OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

18866

RESTRICTED

UNIDO
UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

FINAL REPORT

ON

POLICY PLANNING MODELS FOR THE NEPALESE ECONOMY WITH SPECIAL REFERENCE TO THE INDUSTRIAL SECTOR

INDUSTRIAL PLANNING AND
MONITORING
PROJECT NO. DP/NEP/86/005

SUBMITTED BY
DEVELOPMENT STUDY CONSULTANTS
KATHMANDU, NEPAL

NOVEMBER 1990

C O N T E N T S

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Abbreviations and Acronyms

APROSC	-	Agricultural Projects Services Centre
CBS	-	Central Bureau of Statistics
CD	-	Customs Department
CTA	-	Chief Technical Adviser
HMG	-	His Majesty's Government of Nepal
ICOR	-	Incremental Capital Output Ratio
IDS	-	Integrated Development Systems
I/O	-	Input Output
LES	-	Linear Expenditure System
MOF	-	Ministry of Finance/HMG
MOI	-	Ministry of Industry/HMG
NRB	-	Nepal Rastra Bank
SITC	-	Standard International Trade Classification
TPC	-	Trade Promotion Centre
UNDP	-	United Nations Development Programme
UNIDO	-	United Nations Industrial Development Organization

PREFACE

This modelling exercise was undertaken by a team of local experts with the support of United Nations Development Programme (UNDP) and United Nations Industrial Development Organization (UNIDO). The primary objective of this exercise was to develop a quantitative framework for medium and long term industrial planning whereby the macro-economic and sectoral impacts of alternative investment and other policy decisions could be assessed. For this purpose, a macro model and an input/output model were separately developed and linked together to undertake various sensitivity analyses.

As far as we know, this is the first comprehensive exercise of its nature in Nepal in which a macro-economic and an input/output planning model have been constructed separately and integrated subsequently with special focus on a long term industrial plan. It had been a challenging task in many ways. The poor data base and the very limited experience in Nepal in model building were considered by many as insuperable difficulties in undertaking this exercise. Doubts had also been expressed in some quarters about the validity of the models constructed on the basis of data series built up on various assumptions. However, it is needless to point out that unless a beginning is made now, it may be impossible to introduce quantitative techniques in our planning and policy analysis in the near future. One additional advantage of such an exercise is that it facilitates to pinpoint the areas where the data gap is more severe and further survey and research work is required. From these broad perspectives, therefore, we hope that this effort undertaken by us to construct the macro and input/output models and their subsequent integration, consistent with both the theory and economic reality

of Nepal, will make a significant contribution in the field of research, policy analysis and planning. To us, it has been a very satisfying and rewarding experience.

Because it is in the nature of an initial effort, we claim no perfection to the models constructed by us. We are conscious of several limitations arising from inadequate data base and other infirmities. But we hope this exercise provides a stimulus to further work in this direction, leading to updating, improvement and refinement of these models. We would welcome suggestions and criticisms which could help to improve the models. After all, the construction of models should become a regular feature of economic planning in future years.

During the course of model construction, sensitivity analysis and policy simulation, the study team benefited considerably from valuable suggestions provided by the Advisory Committee chaired by Dr. B.P. Dhital, Vice-Chairman of the National Planning Commission. Through the entire period of the modelling exercise, the study team received sustained help and support from Dr. B.N. Chalise, Joint Secretary, Ministry of Industry, Mr. M. Satyapal, CTA and Mr. Arjun Upadhya of UNIDO. Dr. S.H. Park of UNIDO and Dr. S.P. Gupta, International Consultant provided valuable guidance to the study team during the course of model construction, policy simulation and finalization of the report. The study team is very grateful to all of them. We are also grateful to a number of national and international experts for their constructive comments and suggestions during the period of model construction.

The project team would also like to thank the Nepalese and international experts who participated in various seminars organized during the course of the study. The study team also

expresses its gratitude to the various institutions for supplying necessary data and valuable information. Finally, we would like to put on record our appreciation to the UNIDO headquarters for entrusting us with this pioneering task which was also aimed at developing and enhancing local expertise in the technical area of model building.

November 1990
Kathmandu

Dr. Dilli Raj Khanal
(Project Coordinator)

MODELLING TEAM*

Dr. D.R. Khanal	Project Coordinator/Modelling Expert
Dr. Sharad Sharma	Development Economist
Mr. Ram Krishna Neupane, FCA	Financial and Cost Accounting Expert
Mr. Prakash Sapkota	Trade/Industry Expert
Mr. Hari Bol Shrestha	National Accounts Expert
Mr. Kapil Lohani	Computer Specialist

Research Assistants

Mr. Dinesh Khanal

Mr. Rabi Lal Bhusal

Mr. Babu Ram Khanal

Mr. Sushil Dahal

Mr. Bimal Banjade

* Dr. G.N. Sharma (Macro Economist), Dr. Kishore Gurugharana (Modelling Expert) and Mr. Hem Raj Kharel (Computer Specialist) were also associated with the modelling team in the early phase of the project work.

Chapter I

INTRODUCTION

1.1 Need for the Study

Industrialization has been historically a well-trodden path to economic development. Its vital role in the structural transformation of developing economies has found general acceptance among economic planners. Industry contributes in many ways to the accelerated growth of the economy. It produces a wide array of goods and services for consumers. It supplies a vast range of intermediate goods and capital goods to other sectors of the economy such as agriculture, mining, construction, public utilities and services, as well as numerous manufacturing industries within its own sector. Also, the most dynamic technological changes usually originate in the manufacturing sector and spread to the rest of the economy. Because of symbiotic relationships between industry and the rest of the economy, it seems almost impossible to consider industrialization issues in general and industrial planning in particular in isolation from the macro-economic context.

