. The peak year for which specific data were available was 1990 with a value of \$2,217.4 million.

2.1.2. On the basis of the responses received from our survey of manufacturing firms in Nigeria, it would seem that the import of capital goods has declined remarkably since 1986. In our Table 2.2

it can be seen that from the year 1985 when \$90.1 million worth of capital goods were imported, importation has been erratic and rather weak in the eight years. In fact 3 of the firms are responsible for over 60% of all machinery imports for the period. More than 40% of responding firms did not import any machinery in the period. We can safely say that capital formation was declining between 1985 and 1992.

## 2.2 Foreign Direct Investment

It was not possible to obtain information for years earlier than 1986. All Tables presented in this section pertain to the years 1986 - 1990. We start by examining cumulative foreign private investment in Nigeria in terms of equity and other liabilities. Table 2.3 gives these cumulative figures. It can be seen that the activities that have attracted the bulk of foreign capital investment have been manufacturing, trading and business services and mining and quarrying in that descending order. The Transportation and Communication sector has attracted the least amount of foreign private capital. Agriculture, Forestry and Fisheries follow that sector in terms of low foreign investment.

When we examine the source of foreign private capital, by far the most important source is the United Kingdom followed by the US and Western Europe in descending order. A clearly observable trend is that there is capital flight from Nigeria as Table 2.4 shows. The net flow went from \$963.24 million in 1986 to a negative figure of \$57.82 million in 1990.

In terms of the components of capital flow it can be observed that the most important are the trade and suppliers credit, followed by Liabilities to Head Office. Table 2.5 gives details of other components.

Foreign private investment seems to have been widely dispersed to a wide range of industries in the manufacturing sector. However, Textiles, Food Products, Other Chemicals have attracted more foreign capital than other sectors. Those three industries account for nearly 37% of all foreign private investment in manufacturing in Nigeria. Table 2.6 gives further details of industry distribution of foreign private investment in manufacturing.



Table 2.7 describes the distribution of foreign private investment among types of assets. The table shows that real estate and "other assets" account for the bulk of investment, Machinery and Equipment trail behind these other types of assets.

### 2.3 Joint Ventures, Licensing Agreements and Other Collaborative Agreements

We do not have macro-economic data in respect of joint ventures, licensing and other collaborative agreements. Much of the information for this part of the report comes from records available to the National Office of Technology Acquisition and Promotion.

Of the 32 firms that had responded, foreign participation varies from less than 10% in two, to 25% in one, 35% in one and 37.3% in another. Fourteen of the firms are 40% foreign-owned, while one has 51% foreign ownership. Five are 60% or more foreign-owned. The rest are fully Nigerian-owned. Foreign participation was in the form of equity. See Table 2.8 for details.

All the firms that had foreign participation also had one form of licensing agreement or another. All had technical management agreements which set out the privileges and obligations of the Nigerian company. There were no technical co-operation grants from any foreign company to its Nigerian partner.

### 2.4 Mechanisms of Technology Transfer

It was suggested that we assess the mechanisms through which the transfers were effected. In particular we were to examine

- \* Linkages between multinational firms and domestic firms for process and product innovation
- \* internationalisation of domestic firms through creation and strengthening of trading networks
- \* provision of real services (organisational, banking, marketing etc)
- \* improvement of skills of manpower through training
- \* improved access to technology/information
- \* promotion of R and D.
- \* Contacts with suppliers of technology.

For the issues raised in this section just like the other issues, macro-economic data were not available. Our questionnaire, given as Annexure I to this report treats the issues under question numbers 7(a) to 7(f). Table 2.9 summarises our findings on the various questions on the issue. The conclusions that can be drawn from returns are as follows:-

- (a) Linkages between multinational firms and their domestic subsidiaries or partners seem to be very weak in Nigeria for the period in review. This finding is not surprising in view of the observed decline in foreign capital inflow.
- (b) Creation and strengthening of trading networks seem to have occurred outside of the firms surveyed or the responding ones. This is also not surprising in view of the poor manufactured goods export performance of the Nigerian economy in the period 1986 - 1992. See Table 2.9.

#### 2.5 Provision of Services by Technology Owners

Here the intention was to find out which particular services were provided by technology owners to recipients in order to facilitate transfer. This item was inadvertently left out of the questionnaire.

#### 2.6 Availability of Operating Information

Item 7(c) in the questionnaire was meant to capture this information. Firms were scored according to the number of items they had out of the seven items. There seems to have been adequate operating information provided by transferors - going by column 2 of Table 2.9.

#### 2.7 R & D Expenditure

Nine of the firms responding carried out some R & D. Unfortunately R & D expenditure was negligible in dollar terms, as shown in the Table 2.9. None of the firms had R & D expenditure for the seven years shown in question 7. When their responses were expressed as a percentage of their turnover, they were shown to be negligible. We are forced to conclude that R & D spending was unimportant to the respondents.

## 2.8 R & D Personnel in the Firms

Usually, the higher the firm scores on this item, the better the capacity of the firm to absorb technology and to innovate on the basis of the transferred know-how. Question 7 (e) dealt with this. Like the response to question 7 (d), the number of people specifically geared to R & D activities in the firms, expressed as a percentage of total employment was insignificant. Most respondents had nil returns on this item.

## 2.9 Intensity of Technology Transfer Interaction

Questions in 7 (f) were meant to measure the intensity of interaction between owners and recipients of technology. Firms were scored on each of the five questions and an overall score expressed in percentage was given at the end. The scores are given in Column (5) of the Table 2.9. The initial ratings indicate very weak interaction. However, this cannot be interpreted as poor technology transfer. It may indicate the absence of serious problems needing a high level of interaction.

Table 2.1

IMPORT OF CAPITAL GOODS  
(\$ MILLION US)

<u>Year</u>	<u>Machinery and Transport Equipment</u>	<u>Miscellaneous Manufactured Goods</u>	<u>Capital Goods</u>
(1)	(2)	(3)	(4)
1980	6,637.1	1,172.9	-
1981	9,246.7	1,579.5	-
1982	6,223.7	958.7	-
1983	3,154.7	422.7	-
1984	2,084.4	222.3	-
1985	2,126.7	197.8	-
1986	1,316.8	142.4	1,400.5
1987	1,511.2	150.2	1,906.3
1988	1,264.1	136.1	1,511.6
1989	1,368.7	138.4	1,871.7
1990	2,138.7	231.5	2,217.4
1991	3,801.7	415.3	2,036.3
1992	3,574.6	273.1	2,100.9

Source: Central Bank: Statistical Bulletin 1991, June  
Annual Report 1992 P. 124.

**Table 2.2** **IMPORT OF MACHINERY AND EQUIPMENT**  
(MILLION \$ US)

Company	1985	1986	1987	1988	1989	1990	1991	1992
1. Raleigh Industries Nig. PLC	4.0	1.0	0.2	-	-	-	-	-
2. Delta Steel Co. Ltd	2.0	0.2	0.5	0.2	0.1	0.1	0.2	-
3. Oshogbo Steel Rolling Co.	-	-	7.0	-	-	-	-	-
4. Nigeria Engineering Works	-	-	-	-	0.1	0.1	0.05	0.01
5. Peugeot Auto. Nig. Ltd	2.0	2.0	1.0	3.0	1.0	2.0	2.0	4.0
6. Berger Paints Nig. Ltd	4.0	-	0.08	0.06	-	0.02	-	0.04
7. Oluwa Glass Co. Ltd	-	-	-	-	-	-	-	-
8. Thermocool Eng. Co. Ltd	3.0	0.4	0.7	0.8	0.6	0.1	0.3	0.08
9. Nig. Wire & Cable Co. Ltd	0.3	0.09	0.1	0.2	0.06	0.3	0.05	0.04
10. International Breweries Ltd	0.9	0.2	0.002	0.07	0.03	0.3	0.1	0.4
11. PZ Industries Ltd	11.0	0.6	2.0	0.2	2	2	3	0.9
12. Guinness Nig. PLC	-	-	-	-	-	-	-	-
13. Delta Glass PLC	47.0	0.4	8.0	0.2	0.4	0.3	1.0	0.8
14. Dani Foods Ltd	-	-	-	-	-	-	-	-
15. Anambra Motor Man Co. Ltd	-	0.4	0.07	0.2	0.3	0.2	0.06	0.3
16. WAMCO Nig. PLC	0.07	0.08	0.7	0.4	0.3	0.1	0.3	0.2
17. Jos Steel Rolling Co.	-	-	-	-	-	-	-	-
18. Jos Int. Breweries PLC	-	-	-	-	-	-	-	-
19. NYCIL Limited	2.0	0.5	0.5	0.02	-	-	0.1	0.09
20. Scanink Nigeria Limited	-	-	-	-	-	-	-	0.1
21. QUA Steel Product	-	-	-	-	-	-	-	-
22. Ideal Flour Mills Ltd	0.2	9.4	0.7	-	-	-	-	-
23. Tower Aluminium	-	0.8	0.3	1.3	0.6	0.1	-	0.3
24. Alcatel Kablemetal Nig. PLC	1.0	0.1	0.3	0.2	0.3	1.0	0.4	0.4
25. Hoechst Nig. PLC	-	0.02	0.1	0.1	0.07	0.1	0.09	0.06
26. Strabag Cons. (Nig) Ltd	-	-	-	-	-	-	-	-
27. West African Glass PLC	-	-	-	-	-	-	-	-
28. Nigerian Breweries PLC	12.6	7.4	5.4	7.1	6.9	8.9	12.1	1.0
TOTAL	<u>90.1</u>	<u>23.6</u>	<u>27.7</u>	<u>14.1</u>	<u>12.8</u>	<u>15.6</u>	<u>19.1</u>	<u>8.7</u>

SOURCE: National Office of Technology Acquisition & Promotion

Table 2.2.1

IMPORT OF INTERMEDIATE GOODS FOR FURTHER PROCESSING  
(MILLION US \$)

COMPANY	1985	1986	1987	1988	1989	1990	1991	1992
1. Raleigh Ind. Nig. PLC	2.0	0.6	4	4	2	-	-	-
2. Delta Steel Co. Ltd	-	-	-	-	-	-	-	-
3. Oshogbo Steel Rolling Co.	20	5	-	1	-	-	-	-
4. Nigeria Works Eng. Ltd	-	-	-	-	-	-	-	-
5. Peugeot Auto. Nig. Ltd	-	-	-	-	-	-	-	-
6. Berger Paints Nig. Ltd	-	-	-	-	-	-	-	-
7. Oluwa Glass Co.	-	-	-	-	-	-	-	-
8. Thermocool Eng. Co. PLC	11	4	11	9	10	10	10	12
9. Nig. Wire & Cable Co. Ltd	3	2	2	4	2	2	3	2
10. Int. Breweries Ltd	-	-	-	-	-	-	-	-
11. PZ Ind. Limited	74	14	34	35	37	72	26	58
12. Guinness Nig. PLC	72	19	21	23	18	25	36	25
13. Delta Glass PLC	-	-	-	-	-	-	-	-
14. Dani Foods Ltd	-	-	-	-	-	-	-	-
15. WAMCO Nig. PLC	11	3	15	25	15	19	17	18
16. Anambra Motor Man Co. Ltd	88	5	12	27	10	14	18	18
17. Jos Steel Rolling Co. Ltd	-	Information not yet available					-	-
18. Jos Inter. Breweries PLC	-	-	-	-	-	-	-	-
19. Scanik Nig. Ltd	0.8	0.1	0.6	0.8	0.6	0.7	0.7	0.5
20. NYCIL Limited	N/A	-	-	-	-	-	-	-
21. QUA Steel Product Ltd	-	-	-	-	-	-	-	-
22. Tower Aluminium (Nig) PLC	-	-	-	-	-	-	-	-
23. Nigerian Breweries PLC	8.0	5.0	4.0	5.0	7.0	8.0	3.0	3.0
24. Nigerian Hoechst PLC	-	-	-	-	-	-	-	-
25. STrabag Cons. (Nig) Ltd	-	-	-	-	-	-	-	-
26. Alcatel Kablemetal (Nig) PLC	15.0	9.0	4.0	8.0	6.0	10.0	6.0	6.0
27. Ideal Flour Mills Ltd	-	-	-	-	-	-	-	-
28. West African Glass Ind. PLC	-	-	-	-	-	-	-	-
29. BCN PLC, lagos	-	-	0.79	-	-	-	-	-
30. Van Leer Containers (Nig) PLC	-	-	-	-	-	6.11	3.35	4.53
31. Roche (Nig) Ltd	0.31	2.63	0.77	0.63	2.11	1.98	1.04	2.25
32. Bendel Feed & Flour Mills Ltd	-	5.77	0.25	0.44	0.68	0.96	0.90	2.77
Total	<u>305.11</u>	<u>75.10</u>	<u>109.41</u>	<u>142.87</u>	<u>110.39</u>	<u>169.75</u>	<u>124.99</u>	<u>152.05</u>

Source: National Office of Technology Acquisition & Promotion Survey, 1993

Table 2.3: CUMMULATIVE FOREIGN PRIVATE INVESTMENT IN NIGERIA  
BY TYPE OF ACTIVITY 1986 - 1990 (\$ MILLION)

	Year	Paid-up Capital Plus Reserves (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Percentage Distribution of Total (4)
Mining and Quarring	1986	158.84	808.17	967.40	27.00
	1987	96.20	430.03	526.24	22.60
	1988	91.98	664.24	756.22	30.00
	1989	62.50	24.01	86.51	5.80
	1990	64.36	71.58	135.94	10.50
Manufacturing and Processing	1986	840.42	342.50	1082.93	30.20
	1987	506.38	220.58	726.96	31.20
	1988	576.89	231.33	808.22	32.10
	1989	480.63	253.94	734.57	49.60
	1990	614.87	174.55	789.41	60.70
Agriculture, Forestry and Fisheries	1986	44.20	5.20	49.40	1.4
	1987	26.85	0.47	27.31	1.2
	1988	26.47	2.18	28.64	1.1
	1989	16.51	1.81	18.32	1.2
	1990	41.10	0.59	41.68	3.2
Transport and Communication	1986	11.79	19.19	30.98	0.9
	1987	7.75	9.85	17.60	0.8
	1988	23.22	12.47	35.69	1.4
	1989	14.27	7.23	21.49	1.5
	1990	22.78	7.17	29.95	2.3
Building and Construction	1986	61.77	131.52	193.29	5.4
	1987	37.95	69.76	107.71	4.6
	1988	38.44	71.04	109.49	4.3
	1989	26.96	38.51	65.46	4.4
	1990	37.29	55.32	92.60	7.1
Trading and Business Services	1986	487.09	573.80	1060.89	29.6
	1987	368.06	422.75	790.80	34.0
	1988	383.11	313.27	696.38	27.6
	1989	313.67	161.49	475.16	32.1
	1990	308.69	-95.69	213.00	16.4
Miscellaneous	1986	125.89	78.27	204.16	5.7
	1987	77.02	53.15	130.17	5.6
	1988	81.04	4.13	85.18	3.4
	1989	65.73	13.71	79.44	5.4
	1990	64.52	-67.47	-2.95	-0.2
Total	1986	1630.40	1958.65	3589.06	100.0
	1987	1120.21	1206.59	2326.80	100.0
	1988	1221.16	1298.67	2519.82	100.0
	1989	980.26	500.69	1480.95	100.0
	1990	1153.60	146.04	1299.64	100.0

Source: Central Bank of Nigeria.