It is in this context that the construction and use of a macro-econometric and an input/output model were considered essential for long term industrial planning within the overall macro-economic framework. Such modelling exercises would enable us to derive policy implications of alternative industrial development strategies and to check and ensure the overall consistency and feasibility of each alternative strategy in the light of various macro-economic constraints imposed by both external and internal conditions.

In the past, some modelling exercises of the Nepalese economy had been attempted. For instance, an input/output table for the country was constructed in 1981/82 by local experts which

was the first attempt in this direction (Khanal D.R., Thapa. P.J., Elbers. C.; 1988). But the sectoral breakdown was too aggregative to be useful for the purpose of industrial planning. Though subsequently this was updated on the basis of 1986/87 data (Khanal, D.R., Bade, J., Elbers, C.; 1989), the problem of disaggregation and data gap still remained. At the same time, efforts were also made to develop a macro-econometric model, but these were mainly in the form of single equation models and hence of limited utility for intersectoral analysis.

This study is the first of its kind in that both a comprehensive 51-simultaneous equation macro-econometric model and 39-sector input/output model were jointly developed and linked together to derive policy implications of alternative development strategies at the detailed individual industry levels as well as at the overall economy level.

1.2 Objectives

The main objective of this modelling exercise is to identify the policy measures to accelerate and sustain the industrialization process consistent with the overall development objectives of Nepal. The development objectives of Nepal entails (a) rapid economic growth, fully exploiting Nepal's comparative advantages; (b) to generate high employment; (c) to develop a viable foreign trade sector and earn sufficient foreign exchange and (d) to alleviate poverty.

Accordingly, the modelling exercise aims to identify and quantify the kind of industrial and macro-economic policies needed to attain these development goals.

This modelling exercise may prove to be highly useful not only for mapping out a viable long-term industrial development strategy, but also to expand and improve the existing data base and information network on which policy-making decisions critically depend.

1.3 Scope of the Study

i. To develop and improve the data base for the modelling exercises.

ii. To construct a 39-sector disaggregated input/output table for the economy for 1986/87.

iii. To develop a 51-simultaneous equation macro-econometric model.

iv. To link the econometric model with the input/output model.

v. With the aid of a macro-econometric model linked to an input/output table, to run simulation exercises under alternative policy scenarios to assess the overall aggregative and sectoral implications of alternative development strategies.

vi. Based on simulation exercises, to formulate a set of policy recommendations for a long-term viable industrial development strategy.

The scope of the study as set out above would entail the following major tasks.

Historical Analysis: Analysis of various macroeconomic data on the sectoral output shares, employment, trade etc. for manufacturing and non-manufacturing sectors to capture the historical trend of economic and industrial growth and change.

Compilation of Data: Compilation and reconciliation of data on manufacturing census, exports, balance of payments over time, inter-sectoral investment, household expenditure surveys, national income accounts, profit and loss accounts of different enterprises etc. for the construction of the models covering the period of at least 14 to 15 years. Also to undertake small surveys, where data gap is more severe.

Input-Output Table: As an essential prerequisite to the construction of the model, preparation of 39 sector input-output

table taking latest manufacturing census data as a basis for detailed sectoral disaggregation of the manufacturing sector.

Modelling: The development of a 39 sector input-output model with detailed breakdown of the manufacturing sector into 23 subsectors in order to ensure a reasonably detailed analysis of the changing patterns of industrial development for a historical period, and further to project the sectoral developments and changes into the future.

The sectoral classifications of the manufacturing sector adopted for projection and historical analysis are as follows:

1. Dairy Products
2. Canning
3. Other Food Products
4. Grain Mill Products
5. Tobacco Manufacture
6. Beverages
7. Tea
8. Sugar and Confectionery
9. Carpets
10. Textiles
11. Garments
12. Jute Goods
13. Footwear and Leather Goods
14. Cement
15. Structural Clay
16. Pharmaceuticals
17. Chemicals
18. Wood and Furniture
19. Paper and Printing
20. Plastic and Rubber Products
21. Basic & Fabricated Metals
22. Electric and Electronic Goods
23. Industries N.S.E.

The non-manufacturing sectors include

1. Food crops
2. Jute
3. Tobacco
4. Sugarcane
5. Other cash crops
6. Livestock & Fisheries
7. Forestry
8. Mining and Quarrying
9. Construction
10. Gas, Electricity and Water
11. Hotel & Restaurants
12. Transport & Communication
13. Wholesale & Retail Trade
14. Banking, Real Estate and Dwelling
15. Governments services
16. Other services

Forward Projections: The development of forward projections for a period of ten years (1990-95 and 1995-2000) as representing the minimum time period required for examining a long term viable industrial development strategy.

For the projection of industrial growth, several simulation runs need to be carried out under the following scenarios:

With respect to the growth of GDP:

a. Base run
b. Moderate growth rate (Alternative I)
c. Medium growth rate (Alternative II)
d. Minimum acceptable growth rate (Alternative III)
e. High growth rate (Alternative IV)

With respect to industrial development strategies:

a. Export-oriented development
b. Import substitution oriented development
c. Combination of both.

Consistency Checks and Macro-adjustments: To develop the macro model in such a way as would facilitate the generation of key macro-economic parameters such as consumption, investment, money supply, prices, trade and current account balance for the period 1990-95 and 1995-2000. This would help in selecting that scenario which provides an acceptable growth rate within moderate rates of inflation and trade and current account deficits. The final demand vectors of this scenario are then fed into the input-output model for ensuring both inter-sectoral consistency and overall macro-economic stability.

Derivation of Policy Implications: Based on the results of the simulation runs, derivation of policy implications of different development strategies.