Table 2.4

<u>FLOW OF FOREIGN PRIVATE CAPITAL/BY REGION OR COUNTRY OF ORIGIN</u>				
<u>(1986 - 1990)</u>				
				<u>(\$ MILLION)</u>
Country/Region of origin	Year	Inflow (1)	Outflow (2)	Netflow (3)
United Kingdom	1986	681.89	111.68	570.21
	1987	536.60	435.51	101.09
	1988	283.71	457.75	-174.04
	1989	268.96	61.14	207.82
	1990	137.30	65.88	71.42
United States	1986	523.78	326.74	197.03
	1987	410.43	453.04	42.61
	1988	727.24	385.84	341.4
	1989	223.69	507.93	-284.24
	1990	747.58	801.57	-53.99
Western Europe (excluding U.K.)	1986	221.46	133.68	87.78
	1987	180.88	128.61	52.27
	1988	332.73	230.64	102.09
	1989	91.22	101.03	-9.81
	1990	350.78	466.71	-115.93
Other (unspecified)	1986	123.55	15.34	108.21
	1987	62.03	14.46	47.57
	1988	42.24	12.67	29.57
	1989	53.71	27.19	26.53
	1990	65.73	25.06	40.67
Total	1986	1550.67	587.44	963.24
	1987	1189.94	1031.62	158.32
	1988	1385.93	1086.91	299.02
	1989	637.59	697.30	-59.71
	1990	1301.39	1359.21	-57.82

Source: Central Bank of Nigeria, Economic and Financial Review:  
Vol. 30 No. 3 1992.



Table 2.5:

COMPONENTS OF NET CAPITAL FLOW BY  
COUNTRY/REGION OF ORIGIN (1986 - 1990)  
(\$ MILLION)

Components	Year	United Kingdom	United States	Western Europe Excluding UK	Other (unspecified)	Total
Unremitted	1986	44.89	18.07	35.03	23.93	121.93
	1987	56.20	19.16	13.90	10.27	99.53
	1988	18.96	33.6	18.82	16.82	88.20
	1989	85.52	34.20	20.15	22.43	162.30
	1990	97.31	69.40	12.23	11.82	190.76
Change in foreign share capital	1986	10.25	2.16	13.45	6.44	32.29
	1987	21.82	4.03	4.33	5.42	35.60
	1988	14.49	33.98	13.38	1.93	63.78
	1989	31.26	7.79	13.23	19.05	71.33
	1990	8.34	16.14	31.11	8.78	64.37
Trade & Suppliers Credit	1986	-55.34	195.88	76.76	34.22	251.52
	1987	127.73	58.58	74.51	-0.14	260.68
	1988	-137.09	168.49	142.79	2.62	176.80
	1989	23.52	30.82	39.73	-4.17	89.89
	1990	-17.40	639.40	131.99	2.22	756.21
Other Foreign Liabilities	1986	209.79	-14.64	-51.37	41.62	185.43
	1987	-149.15	-148.10	-48.51	33.04	312.32
	1988	13.38	143.96	-84.73	6.38	78.98
	1989	14.76	-357.20	-47.09	-12.01	401.55
	1990	7.06	-0.41	-41.89	3.42	-31.82
Liabilities to Head Office	1986	360.62	-8.29	13.91	1.97	368.21
	1987	44.493	23.72	7.64	-1.02	75.53
	1988	-83.78	-38.62	11.84	1.82	-108.73
	1989	52.77	0.16	-35.83	1.22	18.33
	1990	-23.90	-778.52	-249.36	14.43	1037.35
Total	1986	570.21	193.18	87.78	108.21	959.38
	1987	101.09	-42.61	52.71	47.57	158.32
	1988	-174.04	341.40	102.09	29.58	299.02
	1989	207.83	-284.24	-9.81	26.52	-59.70
	1990	71.42	-53.99	115.93	40.67	-57.82

Source: Central Bank of Nigeria: Economic and Financial Review: Vol. 30, No. 3 Sept. 1992.

FOREIGN PRIVATE INVESTMENT (CUMULATIVE) IN MANUFACTURING AND PROCESSING SECTOR ANALYSED  
BY TYPE OF INDUSTRIES (1986 - 1990) (\$ THOUSAND)

Table 2.6

TYPE OF INDUSTRY	1986				1987				1988				1989				1990				FIXED ASSETS AT BOOK VALUE				
	Paid-Up Capital Plus Reserve (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Total (1)+(2) (3)	Paid-Up Capital Plus Reserve (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Total (1)+(2) (3)	Paid-Up Capital Plus Reserve (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Total (1)+(2) (3)	Paid-Up Capital Plus Reserve (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Total (1)+(2) (3)	Paid-Up Capital Plus Reserve (1)	Other Liabi- lities (2)	Total (1)+(2) (3)	Total (1)+(2) (3)	1986	1987	1988	1989	1990
ISIC 311, 312 - Food Products	51305	25358	76663	55553	35898	91451	5569	31130	86781	35874	23605	61478	114781	30545	145326	30809	40759	31518	46786	81980	30809	40759	31518	46786	81980
ISIC 313 - Beverages	49525	9989	59514	49724	9825	59549	45416	8772	54188	82571	3034	85604	76396	4588	80986	12829	13310	23836	12257	52457	12829	13310	23836	12257	52457
" 314 - Tobacco Products	21495	16773	38268	24813	16102	40915	24899	40534	14951	10126	10126	25077	16475	11967	28442	4376	11395	10304	15262	15058	4376	11395	10304	15262	15058
" 321 - Textiles	107760	14044	121804	118044	14806	132830	116301	10179	126480	86676	7685	94361	95946	16077	112023	3825	54110	73967	46507	85379	3825	54110	73967	46507	85379
" 322 - Wearing Apparel	2934	8050	10984	2820	7739	10560	25002	6861	9361	5258	1971	7229	4989	3082	11907	6645	6626	5628	5887	23693	6645	6626	5628	5887	23693
" 323 - Leather & Fur Products	2502	2588	5090	2405	2542	4947	2347	2253	4601	1541	1383	2923	1623	1507	116	2296	2273	1933	2794	4074	2296	2273	1933	2794	4074
" 324 - Foot Wear	776	1217	1994	1764	1189	2953	1825	1054	2878	1184	726	1910	1539	446	1985	381	1281	632	562	4636	381	1281	632	562	4636
" 331 - Wood & Wood Products	3807	397	4205	4064	382	4446	3966	806	4772	2566	543	3109	2358	571	2929	615	628	1025	1162	165	615	628	1025	1162	165
" 332 - Furniture & Fixtures	11045	2426	13471	10619	2332	12951	9464	2087	11531	5803	69898	75701	8057	64648	72704	4599	5955	5162	4046	5227	4599	5955	5162	4046	5227
" 341 - Paper & Product Products	3570	5789	9359	4275	5602	9872	4242	4753	8995	2871	4036	6907	3676	3708	7384	2362	2832	3228	3322	1695	2362	2832	3228	3322	1695
" 342 - Printing & Publishing	12276	2413	14689	18566	3513	22079	57687	3114	60803	35393	816	36209	32652	-2750	29902	1058	7017	8506	1746	-2898	1058	7017	8506	1746	-2898
" 351 - Industrial Chemicals	2754	4412	7166	4285	4444	8727	3798	36213	40011	17290	22298	39588	30425	14902	45327	1602	2003	5230	8234	-13382	1602	2003	5230	8234	-13382
" 352 - Other Chemicals	50866	17164	68030	53036	26787	79823	53646	18510	72156	39877	17778	37055	43663	16337	6000	34236	35882	31554	50459	68647	34236	35882	31554	50459	68647
" 353 - Petroleum Refineries	-747	628	-1375	-694	609	1302	-615	-540	1155	-377	-331	-708	-347	-304	-651	-79	-35	-30	48	62	-79	-35	-30	48	62
" 354 - Miscellaneous Petroleum and Coal Products	1371	-688	683	1687	-1323	364	-1173	371	1344	947	-719	227	890	-681	219	1618	1395	1763	4457	4724	1618	1395	1763	4457	4724
" 355 - Rubber Products	11643	13938	25581	18097	31266	49363	21301	25159	46660	13186	23344	36330	12139	21446	33563	8555	7999	9779	13175	23628	8555	7999	9779	13175	23628
" 356 - Plastic Products	997	2200	3197	1432	3903	5336	1845	3760	5605	11079	10033	21111	21248	11488	32736	1339	1060	6265	4388	33426	1339	1060	6265	4388	33426
" 361 - Pottery, China and Parthenware	615	925	1540	730	888	1618	1683	818	2301	1042	963	2005	1158	1474	3632	396	331	907	569	-413	396	331	907	569	-413
" 362 - Glass & Glass Products	1817	484	2301	2480	-872	1608	2085	-1301	784	1223	-384	838	1470	-310	1161	4612	11272	9584	8934	1213	4612	11272	9584	8934	1213
" 369 - Other Non-Metal Mineral Products	36577	20797	57374	39935	16755	56689	41480	13225	54705	30088	15071	45159	28932	13959	42891	26951	27935	24184	24272	23699	26951	27935	24184	24272	23699
" 371 - Iron & Steel	15774	692	22756	15867	6653	22520	14605	5693	2030	8968	3486	12454	14214	96	14310	18157	20787	17375	24786	30072	18157	20787	17375	24786	30072
" 372 - Non-Ferrous Metals	1709	-396	1313	1877	-463	1413	1880	-358	1521	3503	-2684	819	3258	-2466	792	1845	2286	2828	1426	884	1845	2286	2828	1426	884
" 381 - Metal Products (Fabricated)	19203	22112	41315	21529	17590	39119	21678	14495	36173	13825	9313	23138	13792	-20867	7075	28638	34673	40221	30855	32228	28638	34673	40221	30855	32228
" 382 - Non-Electrical Machinery	2818	4132	6949	2345	4656	7002	2034	4128	6162	1437	2521	3958	3475	2316	5790	6998	7503	8112	9089	8323	6998	7503	8112	9089	8323
" 383 - Electrical Equipment	8085	7346	15432	8460	6873	15333	8757	8229	16986	7930	9405	17335	5582	6403	11985	11743	22104	19079	15923	21424	11743	22104	19079	15923	21424
" 384 - Transport Equipment	27625	27276	54901	27802	6707	34509	38393	3900	32293	24089	9537	33626	32566	-15725	15598	41883	22156	31874	38749	39415	41883	22156	31874	38749	39415
" 385 - Professional & Scientific Equipment	0	0	0	70	-386	-315	63	-1551	-279	39	244	282	182	988	1169	46	18	15	54	319	46	18	15	54	319
" 390 - Other Manufacturing Industries	49378	15016	64394	49748	20484	70232	44125	19268	63393	29746	11814	41560	43980	16985	60965	7631	11593	9841	11685	58452	7631	11593	9841	11685	58452
TOTAL	497430	230118	727553	541330	243284	784614	572803	236306	809108	478581	256904	735486	615122	191290	803418	1677640	352772	184426	401111	618413	1677640	352772	184426	401111	618413

Source: Central Bank of Nigeria ibid

Table 2.7

FLOW OF INVESTMENT IN FIXED ASSETS AT COSTS ANALYSED BY TYPE OF ECONOMIC ACTIVITY  
IN 1990 (\$ Thousand) U.S.