1.4 Structure of the Report

This study has been divided into eight Chapters. The present Chapter describes the objective, scope and rationale for the study. The next Chapter characterizes the major features of the Nepalese economy along with an evaluation of the overall performance of the industrial sector and specific policy issues related to industrial development. The structure of both macro-econometric and input/output models is described in the Third Chapter including the linking of the two models. The methods adopted for constructing data bases required for the macro-econometric model and the input/output table along with data problems encountered in the modelling exercise are explained in Chapter Four and Five respectively. Chapter Six is concerned with the validation of the macro-econometric model to assess its capacity to replicate the past data and its predictive power. Moreover, this Chapter also presents various alternative development scenarios derived through the macro model. The latter enables one to examine the broad policy implications of alternative development strategies on various macro-economic variables such as output, employment, consumption, savings, money supply, prices, trade and balance of payments as well as differential sectoral and industry impacts. In Chapter Seven reference run solution and sensitivity analysis of the input/output model are presented. Conclusions and major policy recommendations are given in the last Chapter.

CHAPTER 2

NEPALESE ECONOMY AND THE INDUSTRIAL STRUCTURE

2.1 Nepalese Economic Structure

There exists no general model that will apply universally to all developing countries. Each country model has to take into account the special socio-economic conditions unique to individual countries. Therefore, a brief review of the Nepalese economy is useful to define the context of the models attempted in this exercise.

The Nepalese economy today is confronted with severe problems of both long term and short term nature. The economy has stagnated at a very low historical growth rates of per capita income, estimated at 0.5 percent per year in the period of 1965-1987 with a current estimated per capita income of US$ 170 (1). In terms of per capita income, Nepal is ranked today as the second poorest country in the world. Not surprisingly, the country is also equally lagging in social development as shown by its unfavourable social indicators such as a low life expectancy of 51 years, a high fertility rate of 5.9 percent and an adult literacy rate of only 35 percent.

The structure of production has shown little change in the past three decades as the economy has been dominated by agriculture whose share in GDP ranged between 57 and 65 percent during the same period. Industry is still at a very early stage of development mainly dominated by cottage and small industries, and accounting for only about 6 percent of GDP.

Nepal covers an area of 147181 sq. km. with an estimated population of about 18.5 million in 1989. It is densely populated and has a relatively unfavourable ratio of cultivable land to population, mainly because only 17 percent of the land is

---

(1) World Bank; World Development Report, 1989

suitable for cultivation.

Economic growth in the 1980s was reasonably good, with an average real growth rate of about 5 percent (Table 2.1). These overall growth rates, however, tend to conceal certain basic weaknesses of the Nepalese economy. Several sources of the underlying weaknesses in the Nepalese economy can be identified.

Table 2.1: Selected Indicators of Nepal (1980-1988)

		1980-85	1980-88	1987-88
1.	GDP Growth rate per annum (percentage)			
	Current	13.70	14.61	17.23*
	Constant	4.90	5.10	7.83*
2.	GDP at current prices			
	In million Rupees			69513*
	In million US $			2958*
3.	GDP per capita (in US $)			164
		1979/80	1984/85	1987/88
4.	Sectoral Share of GDP at Current Prices (percentage)			
	a. Agriculture	61.80	56.60	55.51
	b. Mining & Manufacturing	4.50	5.10	5.84
	c. Construction	7.20	8.60	9.28
	d. Transport & Communication	7.00	6.70	6.64
	e. Trade & Services	19.50	23.00	22.73
5.	Expenditure Share of GDP at Current Prices (percentage)			
	a. Government Consumption	6.70	9.80	10.20
	b. Private Consumption	82.20	76.10	83.29
	c. Gross Investment	18.30	22.90	20.49
	d. Exports of Goods & Services	11.50	13.60	12.19
	e. Imports of Goods & Services	18.70	21.00	22.25
6.	Sectoral Percentage Share of Gross Domestic Fixed Investment (at Current Prices)			
	a. Agriculture	30.30	26.60	28.90
	b. Mining & Manufacturing	1.60	3.40	5.60
	c. Transport & Communication	14.60	12.60	14.60
	d. Construction	2.85	3.05	4.21
	e. Trade and Services	50.65	54.35	46.69

* Revised Estimate

		1979/80	1984/85	1987/88
7.	Saving & Investment Share of GDP (Percentage)			
	a. Domestic Saving	11.80	14.00	10.83
	b. Gross Domestic Fixed Investment	15.80	21.10	17.87
	c. Resource Balance	- 4.00	- 7.90	- 7.04
8.	Public Finance (Rs. in million)			
	Government Deficit	150.00	1799.90	807.1
9.	Consumer Price Index (1972 = 100)	177.60	280.90	409.30
10.	Balance of Payments (Rs. in million)			
	a. Commodity Trade Falance	- 2403.00	- 5022.20	- 9765.50
	b. Services (net)	873.20	1079.50	2211.70
	c. Trade Balance	- 1529.80	- 3942.70	- 7553.80
	d. Transfers	426.50	760.90	1652.30
	e. Current A/C Balance	- 1103.30	- 3181.80	- 5901.50
	f. Capital Flows (net)	1129.70	2315.80	8174.50
	Official	1339.00	2603.00	5646.70
	Private	- 209.30	- 287.20	2527.80
	g. Change in Reserve	26.40	- 866.00	2273.00

Source: Economic Survey 1989/90; Ministry of Finance

The Nepalese economy is dominated by agriculture, and trade ard services. The two sectors together accounted for almost 80 percent of GDP in 1988. The activities in trade and services are mainly concentrated in informal sector while those in agriculture are of subsistence type. They together contribute little to both the growth of tax base and export potential of the economy, thus aggravating government deficits and balance of payments problems.