	REAL ESTATE R/E			MACHINERY & EQUIPMENT M/E			FURNITURE & FIXTURES F/F			MOTOR VEHICLES M/V			OTHER ASSETS			TOTAL		
	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)	Addition to Stock (1)	Minus from Stock (2)	Net (1)-(2) (3)
Mining & Quarrying	22597	257	22340	154426	574	153852	1105	0	1105	1440	09	1431	161322	45	161277	347006	889	346117
Manufacturing & Processing	180673	7309	173364	258093	12965	245128	21626	19750	1876	38399	2379	36019	10000	8312	1688	508791	50716	458075
Agriculture, Forestry & Fisheries	818	0	818	421	0	421	43	0.4	42.6	281	0	281	2473	834	1599	2916	834	2082
Transport & Communication	125	0	125	1378	0	1378	20438	7	204317	33862	100	33762	18	2762	2744	55822	2869	52953
Building & Construction	3663	3615	48	31352	575	30777	2239	43	2196	35022	84	34938	878	0	878	73154	4317	68837
Trading & Business Services	20666	1381	19285	144488	475	144013	7528	40	7488	7004	114	6891	1391	372	1019	181078	2382	178696
Miscellaneous	9878	20694	-10816	5414	7553	-2138	5771	2667	3104	4129	1914	2215	47566	5759	41806	72758	38587	34172
Total	238420	33256	205164	58582	22142	57341	58750	22407.4	222374	170137	4600	115517	223648	18004	211011	1761575	100544	1160917

Source: Central Bank of Nigeria *ibid*

Table 2.8

JOINT VENTURE COMPANIES IN THE FOOD AND BEVERAGES

<u>Company</u>	<u>Percentage Local Share</u>	<u>Percentage Foreign Share</u>
1. International Breweries Ltd	90.33	9.67
2. Guinness Nigeria PLC	60.0	40.0
3. Jos International Breweries PLC	75.0	25.0
4. Nigerian Breweries PLC	65.0	35.0
5. Dani Foods Limited	35.0	65.0
6. West Africa Milk Co. (Nig) PLC	60.0	40.0
7. Ideal Flour Mills Ltd	60.0	40.0
8. Bendel Feed & Flour Mills Ltd	60.0	40.0

JOINT VENTURES IN MANUFACTURING SECTOR

<u>Company</u>	<u>Percentage local Share</u>	<u>Percentage Foreign Share</u>
1. Raleigh Industries Nig. PLC	60	40
2. NYCIL Limited	40	60
3. Anambra Motor Man. Co. Ltd	60	40
4. Paterson Zochonis Ind. PLC	60	40
5. Nigerian Wire & Cable Co. Ltd	59.5	40.5
6. Thermocool Engineering Co. PLC	40	60
7. Oluwa Glass Co. PLC	90.8	9.2
8. Berger Paints Nigeria PLC	62.69	37.31
9. Peugeot Auto. Nig. Limited	60	40
10. Nigerian Engineering Works Ltd	60	40
11. Nigerian Hoechst PLC	60	40
12. Alcatel Kabelmetal Nig. PLC	40	60
13. Tower Aluminium Nig. PLC	40	60
14. Van Leer Containers (Nig) PLC	49.0	51
15. Roche (Nig) Limited	60.0	40
16. BCN PLC Lagos	60.0	40

JOINT VENTURES IN THE COUNTRY INDUSTRY

<u>Company</u>	<u>Percentage Local Share</u>	<u>Percentage Foreign Share</u>
1. Strabag Const. (Nig) Ltd	60	40

NON-JOINT VENTURE COMPANIES

- Oshogbo Steel Rolling Company
- Scannik Nigeria Limited
- Qua Steel Product
- Delta Glass PLC
- Jos Steel Rolling Mill

Source: NIOP Survey 1993

Table 2.9

## MECHANISMS OF TECHNOLOGY TRANSFER

	R & D Personnel		Availability of Operations Information	R & D Expenditure (\$ Million)		Technology Interaction Weeks/Year
	(1)	(2)		(3)	(4)	
		%		1985	1992	
1. Raleigh Ind. Nig. PLC, Kano	6	100	-	-	55 days	
2. Delta Steel Co. Ltd, Aladja	14	100	362.81	49628.6	3 Years	
3. Oshogbo Steel Rolling Co.	-	71	3592.3	39388.02	8 Years	
4. New Engr. Works Ltd, P/Harcourt	6	100	-	102994.0	3 Years	
5. Peugeot Auto. Nig. Ltd., Kaduna	-	86	-	-	-	
6. Berger Paints	29	86	420.2	203.8	-	
7. Oluwa Glass Co. PLC, Okitipupa	-	-	-	-	10 Years	
8. Thermocool Eng. Co. PLC, Ikeja	6	100	128865.98	89101.8	40 Weeks	
9. Nigeria Wire & Cable Co. Ibadan	-	43	-	-	15 Years	
10. Inter. Breweries Ltd, Ilesha	8	-	230.3	93.6	-	
11. PZ Ind. PLC., Lagos	3	100	128.1	152.4	5 Weeks	
12. Guinness Nig. PLC, Ikeja	8	100	-	-	-	
13. Delta Glass Co. PLC, Ughelli	9	100	-	-	-	
14. Dani Foods Ltd, Sango	2	86	-	-	-	
15. West Africa Milk Co. PLC, Ikeja	2	100	-	-	-	
16. Anambra Motor Manf. Co. Ltd, Enugu	9	100	-	-	-	
17. Jos Steel Rolling Ltd	9	100	-	-	-	
18. Jos Int. Breweries Ltd, Jos	-	-	-	-	-	
19. Scanink Nig. Ltd, Ibadan	-	100	-	-	7 Years	
20. Nycil Ltd, Sango Ota	9	100	94.4	42.3	5 1/2 Years	
21. QUA Steel Products Ltd, Eket	-	100	-	-	4 Years	
22. Ideal Flour Mill Ltd, Kaduna	5	71	-	3736.5	6 Years	
23. West African Glass Ind. PLC, P/H	-	86	-	-	-	
24. Tower Aluminium (Nig) PLC	8	100	-	-	2 Years	
25. Nigerian Breweries PLC	24	100	209.5	57.5	3 Years	
26. Alcatel Kablemetal Nig. PLC	45	86	-	6.0	20 Years	
27. Strabag Cons. (Nig) Ltd	-	-	-	-	2 Years	
28. Nigerian Hoechst	-	71	-	13.9	-	
29. BCN PLC, Lagos	-	-	-	-	1 Year	
30. Van Leer Containers (Nig) PLC	13	100	N/A	N/A	3 Years	
31. Roche (Nig) Ltd	-	100	N/A	N/A	8 Years	
32. Bendel Feed & Flour Mills Ltd	9	100	-	0.02	7 Years & Various Period	

Source: National Office of Technical Acquisition &amp; Promotion Survey 1993

Table 2.10

COMPANY	TECHNOLOGY PAYMENTS (\$'000)							
	1985	1986	1987	1988	1989	1990	1991	1992
1. Raleigh Ind. Nig. PLC, Kano	-	-	-	-	-	-	-	-
2. Delta Steel Co. Ltd, Aladja	-	-	-	-	-	-	-	-
3. Oshogbo Steel Rolling Co. Ltd	-	-	-	-	-	-	-	-
4. Nig. Engr. Works Ltd, P/Harcourt	-	-	-	-	0.02	0.27	0.43	0.34
5. Peugeot Auto. Nig. Ltd, Kaduna	-	-	-	-	-	-	-	-
6. Berger Paints Nig. PLC	-	-	-	-	-	-	-	-
7. Oluwa Glass Co. PLC., Okitipupa	-	-	-	-	-	-	-	-
8. Thermocool Eng. Co. PLC, Ikeja	172.5	100.4	102.5	71.3	184.3	218	263.1	216.8
9. Nig. Wire & Cable Co. Ltd, Ibadan	-	-	-	-	-	-	-	-
10. Int. Breweries Ltd, Ilesha	-	-	-	-	-	-	-	-
11. PZ Industries Ltd, LAGOS	355	185.7	332	268.3	1003.4	1383.0	1364	989.1
12. Guinness Nig. PLC, Ikeja	-	-	-	-	-	-	-	-
13. Delta Glass Co. PLC., Ughelli	-	-	-	-	-	-	-	-
14. Dani Foods Ltd, Sango-Ota	-	-	-	-	-	-	-	-
15. West Africa Milk Co. Nig. PLC., Ikeja	1.3	44.0	75.4	80.0	5.1	37.8	149.4	170
16. Anambra Motor Man. Co. Enugu	-	-	-	-	-	-	-	-
17. Jos Steel Rolling Co.	-	-	-	-	-	-	-	-
18. Jos International Breweries	-	-	-	-	-	-	-	-
19. Scanink Nig. Limited, Ibadan	-	-	-	-	-	-	-	-
20. Nycil Ltd., Sango Ota	47.5	7.8	12.2	11.1	94.0	184.7	178.9	163.5
21. Qua Steel Products Ltd, Eket	-	-	-	-	-	-	-	-
22. Tower Aluminium Nig. PLC	-	-	-	-	-	-	-	-
23. Nig. Hoechst Nig. PLC	-	-	-	-	-	-	-	-
24. Ideal Flour Mills PLC	-	27.7	19.6	20.8	330.8	401.2	-	-
25. Nigeria Breweries PLC	973.8	1047.7	1749.7	5007.8	7074.4	8905.5	14802.3	25075.3
26. West africa Glass Ind. Nig. PLC	-	-	-	-	-	-	-	-
27. Alcatel Kablemetal Nig. PLC	-	-	-	-	-	-	-	-
28. Strabag Cons. Nig. Ltd	-	-	-	-	-	-	-	-
29. BCN PLC	-	-	-	-	-	-	-	-
30. Van Leer Containers Nig. PLC	0.85	0.163	0.27	0.27	-	-	-	-
31. Roche Nig. Ltd	-	-	-	-	-	-	-	-
32. Bendel Feed & Flour Mills Ltd	-	-	-	-	-	-	-	-
TOTALS	<u>1550.95</u>	<u>1413.46</u>	<u>2291.67</u>	<u>459.57</u>	<u>9235.12</u>	<u>11849.27</u>	<u>17057.33</u>	<u>27123.57</u>

Source: National Office of Technology acquisition &amp; Promotion Survey 1993

CHAPTER THREEFactors Influencing Technology Flows  
Including Investment-Related Flows

3.0 This Chapter is presented in five sections or sub-headings in accordance with the UNCTAD outline, as follows:

- (a) Policies of Home Governments
- (b) Firms strategies
- (c) Economic and Regulatory Framework of Host countries
- (d) Human Resource and Technological Base
- (e) General Infrastructure.

It is necessary to state from the onset that the issues raised within these sub-headings are so broad that indepth treatment of each is not possible within the limits set for the length of country reports. Only aspects considered most relevant to investment and technology flows are summarised.

3.1 Policies of Home Governments

From the discussion of investment flows and the various tables showing the sources of foreign private investment in Nigeria, the most important trading partners of Nigeria are the United Kingdom, the United States of America, other countries in the EEC, and Japan in that order. In terms of investment flows the bulk of direct private foreign investment has come from the United Kingdom. The U.K. has been responsible for over 55% of the cumulative foreign private investment in Nigeria. The next most important single country is the United States of America. As a group, other West European countries are responsible for over 20% of cumulative foreign private investment. In discussing the policies of home governments therefore emphasis is placed on these three sources.

3.1.1 In order to capture the issues under this sub-heading a questionnaire was sent to various foreign embassies in Nigeria. (See Annexure Two for the Questionnaire). The responses cannot be generalised as each trade and foreign government policy of each country was treated on a case by case bases.

- 3.1.2 Bilateral trade and technology agreements exist between Nigeria and the United Kingdom, the United States, Japan, France, Germany, China and Bulgaria, according to available information. The provisions and protocols are broadly similar. A typical one is attached as Annexure Three to this report.
- 3.1.3 Outside the bilateral agreements there are other special incentives given by these foreign trading partners to encourage firms in their countries to either invest or transfer technology. This may be found in their respective foreign trade and industrial policies document.
- 3.1.4 Nigeria is a beneficiary of foreign technical assistance in terms of training grants, scholarships, and special assistance from countries of the British Commonwealth, U.S.A., Canada, Germany, the former Soviet Union, (U.S.S.R.), Italy, France among many. Many Nigerians, over the years have been beneficiaries of technical training fellowships and scholarships from Non-Governmental Aid Agencies such as Ford Foundation, Rockefeller Foundation, Carnegie Foundation, etc. All these have important impacts on technology capacity building. Hard statistics on these are also not available to us yet.

## 3.2 Firms Strategies

Ideally, this sub-heading should treat both owners and recipients of technology. Surveys did not cover foreign owners of technology. Questionnaires were sent to Nigerian based companies and so the discussion here is based on responses to questions 6 and 7 of Annexure One.

The responses are summarised in Tables 3.1 and 3.2. Size of firm varies from a turnover of less than \$1.0m to over \$2.0m. The firms also vary in their degree of employment from less than 100 to over 4000 and lastly in diversification both in product line and product range. There are mono product firms and others with over 15 products. All respondents produce and market branded products. Many of the brands marketed are international names. When we classify the firms according to technology intensity - know-how intensity of product and process - we see a broad range of intensities. The bulk of the technologies surveyed are quite simple, although a few outliers exist which can be classified as high technology business.



### 3.3 Economic and Regulatory Framework of Host Countries

The Structural Adjustment Programme (SAP), started in October 1986, has been the most crucial factor influencing both technology and investment flows in Nigeria. A meaningful discussion of the economic and regulatory framework of Nigeria must start with SAP provisions. All other economic policies take their bearing from these provisions.

3.3.1 The Structural Adjustment Programme in Nigeria has included the following broad policies:

- (i) Naira exchange rate realignment - which in Nigeria has meant a continuous depreciation of the Naira against other currencies.
- (ii) deregulation of agricultural product and input pricing;
- (iii) deregulation of the financial system including interest rates;
- (iv) commercialisation and privatisation of government-owned enterprises;
- (v) trade liberalisation and the removal of quantitative restrictions on imports - discontinuation of the import licensing system, and price controls;
- (vi) rationalisation of the tariff regime;
- (vii) removal of subsidies on petroleum products.

Although the objective of SAP included the reduction in government expenditure and deficits, the phenomenal expansion of these deficits in the last three years indicate that this objective has not been achieved. A related objective of restructuring the productive base of the economy towards directly productive activities, and the diversification of that base away from crude petroleum also seems to have been unmet. One of the aims of exchange rate depreciation was to encourage non-oil exports and the inflow of foreign capital into Nigeria. From the data presented in Chapter One it seems obvious that both objectives have not been attained in Nigeria. The effect of the precipitate slide in the value of the Naira against foreign currencies has been capital flight, (there has been a net outflow of capital from Nigeria

in the last 2 years). See Table 3.3. The instability in the foreign exchange market has promoted speculative and rent-collecting investment behaviour, and neutralised the best provisions of the industrial incentives intended to encourage productive investment.

3.3.2 The country's industrial policies are comprehensive: They have the following main provisions:-

1. Pioneer Status

As part of incentive, Pioneer Status is granted to some pioneer industries to provide them tax holiday. These are industries that government considers to be beneficial to the Nigerian economy and whose assistance would be in the public interest. The tax relief is to enable the companies achieve a reasonable level of profitability which should be ploughed back. The tax relief is for a non-renewable period of five (5) years for pioneer industries and seven (7) years for such industries located in economically disadvantaged Local Government Areas. About 44 industries/products were approved in 1988 by the Federal Executive Council as pioneer industries/product. Other incentives include:-

2. Incentive for in-plant Training

These are the training needs undertaken by an industrial establishment that has set up special training facilities. The industry enjoys a 2% tax concession for five (5) years.

3. Investment in Infrastructure

It is a form of incentive granted to industries which provide facilities which usually should have been provided by government. These include access roads, pipe borne water and electricity. Twenty percent (20%) of the cost of production of this infrastructure are tax deductible.

4. Investment in Economically Disadvantaged Areas

A pioneer industry sited in economically disadvantaged Local Government Area is entitled to 100% tax holiday for seven years and an additional 5% capital depreciation allowance over and above the initial capital depreciation allowance.

5. Claims for Local Value Aded

This is defined as the value of products less the off-shore cost. A tax concession on the cost of the product minus the off-short cost should not exceed 10% for five years.

6. Labour Intensive mode of production

A tax credit of 15% is granted to industries with high labour capital ratio. These are industries with plant, equipment and machinery which essentially are operated with minimal automation.

7. Minimum Local raw material utilization

The tax credit of 20% is granted to industries that attain the minimum level of local raw material sourcing and utilization.

8. Research and Development

Up to 120% of expenses on R & D are tax deductible provided that such R & D activities are carried out in Nigeria and are connected with the business from which income or profit is derived. For the purpose of R & D on local raw materials, 140% of expenses are allowed.

9. Companies Income Act

This Act has been amended in order to encourage potential and existing investors and entrepreneurs.

Some of the encouraging highlights are:

- (i) Corporate Tax rate is 35% from 1991
- (ii) New provisions to encourage firms to give prompt returns and thereby obtain prompts relief.

10. Capital Allowance

Different rates are applicable in respect of capital allowances for various sub-sector of the economy. For each sub-sector, the initial allowance vary from the Annual Allowance.

11. Tax Free Dividends

An individual or a company deriving dividends from any company as from 1987 shall enjoy tax free dividends for a period of three years provided.

- (a) The Company paying the dividends is incorporated in Nigeria.

- (b) The equity participation is imported into the country between 1st January, 1987 and 31st December, 1992 and
- (c) The recipients equity in the company constitutes, at least 10% of the Share Capital of the company.

For a Company engaged in Agricultural production, petro-chemical or liquified Natural Gas, the tax free period shall be for five years.

12. Group of Companies Taxation

Companies can now pay interim company dividends without any double taxation since the amendment on franked investment income came into effect on 1st January, 1985.

13. Effective Protection

Tariff level provides a simple and straight forward measure of protection against unfair competition by imports but may not provide the total effect anticipated Government therefore has put in place other measures to ensure that locally produced goods penetrate the export markets. Some of these measures are as highlighted in paragraph 15 below.

14. Dumped and subsidized Goods

The Custom Duties (Dumped and subsidized Goods) Act 1958 permits when necessary, the imposition of a special duty on any goods which are dumped in Nigeria or subsidized by any Government or authority outside Nigeria. The Provisions of this Act is subject to review.

15. Export Promotion

A variety of measures ranging from export insurance to outright grant were introduced to encourage export oriented industries. These have been articulated in Decree No. 18 of 11th July, 1986 and they include:

- (a) Import Duty Drawback
- (b) Export Licence Waiver
- (c) Export Credit Guarantee and Insurance Scheme
- (d) Export Development Fund
- (e) Export Expansion Fund
- (f) Export Adjustment Scheme Fund
- (g) Re-discounting of Short Term Bills for Export
- (h) Capital Allowance
- (i) Tax Relief on interest income

16. Foreign Currency Facility

A new trade and exchange rate regime has been adopted by Government to ensure efficient and competitive local production. These include

- (i) Foreign exchange
- (ii) Repatriation of Imported capital
- (iii) Foreign Currency Domiciliary Account
- (iv) Payment of Technology fees as highlighted in NOTAP's Revised Guidelines on acquisition which run thus:
  - payments in respect of know-how, patents and the likes would attract a fee ranging from 1-5% of net sales.
  - Fees in respect of Technical Assistance/Services would attract a fee ranging from 1-5% of net sales.
  - A Management Fee ranging between 2-5% of profit before tax should apply to management services. However management services of project where profit in not anticipated during the early years will attract a fee ranging from 1-2% of net sales during the first three to five years only.
  - Lump sum payments are allowed for Consultancy Services in line with the International Technology Market prices based on man/day or month rates taking account of services to be performed. However such payments shall not exceed 5% of total project cost.
  - Payments for services in the Agricultural and Agro-Allied projects would be based on Lump-sum at the initial years (gestation period) where no sales or profit are anticipated. However, after the gestation period, payments shall be based on net sales like other sectors.

17. Development Banking

Soft loans and advances are provided to large, medium, small scale and cottage type industries on concessionary terms through the Industrial Development Banks set up at both Federal and State levels. This is in recognition of the fact that some sections of industry cannot face the full rigour of open market competition and will therefore need some degree of protection through soft loans (subsidies) in order to grow and survive.

18. Tariff Protection and Import Prohibition  
(Consolidated) Decree No. 1 of 1988

In order to protect the infant industries and foster the evolution of an efficient industrial sector in Nigeria, the Federal Government has adopted import prohibition and tariff protection measures embodied in the Customs & Excise (consolidated) Decree No. 1 of 1988.

19. Import Prohibition: Customs & Excise Tariff etc  
(Consolidated) Decree No. 1 of 1988

By this decree the Government prohibited the importation of some goods as a means of stimulating domestic production, conservation of foreign exchange and reinforcement of local value added through increased use in Nigeria of domestic industrial raw materials.

It can be seen therefore that the policies match those of other countries which have shown impressive rates of growth of the manufacturing sector. It would appear that the difference is the negative impact of SAP on the Nigerian economy. It would seem therefore necessary to re-examine the SAP policies in the light of the dismal performance of the economy.

3.4 Human Resource and Technological Base

Nigeria, with its population of over 90 million has a large base for skilled labour. The work force is well over 42 million. Table 1.10 gives certain basic statistics as to the potential share of the population from whom basic skills can be developed. Nigeria has 28 Universities, 32 Polytechnics, 6009 Secondary and over 36,600 primary institutions. In 1990, enrolment in educational institutions

were 13.6 million primary pupils; 3.0 million secondary students and 307,000 students in tertiary institutions.

3.4.1 The Industrial Training Fund is the institution charged with overseeing and funding on-the-job training throughout the formal sector of the economy. Most establishments in the formal sector provide on-the-job training for their personnel both within and outside the country.

3.4.2 The Federal Government funds about 24 Research Institutes all over the country. These research institutions have been responsible for very many scientific invention most of which have not been commercialised. The linkage between these research institutions and the small and medium scale enterprises that could utilize their research findings, has been very weak. See Table 3.4 for a list of the research institutions and Table 3.5 for some of their most important findings which have not been commercialised. The Raw Materials Research and Development Council currently runs different programmes designed to secure greater coupling of research findings with respect to raw materials research in the country. There are also efforts by the National Office for Technological Acquisition and Promotion to commercialise these research findings.

3.4.3 Technological infrastructure is still in its infancy in Nigeria. There are no facilities for the development and fabrication of prototypes in Nigeria. However a number of institutions are at different stages of development which will have a significant impact on the technological development of the country. Amongst the various technology institutions is the National Office of Technology Acquisition and Promotion which was designed to facilitate the acquisition of foreign technology with a view to promoting rapid industrialisation and economic development.

In the area of engineering infrastructural development the National Agency for Science and Engineering Infrastructure (NASENI) is the leading established institution in the country.

It was also aimed at protecting the interest of Nigerian entrepreneurs in matters related to technology agreements with foreign owners. Since inception in 1979, to date it had appraised over 2000 technology transfer agreements and approved 1030. It has also provided advice and training in technology matters. In 1992 NOTAP considered 136 new agreements and approved 109 of them.

3.4.4 A number of Federal Government promoted industrial projects are also at an advanced stage of development. When they are completed, they will have far-reaching implications for the technological development of Nigeria. The projects include:-

- (i) The Liquified Natural Gas (LNG) Project Bonny
- (ii) Oso Condensate Project, Akwa Ibom
- (iii) The Ajaokuta Steel Complex
- (iv) The National Ore Mining Project
- (v) The Aluminium Complex.

In addition there are expansion works to existing public sector industrial projects which will have far-reaching industrial implications for the country.

### 3.5 General Infrastructure

The single most important achievement of the military regime is the development of physical infrastructure in Nigeria in the period under review. In particular transportation, telecommunications, energy and export processing zones will be highlighted through basic statistics. Communications statistics are provided in Table 3.6. As at the end of 1992 there were 353,027 telephones and 7,329 telex sets in Nigeria. Post Offices stood at 626 and postal agencies were 2,787 units, while there were 166 mobile and sub-post offices. Road development, and railway rehabilitation has proceeded in the reporting period. Table 3.7 gives data on electricity generation in the country. A total of 14,676.9 million kwh of electricity was generated in 1992.

The first Export Processing Zone (EPZ) has just been commissioned in Calabar and plans are afoot to start two others very soon.



Table 3.1

## BASIC STATISTICS ON FIRMS

Firms	Turnover (\$ Million)		Number Employed	INNOVATION	
	1985	1990		New Products Since 1989 No.	New Processes Since 1989 No.
1. PZ Ind. PLC, Ikeja	0.36	166.41	557	10	20
2. Scanink Nig. Ltd, Ibadan	2.46	1.80	09	-	-
3. Raleigh Ind. (Nig) PLC, Kano	26.06	4.20	185	3	2
4. Nycil Ltd, Sango-Ota	8.74	8.9	27	19	19
5. Anambra Motor Manf. Co. Enugu	126.5	17.56	522	5	3
6. Nig. Wire & Cable Co. Limited, Ibadan	12.14	3.62	215	2	1
7. Thermocool Eng. Co. PLC, Ikeja	49.30	16.05	356	4	2
8. Oluwa Glass Co. Okitipupa	-	-	136	1	Not specified
9. Berger Paints Nig. PLC, Ikeja	35.86	12.46	305	12	-
10. Nig. Engineering Works Limited Port-Harcourt	-	13.23	478	4	20
11. International Breweries Ltd, Ilesha	12.83	6.68	155	10	6
12. Guinness Nig. PLC, Ikeja	289.35	132.39	1765	2	-
13. Jos International Breweries PLC	-	-	140	-	-
14. Peugeot Auto. Nig. Ltd, Kaduna	47.0	36.8	-	2	-
15. Dani Foods Ltd	-	-	101	-	2
16. West Africa Milk Company PLC Ikeja	39.22	30.19	76	5	3
17. Ideal Flour Mills Kaduna	39.22	7.07	44	-	-
18. Delta Steel Co. Ltd, Warri	98.78	60.19	4055	-	-
19. Oshogbo Steel Roll. Co. Ltd	18.31	10.95	286	-	-
20. Delta Glass Co. PLC	15.01	11.08	1034	2	1
21. QUA Steel Product Ltd., Eket	10.08	1.36	20	-	-
22. West African Glass Ind. PLC	15.71	2.09	155	-	-
23. Jos Steel Rolling Co. Ltd	28.06	13.41	569	2	2
24. Nigerian Breweries PLC	200.58	141.37	1143	4	Not specified
25. Alcatel Kablemetal Nig. PLC	23.53	14.86	218	10	-
26. Tower Aluminium (Nig) PLC	24.65	23.72	500	Not specified	-
27. Hoechst PLC	36.98	22.40	131	20	Not specified
28. Strabag Cons. (Nig) PLC	-	-	2662	-	-
29. BCN PLC Lagos	3.21	1.99	204	-	-
30. Van Leer Containers (Nig) PLC	-	9.32	171	3	3
31. Roche (Nig) Ltd	4.4	5.87	60	-	-
32. Bendel Feed & Flour Mills Ltd	-	40.01	-	1	4

Source: National Office of Technology Acquisition &amp; Promotion Survey 1993

DIVERSIFICATION OF THE COMPANY'S PRODUCT AND EMPLOYMENT OF HUMAN RESOURCES

Table 3.2

Company	Diversification Of Products		Employment of Skilled Manpower			
	No. of Products	No. of Main Products	Engineers	Tech/Scientist	Others	
1. Raleigh Indust. Nig. PLC - Kano	2	2	2	10	179	
2. Delta Steel Coy Ltd Aladja	6	2	216	956	4055	
3. Oshogbo Steel Rolling Coy. Ltd Oshogbo	3	3	23	-	240	
4. Nig. Engineering Works Ltd, Port-Harcourt	15	9	27	204	247	
5. Peugeot Auto. Nig. Ltd Kaduna	9	9	N/A	N/A	N/A	
6. Berger Paints Nig. Ltd PLC, Ikeja	-	-	21	14	270	46
7. Oluwa Glass Company PLC Okitipupa	1	1	25	6	105	
8. Thermocool Engineering Co. PLC, Ikeja	7	4	32	70	254	
9. Nigerian Wire & Cable Coy. Ibadan	50	3	9	129	73	
10. International Breweries Ltd - Ilesha	3	3	-	19	136	
11. Peterson Zochonis Ind. PLC	120	25	46	126	385	