Second, the government budgetary deficit which grew very rapidly in the 1980s is a matter of serious concern. Government deficit at current prices rose over ten fold from Rs. 150 million in 1980 to almost Rs. 1800 million in 1985, and then declined somewhat to the level of around Rs. 800 million (Table 2.1) in 1988. Undoubtedly this excessive demand induced by rapid expansion of overall government deficits has created serious inflationery pressures. For instance, the consumer price index

(1972 = 100) surged sharply from 178 to about 410 during the period of 1980 to 1988, roughly an increase of over 200 points. The growing budgetary deficit has been increasingly financed by both domestic and external sources, particularly from easy credit expansion of the banking system.

Third, the economy has experienced severe current account deficit which increased almost six-fold from Rs. 1103 million in 1980 to Rs. 5902 million in 1988. This sharp increase in current account deficit was caused by the unprecedented upsurge in import demand coupled with a sharp escalation in public expenditure during the same period. Furthermore, the large and widening resource gap has been financed primarily by foreign grants and loans. This aspect of financing the mounting import bill through grants and loans underscored the balance of payment dificulties.

Finally, despite the steady growth in aggregate investment accompanied by reasonable overall economic growth rates observed in recent years, the economy has yet to show strong evidence of structural transformation, bringing about perceptible change in the sectoral share of GDP. In contrast, investment in agriculture was somewhat reduced in recent years in terms of its sectoral share in gross fixed investment. Yet agriculture has borne the brunt of employment creation supporting over 90 percent of labour force.

In the light of the preceding discussions, the major macro-economic imbalances of the Nepalese economy may be summarised as follows:

1. worsening trade imbalance;
2. growing government deficits;
3. inflationary pressure building up; and
4. widespread unemployment and under-employment (aggravated by high population growth).

2.2 Performance of the Manufacturing Sector

The manufacturing sector in Nepal is composed chiefly of

light industries with very little intermediate and capital goods production. The latest Manufacturing Census (1987) shows that only about 137,000 workers are employed in the manufacturing sector in the country. Also latest information reveals that 246 industries operating in 10 industrial districts throughout the country employ less than 11000 workers in total (2). This means despite the establishment of industrial districts, industries have generated little employment.

Turning to individual industries within the manufacturing sector, food and allied industries which have been dominated by milling activities, notwithstanding their steadily decline over time, still contribute by far the largest share in total output, value added and employment (see Table 2.2). Notably, the reduction in the share of milling activities has been compensated by textile, leather, non-metallic, tobacco and beverages industries. But given the insignificant share of manufacturing sector in total output and employment, the expansion that has taken place has not contributed to any significant extent either in self-sufficiency or in promoting diversified export-oriented industries in the country. Though the share of manufactured goods in total exports has remarkably increased to the level of 63.2 percent in 1987/88 from as low as 9.7 percent in 1974/75, this growth has largely been explained by the rapid increase in the volume of readymade garments during the 1980s based on imported cloth and other raw materials from India, adding little to the value added of the Nepalese industrial sector (Table 2.3).

---

(2) Ministry of Finance, Economic Survey, 1988/89.

Table 2.2: Principal Indicators of Manufacturing Establishmnets

(Rs. in '000)

	1976/77							
	Total Output	%	Fixed Capital	%	Value Added	%	Employment	%
1. Food & Allied	3313048	84.09	722953	75.82	314698	59.11	20159	40.22
Of Which Grain Mills	(3199887)		(650607)	68.23	(273976)		(15171)	
2. Tobacco & Beverages	59037	1.50	7496	0.79	14558	2.73	5158	10.29
3. Textile, Leather & Allied	74431	1.89	40362	4.23	27305	5.13	3820	7.62
4. Wood & Furniture	117112	2.97	11911	1.25	33388	6.27	3094	6.17
5. Paper, Printing & Allied	14747	0.37	13940	1.46	4608	0.87	2011	4.01
6. Chemical, Plastic & Rubber	15489	0.39	3277	0.34	6247	1.17	874	1.74
7. Pharmaceuticals	6961	0.18	2526	0.26	3976	0.75	255	0.51
8. Non-Metallic Mineral Products	20960	0.53	9822	1.03	9303	1.75	6019	12.01
9. Metal Products	40053	1.02	14375	1.51	9791	1.84	990	1.98
10. Electric & Electronics	0	0	0	0	0	0	0	0
11. Miscellaneous	278117	7.06	126873	13.31	108558	20.39	7739	15.44
Total	3939955	100	953535	100	532432	100	50119	100

	1981/82							
	Total Output	%	Fixed Capital	%	Value Added	%	Employment	%
1. Food & Allied	4217746	59.42	638504	40.87	1126003	47.69	21761	29.52
Of Which Grain Mills	(3585684)		(361604)		(789154)		(12270)	
2. Tobacco & Beverages	986689	13.90	137519	8.80	523313	22.16	10986	14.90
3. Textile, Leather & Allied	657956	9.27	215574	13.80	270472	11.45	13569	18.41
4. Wood & Furniture	508347	7.16	50143	3.21	164982	6.99	3705	5.03
5. Paper, Printing & Allied	79480	1.12	37104	2.37	39900	1.69	2372	3.22
6. Chemical, Plastic & Rubber	204068	2.87	87543	5.60	79100	3.35	1330	1.80
7. Pharmaceuticals	16326	0.23	10209	0.65	4343	0.18	79	0.11
8. Non-Metallic Mineral Products	130478	1.84	161568	10.34	49480	2.10	15156	20.56
9. Metal Products	185304	2.61	75732	4.85	56155	2.38	3171	4.30
10. Electric & Electronics	0	0	0	0	0	0	0	0
11. Miscellaneous	111775	1.57	148543	9.51	47544	2.01	1589	2.16
Total	7098169	100	1562439	100	2361292	100	73718	100