Table 3.2 Continued

DIVERSIFICATION OF THE COMPANY'S PRODUCT AND  
AND EMPLOYMENT OF HUMAN RESOURCES

Company	Diversification of Products		Employment of Skilled Manpower			
	No. of Products	No. of Main Products	Engineers	Tech/Scientists	Others	
12. Guinness Nig. PLC Ikeja	3	3	-	-	-	-
13. Delta Glass Coy. PLC Ughelli	96	7	14	220	800	800
14. Dani Foods Ltd Sango	2	2	1	8	92	92
15. West Africa Milk Coy. Nig. PLC - Ikeja	7	3	8	12	N/A	N/A
16. Anambra Motor Manu. Coy. Ltd - Enugu	42	5	17	206	522	522
17. Jos Steel Rolling Coy. Ltd	2	21	11	104	4	4
18. Jos International	3	3	14	126	N/A	N/A
19. Scanink Nig. Ltd	1	1	2	7	N/A	N/A
20. Nycil Limited	120	55	7	19	N/A	N/A
21. Qua Steel Products Ltd	1	1	5	15	N/A	N/A
22. Ideal Flour Mills Ltd	4	1	6	31	7	7
23. West African Glass Ind. PLC	8	3	3	60	92	92
24. Nigerian Breweries PLC	4	4	82	759	302	302
25. Alcatel Kabelmetal (Nig) PLC	1200	4	16	125	77	77
26. Tower Aluminium Nig. PLC	3	3	15	85	400	400
27. Nigerian Hoechst PLC	26	7	131	-	-	-
28. Strabag Cons. (Nig) Ltd	-	-	21	71	2570	2570
29. BCN PLC Ibadan	16	16	8	9	187	187
30. Van Leer Containers (Nig) PLC	3	2	8	40	123	123
31. Roche (Nig) Ltd	25	6	2	42	16	16
32. Bendel Feed & Flour Mills Ltd	15	3	14	37	Not specified	Not specified

**Table 3.3** COMPONENTS OF NET CAPITAL\*/FLOW  
BY COUNTRY/REGION OF ORIGIN (1986 - 1990)  
(\$ Million)

Components	Year	United Kingdom	United States	Western Europe (Excluding U.K.)	Other (Unspecified)	Total
Unremitted Profit	1986	30.2	12.1	23.5	16.1	81.9
	1987	60.1	20.5	14.9	11.0	106.5
	1988	18.8	33.4	18.7	16.7	87.6
	1989	85.2	34.1	20.1	22.3	61.7
	1990	97.1	69.3	12.2	11.8	190.4
Changes in Foreign Share Capital	1986	6.9	1.5	9.0	4.3	21.7
	1987	23.3	4.3	4.6	5.8	38.1
	1988	14.4	33.7	13.3	1.9	63.3
	1989	31.1	7.8	13.2	19.0	71.1
	1990	8.2	16.1	31.0	8.8	64.1
Trade and Suppliers Credit	1986	-37.2	131.6	51.6	23.0	169.0
	1987	136.5	62.6	79.6	-0.15	278.6
	1988	-136.1	167.3	141.8	2.6	175.6
	1989	23.4	30.7	39.6	-4.2	89.5
	1990	-17.4	638.1	131.7	2.2	754.7
Other Foreign Liabilities	1986	140.9	-9.8	-34.5	28.0	124.6
	1987	-159.3	-158.3	-51.4	35.3	-333.8
	1988	13.3	142.9	-84.1	6.3	78.4
	1989	14.7	-355.7	-46.9	-12.0	-399.9
	1990	7.0	-0.4	-41.8	3.4	-31.8
Liabilities to	1986	242.3	-5.6	9.3	1.3	247.3
	1987	47.6	25.4	8.2	-1.1	80.1
	1988	-83.2	-38.3	11.8	1.8	-10.9
	1989	52.5	0.2	-35.7	1.2	18.2
	1990	-71.3	-53.8	-248.9	14.4	-359.6
TOTAL	1986	383.0	130.0	59.0	72.7	644.5
	1987	108.1	-45.5	55.9	50.8	169.2
	1988	-194.9	382.3	114.3	33.1	334.9
	1989	206.9	-283.0	-9.8	26.4	-59.4
	1990	71.3	-53.9	-115.7	40.6	-57.7

\*/Excluding Unremitted profit of oil prospecting Companies.

Source: CBN Economic and Financial Review Vol. 30, 1992

LIST OF RESEARCH INSTITUTES IN NIGERIA

1. Agricultural Extension Research Liaison Services ABU
2. Cocoa Research Institute of Nigeria (CRIN) Ibadan
3. Federal Institute of Industrial Research Oshodi (FIIRO)
4. Forestry Research Institute of Nigeria (FRIN) Ibadan
5. Institute for Agricultural Research (IAR) Zaria
6. Institute of Agricultural Research & Training (IAR&T) Ife
7. Kainji Lake Research (KLRI)
8. Lake Chad Research Institute
9. Leather Research Institute of Nigeria Zaria
10. National Animal Production Research Institute Shika
11. National Cereals Research Institute Badeggi Bida
12. National Horticultural Research Institute Benin
13. National Root Crops Research Institute Umudike
14. National Veterinary Research Institute Vom
15. Nigerian Institute for Oceanography Marine Research Lagos
16. Nigerian Institute for Oil Palm Research Benin
17. Nigerian Institute for Trypanosomiasis Research Kaduna
18. Nigerian Stored Products Research Institute
19. Products Development Agency (PRODA) Enugu
20. Rubber Research Institute of Nigeria Benin
21. International Institute for Tropical Agriculture (IITA) Ibadan
22. Water Resources Research Institute Kaduna
23. Nigerian Institute of Social and Economic Research (NISER) Ibadan
24. National Institute for Pharmaceutical Research and Development (NIPRD) Abuja.
25. National Centre for Agric Mechanisation Ilorin
26. National Raw Material Research and Development Council

Table 3.5

Precommercial inventions developed in three Nigerian research institutes, 1971-86.

Institute	Product inventions	Process inventions
FIRO	1. Cassava flour	1. Cassava peeling and grating
	2. Cassava starch	2. Detoxified cassava
	3. Gums, glues, adhesives from cassava starch	3. Garri-making machinery
	4. Garri and garri flour	4. Gluco-amylase enzyme
	5. Fufu	5. Sorghum malt
	6. Maize flour	6. Bottled palm wine process
	7. Soy-ogi baby food	7. Refined kaolin and gypsum
	8. Composite flour	8. Ginger powder, oleoresin and concentrate
	9. Sorghum flour	9. Dyeing jig
	10. Femos beer	10. Fish kiln for fish smoke-curing.
	11. Potable alcohol	
	12. Bottled palm wine	
	13. Pitto (local beer)	
	14. Table vinegar	
	15. Tomato puree, ketchup and powder	
	16. Peanut butter	
	17. Salad cream and mayonnaise	
	18. Full-fat soy grits and oil	
	19. Nico skin cream	
	20. Laundry soap and bath soap	
	21. Smoked fish	
LERIN		1. Tannins from <u>Acacia nilotica</u> (Bagaruwa) pods
		2. Tanning extracts from <u>Anageissus schimperii</u> (Matte) leaves
		3. Tannins from <u>Parkia Clappertoniana</u> husks
		4. Local lime upgrading for modern tanning
		5. Local fatliquors for leather <u>continued</u>
		6. Unhairing and bating agents from <u>Adenopus breviflorus</u> (Tagiri)
PRODA		A. Cassava-related
	1. Laboratory equipment, wood work products, glass products, thermometers	1. Cassava peeling machine
	2. Steam cooker	2. Cassava grating machine
	3. Air blower	3. Pulp dewatering screw press
	4. Traffic lights	4. Depulping machine
	5. Multi-purpose grinder	5. Garri frying machine
	6. Foundry products, (bearing bars, bearing housing, water valves, pulleys, metal ingots)	6. Garri screening machine (rotary or shaker)
	7. Refractory bricks	7. Garri cyclone unit
8. Industrial adhesive	B. Farming-related	
	1. Seed planter	
	2. Maize sheller	
	3. Palm oil mill (with bunch strippers, palm fruit cockers, digester)	
	4. Kero-oil press	
	5. Sheff dryer	
	6. Solat dryer	
	7. Solar hothouse	
	C. Miscellaneous inventions	
	1. Industrial blender	
	2. Low-cost oven	
	3. Bread oven	
	4. Ceramic pottery equipment (blunger, vibrating sieve, spray booth, potter's wheel)	
	5. Alcohol distilling plant	
	6. Distilled water plant	
	7. Industrial washing machine	
	8. Sorghum malt	

Table 3.6 COMMUNICATION STATISTICS

Services	Percentage Change over Preceding Year								
	1988 (1)	1989 (2)	1990 (3)	1991 (4)	1992 <sup>1</sup> (5)	1989 (6)	1990 (7)	1991 (8)	1992 (9)
<b>1. Telegraph</b>									
No. of Messages									
(a) International	15,094	765,663	387,333	10,905	7,444	4,972.6	-49.4	-97.2	-31.7
(b) Domestic	377,115	280,526	239,992	47,670	53,543	-25.6	-14.4	-80.1	12.3
No. of Words									
(a) International	558,785	355,376	432,085	468,369	338,292	-36.4	21.6	8.4	-27.8
(b) Domestic	4,537,519	591,264,834	540,926,916	1,569,386	1,537,952	12,930.6	-8.5	-99.7	-2.0
<b>2. Telephone</b>									
(a) International									
(i) No. of paid minutes	14,076,987	19,936,060	38,202,737	15,506,521	52,615,660	41.6	91.6	-59.4	239.3
(ii) No. of calls in units	1,865,681	3,014,493	4,349,386	2,799,129	8,453,206	61.6	44.3	-35.6	202.0
(b) Domestic									
(i) Trunk subscriber-dial-calls in units	942,744,362	1,595,291,638	1,285,370,381	1,013,567,562	1,588,591,502	69.2	-19.4	-21.1	56.7
(ii) Trunk operator-assisted-calls in units	12,238,005	2,718,174	1,671,435	2,424,720	2,040,926	-77.8	-38.5	45.1	-15.8
<b>3. Telex</b>									
(a) International									
(i) No. of calls in units	360,057	1,015,974	1,079,125	152,957	1,114,894 <sup>2</sup>	182.2	6.2	-85.8	628.9
(ii) No. of words in paid minutes	1,487,176	4,430,505	1,333,054	702,800	4,002,894 <sup>2</sup>	197.9	-69.9	-47.3	469.6
(b) Domestic									
(i) No. of calls in units	45,494,352	4,929,515	38,874,871	31,833,039	26,647,569	-89.2	688.6	-18.1	-16.3
<b>4. Postal Facilities</b>									
Postal Agencies	2,736	2,744	2,757	2,774	2,787	0.3	0.5	0.6	0.5
Sub-Post Offices	156	169	179	166	166	8.3	5.9	-7.3	0.0
Post Offices	552	555	572	606	626	0.5	3.1	5.9	3.3
Mobile Post Offices	34	34	34	1	1	0.0	0.0	-97.1	0.0
Total	3,478	3,502	3,542	3,547	3,580	0.7	1.1	0.1	0.9
<b>5. Telecommunication Facilities</b>									
Telephone sets ('000)	317,916	483,496	492,204	497,975	353,027	52.1	1.8	1.2	-29.1
Telex Sets	5,898	8,560	7,402	9,282	7,329	45.1	-13.5	25.4	-21.0
Private Wires									
Telephone	N/A	148	N/A	N/A	N/A	-	-	-	-
Telegraph	N/A	-	N/A	N/A	N/A	-	-	-	-
Music	N/A	-	N/A	N/A	N/A	-	-	-	-
Leased Circuits	52	98	63	N/A	N/A	88.5	-35.7	-	-

N/A = Not available.

<sup>1</sup> Provisional.<sup>2</sup> Extrapolated Figures.Sources: (1) Nigerian Telecommunications (NITEL), Ikoyi, Lagos.  
(2) Nigerian Postal Service (NIPOST), Moloney, Lagos.

Table 3.7

**ELECTRICITY GENERATION**  
(Million kWh)

Type	1988 (1)	1989 (2)	1990 (3)	1991 (4)	1992 <sup>1</sup> (5)	Percentage Change over Preceding Year			
						1989 (6)	1990 (7)	1991 (8)	1992 (9)
<b>NEP:</b>									
Hydro .....	3,159.3	3,755.1	5,129.4	6,418.4	5,796.1	18.9	36.6	25.0	-10.0
Thermal .....	8,078.6	8,672.3	8,176.4	7,253.0	8,762.8	7.3	-5.7	-11.0	21.0
<b>Purchased:</b>									
Thermal .....	85.2	385.0	157.2	260.7	118.0	351.9	-59.2	66.0	-55.0
<b>TOTAL</b> .....	<b>11,323.1</b>	<b>12,812.4</b>	<b>13,463.0</b>	<b>13,932.1</b>	<b>14,676.9</b>	<b>13.2</b>	<b>5.1</b>	<b>3.4</b>	<b>5.3</b>

<sup>1</sup>Estimates.

Source: National Electric Power Plc (NEP).