	1986/87							
	Total Output	%	Fixed Capital	%	Value Added	%	Employment	%
1. Food & Allied	6677915	49.33	1513146	32.62	1453757	32.38	24050	17.57
Of Which Grain Mills	5295687		(341005)		(944782)		12920	
2. Tobacco & Beverages	1226255	9.06	381580	8.23	788750	17.57	10501	7.67
3. Textile, Leather & Allied	2159489	15.95	816672	17.61	877546	19.55	33928	24.78
4. Wood & Furniture	347100	2.56	192403	4.15	135059	3.01	6004	4.39
5. Paper, Printing & Allied	257597	1.90	222067	4.79	101162	2.25	3953	2.89
6. Chemical, Plastic & Rubber	807179	5.96	367676	7.93	247637	5.52	5923	4.33
7. Pharmaceuticals	55597	0.41	61311	1.32	18964	0.42	1086	0.79
8. Non-Metallic Mineral Products	937984	6.93	713698	15.39	554930	12.36	44416	32.44
9. Metal Products	770990	5.70	261830	5.65	222490	4.96	5287	3.86
10. Electric & Electronics	213558	1.58	77182	1.66	63516	1.41	806	0.59
11. Miscellaneous	83935	0.62	30620	0.66	25686	0.57	957	0.70
Total	13537599	100	4638185	100	4489497	100	136911	100

Source: Manufacturing Census of 1976/77, 1981/82 and 1986/87

Table 2.3: Total Export & Its Composition

Year	Total Export	Raw Materials	Manufact. Goods	Raw Materials	Manufact. Goods
	(In. Rs. Million)			Share (Percentage)	
1974/75	889.60	215.70	86.40	24.25	9.71
1979/80	1150.50	490.00	345.80	42.59	30.06
1984/85	2740.60	543.90	1162.50	19.85	42.42
1985/86	3078.00	474.20	1726.40	15.41	56.09
1986/87	2991.42	608.17	1671.03	20.33	55.86
1987/88	4114.50	685.17	2598.50	16.65	63.15

Source: Economic Survey 1988/89; Ministry of Finance

Turning to the composition of commodities exported to third countries, it is worth noting that the importance of jute has sharply declined from a sizable share of 27.6 percent in total exports in 1974/75 to a negligible 1.2 percent in 1987/88, while the export of readymade garments has soared steeply in recent years, from 0.8 percent to 36 percent during the same period (see Table 2.4). The export growth of carpets was also equally impressive, increasing its share sharply from 4.7 percent to 48 percent during the same period. In contrast, the export share of

handicrafts declined markedly from 10.5 percent to 2.1 percent, during tne same period, although its value of export has grown steadily from Rs. 17.5 million in 1974/75 to Rs. 53.8 million in 1987/88.

The only export item of manufactured goods to India has been jute goods whose export value has been highly erratic as shown in Table 2.5. Its share rose from 3.9 percent in 1979/80 to as high as 36 percent in 1984/85, only to drop to 15.2 percent in 1987/88.

Though the export trend shows the replacement of primary agricultural goods by industrial goods, it also clearly reveals the fragile base of the export sector, as it is dominated by one or two principal commodities.

Table 2.4 Exports of Major Commodities to Third Countries

(Rs. in Million)

Year	Total Export	Pulses	Raw Jute	Jute Goods	Carpets	Hide & Skin	Readymade Garments	Handicraft	Cardamum (Large)	Herbs	Wollen Goods
1974/75	166.60	8.00	45.90	34.30	7.90	6.00	1.30	17.50	6.70	9.90	6.70
1979/80	780.60	81.90	119.60	115.00	55.40	211.60	7.80	43.00	16.40	1.50	6.70
1984/85	1119.00	108.60			249.40	242.90	470.90	12.70	14.60	0.80	4.60
1985/86	1762.50	240.40	28.90		376.40	233.20	803.70	18.40	25.70	0.30	3.80
1986/87	1668.80	100.60	21.60		627.50	161.00	611.20	32.40	43.30	0.10	5.30
1987/88	2546.70	4.00	30.30	0.40	1223.00	165.40	916.00	53.80	20.00	0.20	9.00

Percentage Share of Major Commodities Exported to Third Countries

Year	Pulses	Raw Jute	Jute Goods	Carpets	Hide & Skin	Readymade Garments	Handicraft	Cardamum (Large)	Herbs	Wollen Goods
1974/75	4.80	27.55	20.59	4.74	3.60	0.78	10.50	4.02	5.94	4.02
1979/80	10.49	15.32	14.73	7.10	27.11	1.00	5.51	2.10	0.19	0.86
1984/85	9.71	0.00	0.00	22.29	21.71	42.08	1.13	1.30	0.07	0.41
1985/86	13.64	1.64	0.00	21.36	13.23	45.60	1.04	1.46	0.02	0.22
1986/87	6.05	1.30	0.00	37.71	9.68	36.74	1.95	2.60	0.01	0.32
1987/88	0.16	1.19	0.02	48.02	6.49	35.99	2.11	0.79	0.01	0.35

Source : Economic Survey 1988/89; Ministry of Finance

Table 2.5 Exports of Major Commodities to India

(Rs. in Million)

Year	Total Export	Mustard & Linseed	Raw Jute	Jute Goods	Dried Ginger	Timber	Rice	Herbs	Ghee
1974/75	512.50	29.40			29.90	283.20	116.70	2.20	52.00
1979/80	213.70		21.90	8.30	8.60	136.10	2.90	13.50	21.20
1984/85	722.20	25.70	43.90	260.00	38.70	25.70	250.00	27.90	39.40
1985/86	757.10	58.20	7.30	167.40	44.30		93.20	16.60	47.10
1986/87	498.20	103.10	14.50	164.00	47.50		14.40	8.10	46.60
1987/88	1241.40	141.30	44.10	188.70	71.30			16.40	46.70