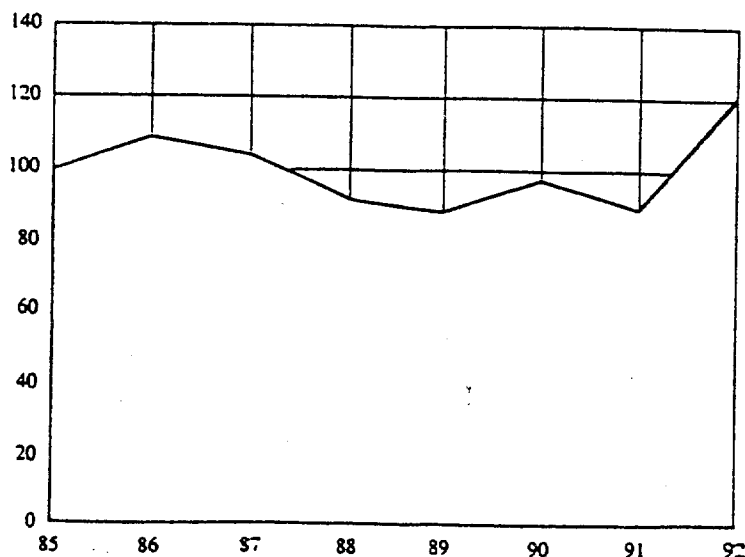
**ENERGY CONSUMPTION 1988-1992**  
(Tonnes of coal equivalent (TCE) )  
(1985 = 100)

Type	Weight (1)	1988 (2)	1989 (3)	1990 (4)	1991 <sup>1</sup> (5)	1992 <sup>2</sup> (6)	Percentage Change over Preceding Year			
							1989 (7)	1990 (8)	1991 (9)	1992 (10)
1. Coal .....	0.13	6,549.8	63,471.0	55,642.5	106,173.8	45,623.7	-3.1	-12.3	90.8	-57.0
% Share .....		0.3	0.2	0.2	0.4	0.1				
2. Hydro-Power .....	0.93	5,827,550.0	6,406,590.0	6,646,900.0	7,083,300.0	7,338,415.5	9.9	3.8	6.6	3.6
% Share .....		23.5	23.7	23.3	25.0	22.0				
3. Natural Gas .....	0.04	6,251,299.0	8,485,000.0	8,511,579.0	8,927,053.0	9,447,737.0	35.7	0.3	4.9	5.8
% Share .....		25.2	31.3	29.8	31.6	28.3				
4. Petroleum Products .....	98.90	12,683,215.6	12,121,175.8	13,350,820.5	12,164,536.3	16,537,738.6	4.4	10.1	-8.9	36.0
% Share .....		51.0	44.8	46.9	43.0	49.6				
<b>TOTAL</b> .....	<b>100.00</b>	<b>24,827,554.4</b>	<b>27,076,204.8</b>	<b>28,474,942.0</b>	<b>28,281,063.1</b>	<b>33,369,514.8</b>	<b>9.1</b>	<b>5.2</b>	<b>-0.7</b>	<b>18.0</b>
<b>% Share</b> .....		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				
<b>Index of Energy Consumption (1985 = 100)</b> .....		<b>92.0</b>	<b>88.1</b>	<b>96.9</b>	<b>88.7</b>	<b>119.9</b>	<b>4.2</b>	<b>10.0</b>	<b>-8.5</b>	<b>35.2</b>

<sup>1</sup> Revised<sup>2</sup> Provisional

Sources: Federal Ministry of Mines, Power &amp; Steel, Nigerian National Petroleum Corporation and National Electric Power Plc (NEP).

**INDEX OF ENERGY CONSUMPTION**  
(1985 = 100)





CHAPTER FOURThe Impacts of New and  
Emerging Technologies and Policy Responses

Even though the application of new emerging technology in Nigeria is negligible because of the protected nature of this technology and the high price involved, it has been established that such technologies lead to high product quality, low prices, economy of scale etc in such firm's where they are employed or utilized in the country. The global trends indicate that the new and emerging technologies include:-

- (i) Intelligent computers
- (ii) Robotics
- (iii) Aerospace
- (iv) Satellite Communications/Information Technology
- (v) Super microprocessors
- (vi) Lasers
- (vii) Medical diagnostics
- (viii) Biotechnology.

In order to assess the impacts of these technologies on competitiveness and technology transfer; and to measure the firm level and government response to them, firms were required to identify the particular emerging technology that affected them. The following questions were put to them:

1. How have these technologies affected your company's?
  - (a) Price of product
  - (b) product quality
  - (c) product innovation
  - (d) market share.
  
2. To what extent have the technologies
  - (a) improved your access to technology in the field
  - (b) affected the price paid for technology
  - (c) facilitated or hindered the transfer of technology from your company to other firms
  - (d) facilitated your receipt of technologies from other firms.

3. What has been the performance of the firm in the past 5 years in terms of
- (a) productivity gain %
  - (b) quality improvement %
  - (c) cost reduction
  - (d) profit after tax
  - (e) capacity utilization %
  - (f) labour costs  $\pm$ .

The firms were requested to show how they responded in terms of product or process change, increase in R & D expenditure or by hiring personnel from their competitors.

The responses were poor enough to indicate that the full impacts were not appreciated. It is obvious from the growth of computerisation, office automation, (especially fax) and cellular telephones in Nigeria that these new and emerging technologies have had important impacts on the way firms do business. Consequently it is suggested that this aspect of the study be examined in greater detail through indepth case studies of two large, two medium and two small scale firms.

The responses of the government to these new and emerging technologies were not studied. No questionnaires were targeted at the Federal Ministry of Industry and Technology or the State counterparts. This aspect of the study needs to be pursued in order to improve the current study.

Until that is done the tentative assessment that can be made now is the responses indicate ignorance of the true impact of these technologies on the firms. Since government response was not studied specifically, no valid statement can be made on it now. It is also necessary to get some guidelines from UNCTAD Secretariat regarding:

- \* identification of the particular new and emerging technologies that should be assessed.
- \* guidelines for the investigation to ensure uniformity and comparability.

CHAPTER FIVEContribution of Technology and Investment  
Flows to Competitiveness and Technology Capability - Building5.0 Introduction

This final part of the report is an overall assessment of the contribution of technology and investment flows to Nigeria's technology capability building and its international competitiveness. To ensure that this assessment is objective, data on what has happened to technology and investment flows in the period - 1980 - 1992 are considered. The same is applicable to data on export performance of Nigeria and the trends in Local Value additions. The two parameters: technological capability, and international competitiveness, are considered in the light of indicators from the UNCTAD Secretariat.

5.1 Although we have indicated that the Nigerian economy was in decline in the period it is necessary to show the facts through an examination of trends in industrial production, industrial employment, Gross Domestic Investment, export (especially non-oil) and the flow of foreign investment both bilateral and multilateral.

5.2 For a picture of total investment flows we must take the flow of foreign private investment (Table 2.4) and the flow of investment in the public sector (Table 5.1) are considered together. The figures in Table 5.1 are cumulative amounts outstanding for the respective years. For Export of manufactures (SITC 5, 6, 7 and 8), are shown in Table 5.2. While Export performance as a whole is presented in Table 5.3. For a measure of productivity Tables 5.4 and 5.5 show the index of industrial production and manufacturing production respectively. The Growth rates in the manufacturing sector are given in Table 5.6.

5.3 A sample of ten firms in three sub-sectors of manufacturing were examined over the period 1985 to 1992. The three sub-sectors were Chemicals, Engineering and Agro-Allied. Trends in Value-added in these firms are summarized in Table 5.8a, 5.8b and 5.8c respectively.

#### 5.4 Assessment of Technology Flow

5.4.0 When technology flow is considered in terms of import of machinery and equipment or capital goods imports, plus foreign direct investment (in primary, secondary and manufacturing sectors), number of technology agreements, the following deductions are made:-

5.4.1 Import of capital goods have declined Table 2.19 with the decline in the economy's overall capacity to import. The firm level survey, (Table 2.2 supports this conclusion).

5.4.2 Foreign direct investment - i.e. wholly owned ventures by foreign entities were not separately identified in our analysis. Rather, foreign direct investment were combined with joint ventures. This approach is supported by the findings in the firm level survey (Table 2.8) which showed that 18 of the 32 respondent firms were joint ventures while the remaining were wholly-owned by Nigerians.

5.4.3 Royalties and licence fees have also been declining along with the decline in the flow of technology. At the firm level survey, only six of the 32 firms indicated any payments of royalties and licence fees, even though all of them have technology agreements with foreign partners. At the macro level, the remittances for technical, management and other fees have been rising in Naira terms, but in terms of dollars the external payments have been declining as shown in Table 5.7. The effect of Naira depreciation seems rather obvious by comparing the Naira trend with the dollar equivalents.

5.4.4 The technical agreements submitted to the National Office of Technology Acquisition and Promotion have been analysed in Table 5.9 below. The analysis shows that over 2000 agreements were appraised between 1979 and 1991. Over 38% of the agreements were in the Chemical and Mineral sector. 27% were in the Engineering sector while the Agro-allied sector had 24% of the agreements. The remaining 11% were in the services sector.

## 5.5 Assessment of Export Performance

5.5.0 The base for any export performance is industrial production. The index of industrial production indicates an average growth rate of 8.0% per annum. An examination of the individual industries indicated that the fastest growing industries were synthetic fabrics, and soft drinks. See Tables 5.4, 5.5 and 5.6. Export of manufactured goods were erratic up till 1986. Thereafter it had grown from \$34.8 million in 1986 to \$87.1 million in 1989. Export of machinery and equipment has been insignificant.

5.5.1 A comparison of exported manufactured goods to total exports revealed that it was less than 1% for all the years under review. A gloomier picture emerged when exported manufactured goods were related to gross domestic product (GDP). In 1989 it showed a figure of 0.8%. It could be concluded from Table 5.3 that export performance of the Nigerian economy was dismal in the period under consideration. One sign of hope is that there is an upward trend owing to export incentives including the low value of the Naira.

5.5.2 The clear verdict with respect to the international competitiveness of Nigeria over the study period is that it has worsened considerably as a result of the following:

- (a) Negative investment flow
- (b) dwindling flow of international technology;
- (c) A dismal rate of growth of manufacturing; and
- (d) sterile Export performance in the manufacturing sector.

No direct attempt is made to identify the casual factors for the poor performance but the instability of the foreign exchange market seems to be directly related to the malaise.

EXTERNAL PUBLIC DEBT  
(MILLION US \$)

Table 5.1

	1982	1983	1984	1985	1986	1987	1988	1989
1. Total Commitments 1/	14,741.5	17,758.4	29,337.8	57,029.0	21,973.1	33,102.1	38,768.2	41,525.1
2. Total Drawings 2/	10,187.1	12,184.0	17,703.5	48,871.3	18,830.0	28,733.4	34,893.5	30,062.0
(a) Conventional Loans	8,205.4	10,086.2	12,260.1	17,030.7	13,976.3	17,662.8	23,121.8	25,594.0
(b) Trade Debt	1,981.7	2,758.8	5,443.4	6,164.3	4,853.6	11,071.0	11,771.7	(10,467.9)
3. Total Repayment	1,367.5	2,267.3	3,166.9	5,904.4	2,858.7	5,288.5	6,493.1	7,204.6
4. Total Outstanding of Which	8,819.4	10,577.7	14,536.6	17,290.6	16,006.0	23,445.0	28,400.4	28,857.3
(a) Federal Government Debt Obligation	(6,801.0)	(8,576.8)	(2,077.2)	(13,962.0)	(11,927.4)	(19,782.3)	23,683.2	24,374.1
i. ICM Loans	4,431.4	3,907.0	4,309.0	5,403.4	5,267.4	6,484.8	7,343.6	-
ii. World Bank Loans	280.7	295.1	900.1	879.4	1,484.3	1,384.5	1,423.2	1,694.0
iii. Bilateral Loans	107.2	91.3	267.9	241.0	322.1	458.0	701.5	-
iv. Capital Interest on Rescheduled Loans	-	-	-	-	-	500.0	1,240.9	2,681.5
v. Promisory Notes	-	1,524.6	2,758.8	1,155.9	1,600.0	4,800.0	5,457.7	-
vi. Accrual Interest on Letters of Credit	-	-	-	-	-	500.0	433.9	430.5
vii. Letters of Credit	-	-	-	-	3,253.7	5,771.0	5,880.2	2,398.8
viii. Unrefinanced Trade Arrears	1,981.7	2,758.8	5,443.4	6,164.3	-	-	-	-
ix. Guaranteed Parastatal Loans	-	-	-	-	N/A	610.0	690.9	-
(b) State Government Obligations	(2,018.4)	(2,000.9)	(2,459.4)	(3,328.6)	(4,043.8)	(3,438.3)	(4,267.7)	4,053.7
i. ICM Loans	1,043.0	1,119.5	1,692.2	8,054.3	3,103.3	2,446.9	2,771.6	-
ii. World Bank Loans	249.7	271.3	371.1	404.1	315.1	658.2	695.2	-
iii. Bilateral Loans	56.1	88.0	83.4	124.1	12.4	116.0	112.0	-
iv. Unguaranteed State Government loans	66.7	522.1	312.6	477.4	613.0	217.2	688.9	-
(c) Unguaranteed Private Sector Loans	-	-	-	-	-	224.3	561.6	429.5

NOTE:

- 1/ Includes Trade Arrears  
2/ Includes refinanced trade debt/promisory notes  
Exchange Rates used in the conversion:  
1986 - N2.5954, 1987 - N4.2989,  
1988 - N4.7167, 1989 - N7.3725

Table 5.2

EXPORT OF MANUFACTURESS.I.T.C. Sections 5, 6, 7 & 8

<u>Year</u>	<u>Total Manufactured Exports</u> (N Million)	<u>Export</u> (\$ Million)	<u>Export of Machinery &amp; Transport Equipment</u> (N Million)	<u>Export of Machinery</u> (\$ Million)
1982	14.5	21.6	-	-
1983	9.0	12.0	-	-
1984	14.3	18.6	0.9	1.3
1985	8.5	9.6	0.8	1.1
1986	3.4	2.0	-	-
1987	138.3	34.8	2.2	0.6
1988	277.8	61.2	37.9	8.3
1989	641.8	87.1	61.5	8.3

Source: Central Bank of Nigeria  
Statistical Bulletin Vol. 2 No. 1 June 1991

Table 5.3

EXPORT PERFORMANCE

<u>Year</u>	<u>Total Merchandise Export</u> (\$ Million)	<u>G. D. P.</u> (\$ Million)	<u>Export of Manufactures</u> (\$ Million)	<u>Manufactured Exports as % of</u>	
				<u>GDP</u>	<u>Total Export</u>
1982	13,726.0	104,229.6	21.0	0.02	0.15
1983	11,569.9	88,448.6	12.0	0.01	0.10
1984	13,640.0	82,124.9	18.6	0.02	0.14
1985	17,493.7	77,225.6	9.6	0.01	0.05
1986	2,795.2	41,029.8	2.0	0.00	0.07
1987	7,341.2	17,822.8	34.8	0.02	0.47
1988	6,931.7	17,138.5	61.2	0.35	0.78
1989	7,870.9		87.1	0.79	0.64
1990	13,671.1	11,001.9	-	-	-
1991	12,264.3	9,140.0	-	-	-
1992	11,886.2	5,180.0	-	-	-

Source: Central Bank of Nigeria



**Table 5.4** **INDEX OF INDUSTRIAL PRODUCTION**  
(1985 = 100)

<i>Year/Quarter</i>	<i>Manufacturing (1)</i>	<i>Mining (2)</i>	<i>Electricity (3)</i>	<i>Total, all Sectors (4)</i>
1988.....	135.2	95.3	125.1	108.8
1989.....	154.3	109.2	165.2	125.0
1990.....	162.9	115.1	124.8	130.6
1991 <sup>1</sup> .....	178.1	120.1	125.3	138.8
1992 <sup>2</sup> .....	182.7	124.5	133.1	143.3
<i>1988</i>				
1st Quarter.....	117.2	89.6	130.0	99.4
2nd Quarter.....	146.0	95.2	146.8	112.7
3rd Quarter.....	131.5	94.9	98.8	106.7
4th Quarter.....	146.1	101.3	124.7	116.2
<i>1989</i>				
1st Quarter.....	159.0	94.2	223.3	118.0
2nd Quarter.....	157.2	110.0	176.8	126.7
3rd Quarter.....	148.9	116.9	134.9	127.6
4th Quarter.....	152.1	115.7	125.6	127.6
<i>1990<sup>1</sup></i>				
1st Quarter.....	158.8	113.6	118.7	128.2
2nd Quarter.....	157.4	110.7	132.3	126.1
3rd Quarter.....	166.9	112.7	124.0	130.3
4th Quarter.....	168.6	123.3	124.2	137.8
<i>1991<sup>1</sup></i>				
1st Quarter.....	169.7	119.6	126.0	135.8
2nd Quarter.....	180.3	119.0	121.9	138.7
3rd Quarter.....	181.3	122.1	123.2	141.1
4th Quarter.....	180.9	119.6	129.9	139.5
<i>1992<sup>2</sup></i>				
1st Quarter.....	178.0	117.7	127.6	140.6
2nd Quarter.....	180.0	120.9	128.3	142.8
3rd Quarter.....	184.0	132.6	144.1	147.4
4th Quarter.....	188.8	126.7	132.5	142.5

<sup>1</sup>Revised.

<sup>2</sup>Provisional.

*Sources:* Derived from data obtained from Federal Office of Statistics (F.O.S.), C.B.N. Surveys, Nigerian National Petroleum Corporation (N.N.P.C.), National Electric Power Plc (N.E.P.) and Federal Ministry of Mines, Power and Steel.

**INDEX OF MANUFACTURING PRODUCTION**  
(Base Quarterly Average 1985 = 100)

Table 5.5

Year/Quarter	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Sugar Confectionery	Soft Drinks	Beer & Stout	Cotton Textiles	Synthetic Fabrics	Foot- wear	Paints	Refined Petroleum	Cement	Roofing Sheets	Vehicle Assembly	Soap & Deter- gents	Radio & T.V.	Total
1988	190.1	185.5	76.0	123.6	1,318.6	73.8	98.7	84.6	119.9	50.6	4.4	104.6	14.7	135.2
1989	97.4	222.5	101.6	104.1	1,309.3	41.5	82.7	110.1	126.2	149.0	15.7	157.8	12.5	154.3
1990	93.7	364.4	97.8	118.0	1,501.6	45.8	62.7	108.8	88.7	79.6	24.1	153.0	12.2	162.9
1991	129.1	243.5	100.7	147.5	1,921.1	85.9	98.0	116.0	98.7	57.9	17.1	153.9	11.8	178.1
1992	176.7	186.5	104.5	151.1	1,891.6	92.0	99.7	113.7	100.5	41.2	18.3	153.9	11.6	182.7
1988														
1st Quarter	87.9	139.4	78.8	120.9	1,348.7	91.1	121.0	12.9	122.8	7.8	13.5	132.3	15.1	117.2
2nd Quarter	119.0	154.6	77.1	120.9	1,260.6	75.2	77.0	113.6	120.9	74.1	2.0	130.5	14.3	146.0
3rd Quarter	46.3	213.3	76.7	125.8	1,192.7	82.0	103.6	116.4	119.0	70.0	0.2	24.4	14.9	131.5
4th Quarter	507.3	234.6	71.3	126.6	1,472.4	47.0	93.2	95.5	116.7	50.6	1.9	131.3	14.4	146.1
1989														
1st Quarter	104.6	229.7	97.8	108.1	1,488.1	49.8	85.4	109.3	135.9	152.5	16.4	134.3	12.9	159.0
2nd Quarter	112.1	247.8	98.6	108.8	1,343.5	41.9	89.5	109.0	128.8	124.3	14.9	163.6	11.9	157.2
3rd Quarter	87.3	218.5	105.4	96.9	1,120.9	35.3	77.7	113.1	122.4	169.2	15.1	167.4	12.9	148.9
4th Quarter	85.6	194.1	104.5	102.7	1,284.5	38.9	78.2	109.0	117.5	150.1	16.4	166.0	12.3	152.1
1990														
1st Quarter	106.2	360.1	97.0	118.4	1,379.6	49.8	73.3	104.3	88.8	69.2	22.4	156.1	12.1	158.8
2nd Quarter	80.6	372.2	95.9	112.7	1,435.0	42.2	72.5	103.1	87.4	68.6	21.4	149.1	12.3	157.4
3rd Quarter	104.6	340.9	94.4	110.6	1,592.9	46.3	53.0	118.4	94.7	70.6	26.1	154.5	12.2	166.9
4th Quarter	83.5	384.5	103.9	130.4	1,598.7	44.9	51.9	109.3	84.0	110.0	25.6	152.2	12.2	108.6
1991														
1st Quarter	74.0	267.3	93.4	140.4	1,790.0	97.6	99.0	100.6	96.2	54.6	17.2	154.9	12.0	169.7
2nd Quarter	123.3	269.0	100.6	148.0	1,960.0	81.2	116.2	98.5	99.5	58.5	16.8	152.8	12.0	180.3
3rd Quarter	171.7	207.8	100.2	139.9	1,908.2	77.5	92.6	114.1	99.4	58.8	18.3	154.4	12.0	181.3
4th Quarter	147.2	230.9	108.6	161.6	2,026.0	87.4	84.2	150.7	99.6	59.5	15.9	153.6	11.0	180.9
1992														
1st Quarter	181.2	193.2	70.3	159.3	1,867.3	97.8	102.5	118.1	102.4	29.2	18.2	153.8	11.6	178.0
2nd Quarter	192.4	168.6	106.5	169.3	1,688.8	104.9	107.4	114.9	104.4	16.6	18.6	153.9	11.6	180.0
3rd Quarter	182.4	181.0	97.0	135.6	2,041.2	83.1	97.1	114.1	101.4	59.1	18.8	154.6	11.9	184.0
4th Quarter	150.8	202.8	96.0	136.6	2,284.1	82.3	91.6	107.6	93.6	59.8	17.4	153.1	11.2	188.8

Sources: Data derived from CBN Surveys and Federal Office of Statistics (FOS).

Table 5.6 **GROWTH IN MANUFACTURING PRODUCTION**  
(1985 = 100)

Sub-Groups	1988 (1)	1989 (2)	1990 (3)	1991 <sup>1</sup> (4)	1992 <sup>2</sup> (5)	Percentage Change over Preceding Years			
						1989 (6)	1990 (7)	1991 (8)	1992 (9)
Sugar Confectionery .....	190.1	97.4	93.7	129.1	176.7	-48.8	-3.8	37.8	36.9
Soft Drinks .....	185.5	222.5	364.4	243.5	186.5	19.9	63.8	-33.2	-23.4
Beer & Stout .....	76.0	101.6	97.8	100.7	92.5	33.7	-3.7	3.0	-8.1
Cotton Textiles .....	123.6	104.1	118.0	147.5	150.2	-15.8	1.3	25.0	1.8
Synthetic Fabrics .....	1,318.6	1,309.3	1,501.6	1,921.1	1,971.1	-0.7	14.7	27.9	2.6
Footwear .....	73.8	41.5	45.8	85.4	92.0	-43.8	10.4	87.6	7.1
Paints .....	98.7	82.7	62.7	98.0	99.7	-16.2	-24.2	56.3	1.7
Refined Petroleum .....	84.6	110.1	108.8	116.0	113.7	30.1	-1.2	6.6	-2.0
Cement .....	119.9	126.2	88.7	98.7	100.5	5.3	-29.7	11.3	1.8
Roofing Sheet .....	50.6	149.0	79.6	57.9	41.2	194.5	-46.6	-27.3	-28.8
Vehicle Assembly .....	4.4	15.7	24.1	17.1	18.3	256.8	53.5	-29.0	7.0
Soap & Detergent .....	104.6	157.8	153.0	153.9	153.9	50.9	-3.0	0.6	0.0
Radio & T.V. ....	14.7	12.5	12.2	11.8	11.6	15.0	-2.4	-3.3	-1.8
<b>TOTAL</b> .....	<b>135.2</b>	<b>154.3</b>	<b>162.9</b>	<b>178.1</b>	<b>182.7</b>	<b>14.1</b>	<b>5.6</b>	<b>9.3</b>	<b>2.6</b>

<sup>1</sup> Revised.

<sup>2</sup> Provisional.

Sources: Computed from data obtained from Federal Office of Statistics and CBN Surveys.

**INDEX OF PRINCIPAL MINERAL PRODUCTION**  
(1985 = 100)

Minerals	Weights (1)	1988 (2)	1989 (3)	1990 (4)	1991 (5)	1992 (6)	Percentage Change over Preceding Years			
							1989 (7)	1990 (8)	1991 (9)	1992 (10)
Petroleum .....	98.90	92.9	109.9	115.9	121.0	125.6	18.3	5.5	4.4	3.8
Gas .....	0.04	108.0	132.4	145.8	176.6	170.2	22.6	10.1	21.1	-3.6
Cassiterite .....	0.74	14.6	23.5	19.9	16.2	9.1	61.0	-15.3	-18.6	-43.8
Columbite .....	0.09	156.9	139.3	69.4	55.9	55.4	-11.2	-50.2	-19.5	-0.9
Coal .....	0.13	56.1	65.8	102.7	61.0	40.0	-0.5	56.1	-40.6	-34.4
Limestone .....	0.09	50.1	40.5	51.2	57.1	4.9	-19.2	26.4	11.5	-91.4
<b>All Minerals</b> .....	<b>100.00</b>	<b>92.2</b>	<b>109.2</b>	<b>115.1</b>	<b>120.1</b>	<b>124.5</b>	<b>18.4</b>	<b>5.4</b>	<b>4.3</b>	<b>3.7</b>

Sources: Computed from data obtained from Federal Ministry of Mines, Power and Steel, and Nigerian National Petroleum Corporation (NNPC), Lagos.