Percentage Share of Major Commodities Exported to India

1974/75	5.74	0.00	0.00	5.66	55.26	22.77	0.45	10.15
1979/80	0.00	10.25	3.88	4.02	63.69	1.36	6.32	9.92
1984/85	3.56	6.08	36.00	5.36	3.56	34.62	3.86	5.46
1985/86	7.69	0.30	22.11	5.85	0.00	12.31	2.19	6.22
1986/87	20.69	2.91	32.92	11.54	0.00	2.89	1.63	9.35
1987/88	11.38	3.55	15.20	5.74	0.00	0.00	1.32	3.76

Source: Economic Survey 1988/89; Ministry of Finance

Similarly, the composition of imports reveals the very early stages of industrialization in which the Nepalese economy finds itself. The share of manufactured goods in the total imports is still considerable although it steadily declined from 39 percent in 1974/75 to 29.5 percent in 1987/88. In contrast, the share of raw materials has increased remarkably from 3.9 percent to 10 percent during the same period (see Table 2.6). It should be noted, however, that the "raw materials" imports largely represent the imports of semi-finished or nearly-finished goods which are used only at the very final stages of production, in most cases, thus adding very little to domestic value added. Some examples are the imported steel sheets used for manufacture of steel utensils, imported readymade foam cut into different sizes of plastic slippers, transistor assembly parts, imported cloth to manufacture readymade garments etc.

Table 2.6: Total Import and Its Composition

Year	Total Import	Raw Materials	Manufact. Goods	Raw Materials	Manufact. Goods
	(Rs. in Million)			Share (Percentage)	
1974/75	1814.60	70.80	707.60	3.90	38.99
1979/80	3480.10	126.90	1378.20	3.65	39.60
1984/85	7742.10	547.20	2827.50	7.07	36.52
1985/86	9341.17	494.89	3396.68	5.30	36.36
1986/87	10905.22	833.09	3890.80	7.64	35.68
1987/88	13869.60	1389.50	4098.30	10.02	29.55

Source: Economic Survey 1988/89; Ministry of Finance

The capacity utilization of some selected industries also presents a very erratic movement over the years as shown in table 2.7. By and large, the capacity utilization in a number of industries has been low mainly due to poor management, lack of investment planning, shortages of raw materials and inefficiency in production.

Table 2.7: Capacity Utilization of Selected Industries

(Percentage)

Name of the Industry	1980/81	1984/85	1987/88
Bansbari Leather & Shoe Factory			
Shoes (150,000 Pairs)	98.76	78.00	68.00
Processed Leather (1800000 Sq. Ft.)	96.85	90.00	105.83
Semi-Processed Leather (900000 Sq.Ft.)	52.87	81.89	
Janakpur Cigarette Factory (5.25 Billion Sticks)	39.00	92.00	98.29
Brick & Tile Factory (Harisiddhi 20 Million)	49.20	60.00	67.79
Hetauda Textile Industry (11 Million Metres)	28.70	54.00	59.07
Himal Cement Company (128,400 MT)	70.71	66.00	44.50
Agriculture Tools Factory (260,000 MT)	19.11	99.00	90.00

Note: Figures in brackets indicate installed capacity.

Source: Economic Survey 1988/89; Ministry of Finance

The share of private sector manufacturing in gross capital formation has been growing very slowly and rose to 8.9 percent of the total in 1985/86 from 2.6 percent in 1974/75, but declined to 7.6 in 1987/88 (Table 2.8). The low gross capital formation in private manufacturing sector is partly explained by the fact that investment in the services sector and particularly in real estate and dwelling continues to be more attractive than investment in manufacturing industries.

Table 2.8: Gross Fixed Capital Formation in Private Sector

	1974/75	1979/80	1984/85	1985/86	1986/87	1987/88
Gross Domestic Fixed Capital	1692.00	2200.00	5702.00	5281.00	5766.00	6680.00
1. Agriculture, Hunting, Forestry & Fishing	800.00	752.00	1144.00	1245.00	1205.00	1430.00
Share in Total	47.28	34.18	20.06	23.58	20.90	21.41
2. Manufacturing	44.00	47.00	284.00	472.00	425.00	511.00
Share in Total	2.60	2.14	4.98	8.94	7.37	7.65
3. Finance, Real Estate & Dwelling	526.00	1025.00	1995.00	2386.00	2888.00	3267.00
Share in Total	31.09	46.59	34.99	45.18	50.09	48.91
4. Others	322.00	376.00	2279.00	1178.00	1248.00	1472.00
Share in Total	19.03	17.09	39.97	22.31	21.64	22.03

Source: Central Bureau of Statistics

The low share of manufacturing in GDP can be attributed to a number of factors. First, there is a chronic imbalance in the external sector and the consequent foreign exchange squeeze, while the absorptive capacity of the economy to implement foreign aided projects is quite limited. Second, whereas the financial institutions are sufficiently endowed with resources, the rural poor which constitutes the target population for developing potential industrial entrepreneurs has very limited access to industrial credit facilities. Third, despite the rapid population growth, the shortage of trained manpower has impeded the implementation of a number of development projects. Fourth, heavy reliance o imported finished or semi-finished manufactured goods in exports has contributed little to the development of the

industrial linkages in the economy. Fifth, significant capacity underutilization has prevailed in manufacturing establishments, particularly in public enterprises. Finally, inappropriate and conflicting policies pertaining to industrial, trade, fiscal, foreign exchange and monetary management have been detrimental to the rapid structural transformation of the economy in general and the industrial sector in particular.

As a result, increase in output has not been commensurate with large increases in investment, reflecting the misallocation of scarce resources.