Table 5.7                      MANAGEMENT, TECHNICAL AND CONSULTING FEES  
1980 - 1992

<u>Year</u>	<u>Payment</u> N Million	<u>Payment</u> \$ Million	<u>% Change</u>
1980	3,462.2	6,294.9	-
1981	2,946.4	4,910.7	-22.0
1982	2,209.7	3,298.0	-32.8
1983	2,070.7	2,760.9	-16.3
1984	2,001.0	2,248.3	-18.6
1985	2,617.7	1,507.0	-34.0
1986	891.9	567.6	-62.3
1987	918.1	231.3	-59.3
1988	411.2	90.6	-60.8
1989	1,171.0	159.1	75.6
1990	1,693.2	203.0	27.6
1991	2,336.6	139.8	-31.1
1992	3,624.2	167.6	19.8

Source: Central Bank of Nigeria

CHEMICAL SECTOR  
PERCENTAGE OF LOCAL VALUE ADDED

Table 5.8a

<u>AG. NO.</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>
567			15	15	70	70	85	-
538		70	80	80	82	85	-	-
630		100	100	100	100	100	100	100
615/3				-	73.75	75	75	75.15
614/2				32	47	46	46	46
475	45	60	68	70	80	-	-	-
482		70	75	85	80	80	-	-
534			80	80	80	90	90	-
475	45	60	68	70	80	-	-	-
483		60	70	80	80	80	-	-

Table 5.8b ENGINEERING SECTOR  
PERCENTAGE OF LOCAL VALUE ADDED

<u>Company</u>	<u>AG No.</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>
1.	003	30	40	45	50	55	-	-	-
2.	143	44	44	38.7	33.7	34.2	35	35	35
3.	264	70	-	24	26	27	29	29	20
4.	540	62	82	82	82	82	65	75	80
5.	478	-	50	55	70	80	90	-	15
6.	274	-	12.13	21.16	22.76	65.58	83.18	-	-
7.	325	10	12	12	15	87	-	35	37
8.	162	78	80	82	-	50	60	65	70
9.	163	75	75	75	80	80	80	80	81.5
10.	101	70	75	75	80	70	70	70	75

AGRO-ALLIED SECTOR  
PERCENTAGE OF LOCAL VALUE ADDED

Table 5.8c

<u>AG. NO.</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>
AG.387	-	-	18.87	83.18	83.03	83.19	83.19	-
AG.300	60	61	63	64	62	-	-	-
AG.289/1	40	50	55	60	75	-	-	-
AG.224/2	-	-	-	75.68	80.11	80.11	80.11	80.11
AG.241	86.8	87.2	89.7	89.5	89.2	-	-	-
AG.505	-	30	35	45	60	70	-	-
AG.352	80	80	80	90	90	-	-	-
AG.594	-	-	-	95	95	95	95	95
AG.592/1	-	-	-	92	92	100	100	100
AG.537/3	-	-	-	80	85	87	90	95

SUMMARY OF VALUE - ADDED IN THREE SECTORS

Table 5.8

<u>Level of Value Added %</u>	<u>1985 No. of Firms</u>	<u>1986 No. of Firm</u>	<u>1987 No. of Firms</u>	<u>1988 No. of Firms</u>	<u>1989 No. of Firms</u>	<u>1990 No. of Firms</u>	<u>1991 No. of Firms</u>	<u>1992 No. of Firms</u>	<u>Total</u>
0	16	9	6	2	-	8	13	15	69
10-30	2	3	3	4	1	1	1	2	17
31-40	1	1	3	2	1	1	2	2	13
41-60	4	7	3	3	4	2	1	1	25
61-79	5	5	7	6	6	5	4	3	41
80-90	2	4	7	10	15	10	6	3	57
91-100	-	1	1	3	3	3	3	4	18
<u>Total</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>240</u>



Table 5.9

COMPARATIVE DATA ON THE NUMBER OF AGREEMENTS  
SUBMITTED AND REGISTERED BY NIOP SINCE INCEPTION

INDUSTRIAL SECTOR	AGREEMENTS SUBMITTED										AGREEMENTS REGISTERED									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	TOTAL	1983	1984	1985	1986	1987	1988	1989	1990	1991	TOTAL
Agro/Agro Allied	73	44	88	68	36	49	55	64	60	537	52	11	30	36	18	11	21	45	35	259
Chemical/ Minerals	48	21	98	90	60	173	71	146	108	815	33	19	31	52	34	77	40	60	75	421
Light/Heavy Engineering	89	31	78	64	25	38	73	75	85	558	69	14	25	27	21	36	38	43	61	334
Services	21	10	13	18	10	16	19	23	30	159	15	8	5	12	8	16	18	12	26	115
<b>Total</b>	<b>231</b>	<b>116</b>	<b>227</b>	<b>240</b>	<b>131</b>	<b>276</b>	<b>218</b>	<b>308</b>	<b>283</b>	<b>2069</b>	<b>169</b>	<b>52</b>	<b>91</b>	<b>127</b>	<b>81</b>	<b>140</b>	<b>117</b>	<b>160</b>	<b>197</b>	<b>1129</b>
								<u>Grand Total</u>	<u>2069</u>								<u>Grand Total</u>	<u>1129</u>		

EXTENT OF FOREIGN OWNERSHIP IN ENGINEERING, CHEMICAL,  
AND SERVICES SECTOR OF THE ECONOMY

Table 5.10

Extent of Foreign Ownership %	Sector			Total
	Engineering	Chemical	Services	
-10	2	10	6	18
11-20	-	1	2	3
21-40	8	5	11	24
41-60	10	4	1	15
60-90	-	-	-	-
91-100	-	-	-	-
Total	<u>20</u>	<u>20</u>	<u>20</u>	<u>60</u>

## CASE STUDY QUESTIONNAIRE

Annex I

INVESTMENT, TRANSFER OF TECHNOLOGY AND COMPETITIVENESSBackground Information on Firms

1. Name of Company: .....
- .....
- Address: .....
- .....
2. Date of Establishment: .....
3. Ownership structure
- (a) Nigerian .....
- (b) Foreign .....
4. Pattern of Technology Flow in the Company
- (a) Import of machinery and equipment (N'000).
- | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|------|------|------|------|------|------|------|------|
| ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
- (b) Import of intermediate goods for further processing (N'000).
- | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|------|------|------|------|------|------|------|------|
| ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
- (c) Licence fees/royalties paid or payable (N'000).
- | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|------|------|------|------|------|------|------|------|
| ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
- (d) Technical co-operation grants received (N'000).
- | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|------|------|------|------|------|------|------|------|
| ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
- (e) Other Technology payments made (N'000).
- | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|------|------|------|------|------|------|------|------|
| ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
5. Degree of Diversification of production:
- (i) Number of products .....
- (ii) Number of main products .....

NOTE:

Where space provided is inadequate, please use additional sheets.

6. Human Resources and Technological Base

- (a) No of skilled manpower employed in firms:
- |                                 | 1985  | 1992  |
|---------------------------------|-------|-------|
| (i) Engineers                   | ..... | ..... |
| (ii) Scientists                 | ..... | ..... |
| (iii) Technicians/Technologists | ..... | ..... |
| (iv) Others (specify)           | ..... | ..... |
- (b) On the job training incentives:
- |  |        |
|--|--------|
| (i) In-house training facilities       | Yes/No |
| If Yes, Number Trained                 | .....  |
| (ii) Overseas Training                 | Yes/No |
| If Yes, Number Trained                 | .....  |
| (iii) Training in affiliate facilities | Yes/No |
| If Yes, Number Trained                 | .....  |

7. Mechanisms of Technology Transfer:

- (a) Number and duration of stay of foreign experts in the company:
- |                     | <u>Number</u> | <u>Duration of Stay</u> |
|---------------------|---------------|-------------------------|
| (i) Engineers       | .....         | .....                   |
| (ii) Scientists     | .....         | .....                   |
| (iii) Other experts | .....         | .....                   |
| (Specify)           | .....         | .....                   |
- (b) Specify the role of consultants and technical assistance if any (Foreign/National) .....
- .....
- .....
- (c) On the job training provided by technology suppliers
- |                        | <u>Number</u> | <u>Duration</u> |
|------------------------|---------------|-----------------|
| (i) Engineers          | .....         | .....           |
| (ii) Scientists        | .....         | .....           |
| (iii) Others (Specify) | .....         | .....           |
- (d) Availability of:
- |                                       |                          |                          |
|---------------------------------------|--------------------------|--------------------------|
| (i) Operating manuals                 | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Maintenance/Service manuals      | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Detail Manufacturing procedures | <input type="checkbox"/> | <input type="checkbox"/> |

- (iv) Detail quality specifications
- (v) Trouble shooting/diagnostic manuals
- (vi) Product specifications
- (vii) Process specifications

(e) Contacts with suppliers of technology:

- (i) No of visits by technology suppliers since agreement was signed: .....
- (ii) Duration of visits: .....
- (iii) Technical correspondence with technology suppliers on problems:  
 No: .....  
 Solution: .....
- (iv) Seminars/workshops/Conferences organised by technology suppliers for recipient:  
 No: .....  
 Duration: .....
- (v) Understudies:  
 Position: .....  
 Duration of understudy: .....

6. (a) Value of total sales (₹ million)

1985	1986	1987	1988	1989	1990	1991	1992
---	---	---	---	---	---	---	---

(b) Percentage of Export (%)

1985	1986	1987	1988	1989	1990	1991	1992
---	---	---	---	---	---	---	---

9. Factors affecting Investment flows:

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| (i) Economic and Regulatory Environment | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Size of domestic market            | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Infrastructure                    | <input type="checkbox"/> | <input type="checkbox"/> |
| (iv) Skilled Labour                     | <input type="checkbox"/> | <input type="checkbox"/> |
| v) Low cost of Labour                   | <input type="checkbox"/> | <input type="checkbox"/> |

- (vi) Proximity to Raw Materials
- (vii) Presence of Components Industry
- (viii) Others .....

10. Technological upgrading, learning and impact on firm's performance:

(a) Any major investment during the past five years in new process or product technologies? Yes No

(b) If (a) is yes, specify determining factors .....

(c) Any technological learning through linkages with subcontractors/equipment suppliers or products users? Yes No

(d) R and D expenditure of firm/company in:-

	1985	1986	1987	1988	1989	1990	1991	1992
i) (₹)	---	---	---	---	---	---	---	---
ii) (% of Sales)	---	---	---	---	---	---	---	---
iii) Foreign R&D expenditure:	---	---	---	---	---	---	---	---

(e) Amount of R and D contracted to local Universities and Research Institutions (₹):

	1985	1986	1987	1988	1989	1990	1991	1992
	---	---	---	---	---	---	---	---

(f) R and D Personnel in the Company

No.

- (i) Engineers .....
- (ii) Scientists .....
- (iii) Technicians .....
- (iv) Others (specify) .....

11. Technology intensity of products and processes as measured by:

- (i) Number of product innovations in the last three years .....
- (ii) Number of process innovations in the last three years .....
- (iii) Frequency of product change in the industry. ....

12. What has been the performance of the firm in the past five years in terms of:

- (i) Productivity growth rate .....%
- (ii) Quality improvement (Reject rate) .....%
- (iii) Cost reduction .....%
- (iv) Profit after tax against turnover .....%
- (v) Capacity utilization .....%
- (vi) Labour costs reduction or increase .....%

13. Impact of New and Emerging Technologies:

(a) Which technologies have affected your company's operation most seriously in recent years:

- (i) Intelligent computers
- (ii) Robotics
- (iii) Aerospace
- (iv) Satellite communication
- (v) Microprocessors
- (vi) Lasers
- (vii) Medical diagnostics
- (viii) Others (specify) .....

(b) How have these technologies affected your company's :

- (i) price of product .....
- (ii) product quality .....
- (iii) product innovation .....
- (iv) market share .....

(c) To what extent have they :

- (i) improved your access to technology in your field?  
.....
- (ii) price paid for technology  
.....
- (iii) transfer of technology from your company to other firms  
.....
- (iv) from other firms to yours  
.....

14. Competitiveness: What are the most important factors affecting your competitiveness in international market:

	Yes	No
- Labour costs	<input type="checkbox"/>	<input type="checkbox"/>
- Exchange rates	<input type="checkbox"/>	<input type="checkbox"/>
- Access to and cost of Raw Materials	<input type="checkbox"/>	<input type="checkbox"/>
- Availability of components	<input type="checkbox"/>	<input type="checkbox"/>
- Access to financing	<input type="checkbox"/>	<input type="checkbox"/>
- Knowledge of markets	<input type="checkbox"/>	<input type="checkbox"/>
- Access to marketing channels	<input type="checkbox"/>	<input type="checkbox"/>
- Technological up-grading	<input type="checkbox"/>	<input type="checkbox"/>
- Others .....		

15. What are the impacts of technological changes on:

(increase) or (decrease)

(a) price competition	<input type="checkbox"/>	<input type="checkbox"/>	Yes	No
(b) more stringent quality		<input type="checkbox"/>	<input type="checkbox"/>	
(c) reduction in product life cycle		<input type="checkbox"/>	<input type="checkbox"/>	
(d) increased customer/producer interaction		<input type="checkbox"/>	<input type="checkbox"/>	

16. How has the firm responded to these changes?

	Yes	No	Number
(a) By frequent number of product changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
(b) By frequent number of process changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
(c) By employment of other company's personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
(d) By higher R and D spending	<input type="checkbox"/>	<input type="checkbox"/>	Amount <input type="text"/>



**A. Identification**

1. Name of Embassy: .....
2. Location/Address: .....
3. Contact Person at the Embassy: .....
4. Designation of Contact: .....
5. Telephone: .....

**B. Home Government Policies**

1. Kindly give us statistics on your country's trade with Nigeria in terms of:
  - (a) Commodity imports (\$000) and Exports (\$000)
  - (b) Tariff rates on imports to your country
    - (i) Manufactured goods
    - (ii) Raw Materials (specify)
  - (c) Any quantitative restrictions on imports from Nigeria or other countries.
2. Does your country have any bilateral trade and/or technology agreement with Nigeria?
  - (a) What are the main features?
  - (b) When did it come into force?
  - (c) Any problem encountered during implementation?  
(specify)
3. Does your country have any specific incentives that encourages firms to:
  - (a) Invest in other countries
  - (b) Set up manufacturing facilities in other countries
  - (c) Sell capital goods to other countries
  - (d) Licence foreign firms to use their technology

4. What technical assistance does your country provide to Nigeria in terms of:
- (a) Human Resources Development
  - (b) Provision of your nationals as consultants and experts to work in Nigeria
  - (c) Provision of technical aid programmes in fields of agriculture, manufacturing, infrastructure etc.?
  - (d) Other technical support for on-going projects.?
5. What economic and regulatory policies do you have in your country with respect to:
- (a) Foreign investment
  - (b) Foreign equity ownership in your country
  - (c) Land ownership
  - (d) Control of profit remittances
  - (e) Capital repatriation.
6. What specific technology related policies do you have in your country in terms of:
- (a) Fiscal incentives
  - (b) Financial incentives
  - (c) Protection of intellectual property
  - (d) Maintenance of high quality control standards
  - (e) Restriction of technology import
7. Kindly give us any publications that indicate your country's:
- (a) Industrialisation strategy
  - (b) Investment Policy
  - (c) Tariff protection/Export Incentives
  - (d) The existence of otherwise of preferential credit for manufacturing.
8. This form is completed by:
- Name: .....
- Designation: .....
- Signature/Date: .....