2.3 Policy Issues for Industrial Planning

As of 1984/85 over 42 percent of Nepal's population is in absolute poverty, while rapid population growth, put at 2.66 percent per year, is worsening the already alarming situation every year. Against this background of widespread poverty, there would be little prospects of alleviating it, if the present trend continues. What is urgently needed is a substantially higher economic growth rate than has been observed in the past. This is possible only in the context of a higher level of investment and towards this end, additional resources have to be mobilized both internally and externally, while utilizing them more efficiently and productively.

By and large, investment programs in the past were drawn up and implemented without regard to considerations of overall macro-economic implications and intersectoral consistency. They also lacked the framework of medium and long term perspectives of the Nepalese economy. Only within a broad national economic framework, priority industries for development can be identified and their feasibilities can be assessed. This is precisely what this modelling exercise proposes to accomplish. It will attempt to demarcate the role of manufacturing industries in a longer term perspective of economic development, examine alternate development strategies and policies, establish inter-sectoral and intra-sectoral linkages and indicate desirable investment and

output targets and suggest the path to follow in the realisation of these targets. This modelling exercise will particularly help to identify:

i. those industries with maximum backward and forward linkages
ii. those industries which are relatively labour intensive
iii. those industries showing lower ICOR i.e., high capital productivity, and
iv. those industries which have comparative advantages in terms of export promotion and import substitution.

Chapter 3

POLICY PLANNING MODELS FOR NEPALESE ECONOMY WITH SPECIAL REFERENCE TO THE INDUSTRIAL SECTOR

3.1 Macro Model

Models are quantitative tools generally used by national planners to find solutions to a wide variety of economic planning and policy issues. The nature of the problem is an important determinant in formulating the structure of the models and its variables. Whether the problem is of short, medium or long term nature makes a significant difference to the characteristics of the model.

Macro models are often influenced by Keynesian Income-Expenditure theory and, therefore, are applied to address short term stabilization problems. Such models tend to ignore the supply side of the economy. However, the structural supply-oriented factors together with external factors are critically important to a small country like Nepal. Hence, it is necessary to take them into account in constructing the macro-model for Nepal. Another important aspect which cannot be overlooked in drawing up the model specification is the nature and availability of time series data required for model estimation.

Since the model estimation primarily relies on national income accounts and international trade statistics, its specification is largely dictated by the way such statistics are compiled.

The main objective of the macro model is to find out the optimum size of investment in conformity with:

i. a tolerable rate of inflation;
ii. an acceptable ratio of deficit;
iii. a realistic level of foreign assistance;
iv. a stipulated rate of growth of per capita consumption in order to increase the consumption level of poor people; and

v. the fulfillment of an acceptable level of employment generation.

The macro model has been constructed based on data pertaining to the period of fourteen years (from 1974/75 to 1987/88) and consists of the following major blocks:

1. Production and Expenditure Block
2. Money and Prices
3. Labour Market and Employment
4. Foreign Trade
5. Government Revenue
6. External Balance

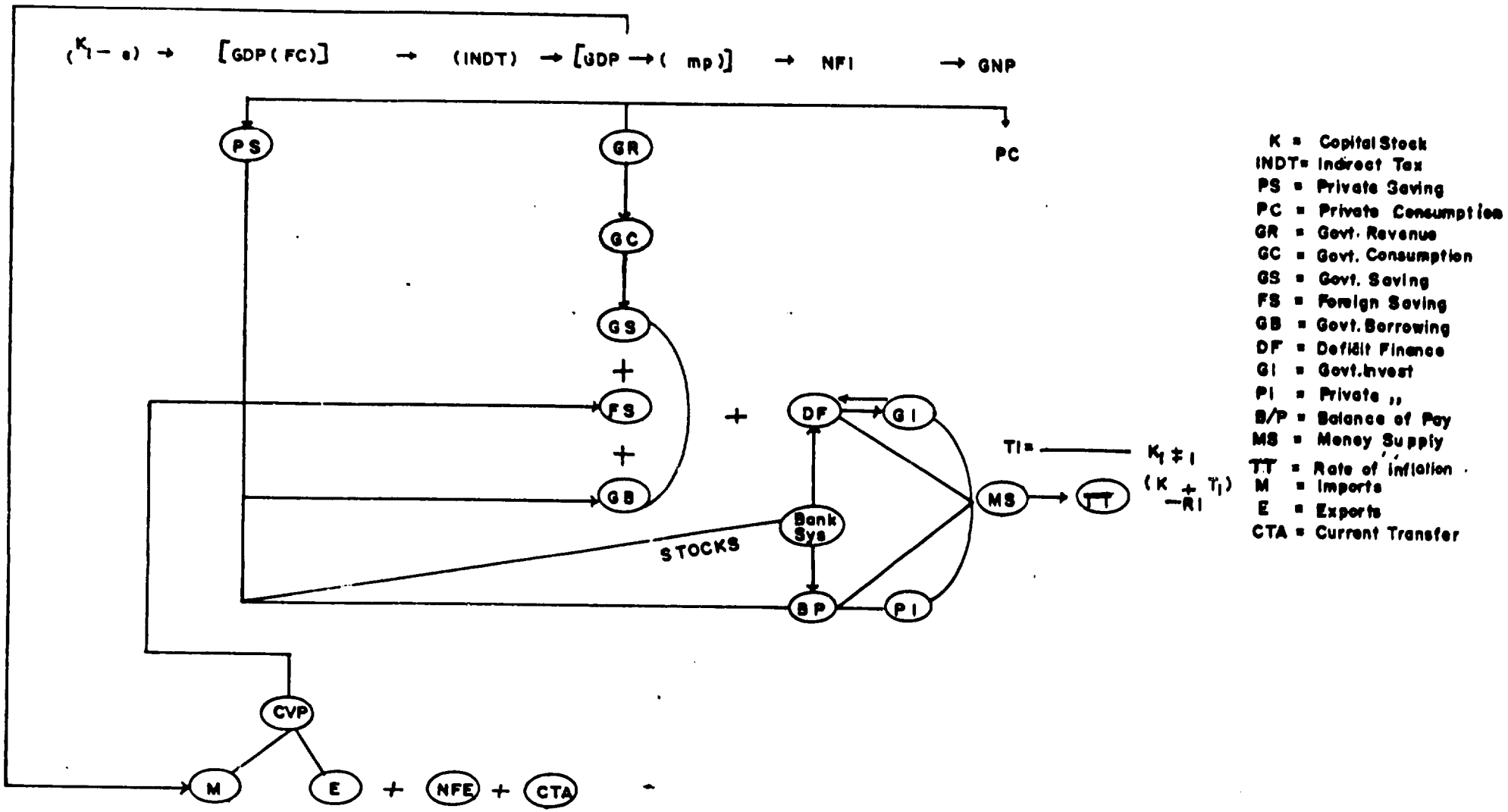
The model has been utilized to derive the following important co-efficients; these are necessary for the Input/Output model too:

1. Consumption propensity
2. Import propensity of major SITC commodities
3. Buoyancy of various taxes
4. Money supply
5. Prices
6. Employment
7. ICOR
8. Money-price deficit financing relationship

The basic concept of the model is given in the attached flow chart. The flow chart explicitly brings out the possible trade offs between a higher investment size and a lesser degree of self-reliance from more external assistance, a more crowding out of private investment, a lesser control on inflation and increase in money supply. The key trade off can be illustrated by the following identity:

Government Overall Budget Deficit = (Government borrowing + Grants + Changes in Reserves) + (Private Sector Saving - Private Sector Investment).

FLOW CHART OF THE MACRO MODEL



K = Capital Stock
INDT = Indirect Tax
PS = Private Saving
PC = Private Consumption
GR = Govt. Revenue
GC = Govt. Consumption
GS = Govt. Saving
FS = Foreign Saving
GB = Govt. Borrowing
DF = Deficit Finance
GI = Govt. Invest
PI = Private ,,
B/P = Balance of Pay
MS = Money Supply
TT = Rate of inflation
M = Imports
E = Exports
CTA = Current Transfer

Algebra of the Model

1. VAA = 20914.777 + 0.359968 AGRIC(-1)
(13.45)
R-2 = .93:DW = 1.31:F = 95
Where,
VAA = Value Added in Agriculture
ARRIC(-1) = One Year Lagged Cumulative Investment in Agriculture

2. VMM = 1643.242+0.5472033 MMIC(-1)
(17.65)
R-1 = .96; DW = 0.73; F = 160.24
Where,
VMM = Value Added in Manufacturing and Mining
MMIC(-1)= One Year Lagged Cumulative Investment in Manufacturing and Mining.

3. VAC = 2729.9284 + 0.7373775 CONSIC(-2)
(8.34)
R-2 = 0.87 DW = 1.50; F = 38.39
Where,
VAC = Value Added in Construction
CONSIC(-2) = Two Year Lagged Cumulative Investment in Construction.

4. VASS = 25-1.8974 + 0.3133943 SSIC(-1)
(22.65)

R-2 = 0.95; DW = 0.98; F = 261
Where,
VASS = Value Added in Social Services
SSIC(-1)= One Year Lagged Investment Cumulative Investment in Social Services

5. VATC = 2899.2342 + 0.0190629 TCIC(-3)
(4.37)
R-2 = 0.71; DW = 1.22; F = 13.12
Where,
VATC = Value Added in Transport and Communication
TCIC(-3)= Three Years Lagged Cumulative Investment in Transport and Communication.

6. VAFRD = 3268.2777 + 0.0466488 REDIC(-1)
(9.65)
R-2 = 0.89; DW = 1.46 F = 51.07
Where,
VAFRD = Value Added in Finance, Real Estate and Dwelling
REDIC = One Year Lagged Cumulative Investment in Finance, Real Estate and Dwelling

7. VAEG = 67.413964 + 0.032941 ELECIC(-3)

(9.42)
R-2 = 0.90; DW = 1.31; F = 47.96

Where,
VAEG = Value Added in Electricity and Gas
ELECIC(-3) = Three Years Lagged Cumulative Investment in Electricity and Gas

8. VATR = 1308.4556 + 0.3786615 TRRADEIC(-1)
(8.32)
R-2 = 0.86; DW = 0.58; F = 39.08
Where,
VATR = Value Added in Trade, Hotel and Restaurant
TRADEIC(-1) = One Year Lagged Cumulative Investment in Trade, Hotel and Restaurant

9. PRVCR = 2066.8250 + 0.7442635 GNP
(38.00)
R-2 = 0.99; DW = 1.57; F = 727.04
Where,
PRVCR = Private Consumption
GNP = Gross National Product

10. MS = -2065.7569 + 0.5386110 GFD(-1) + 1.3449761 PSCR
(2.66) (15.60)
R-2 = 0.96; DW = 0.85; F = 89.51
Where,
MS = Money Supply
GDF(-1) = One Year Lagged Government Fiscal Deficit
PSCR = Credit to the Private Sector

11. GDPDA = 8.1019040 + 0.0027294 MS + 0.1219092 IMPI
(2.36) (2.19)
0.6262734 GDPDA(-1)
(3.63)
R-2 = 0.99; DW = 2.24; F = 309.12
Where,
GDPDA = GDP Deflator, Agriculture
MS = Money Supply
IMPI = Import Price Index
GDPDA(-1)= One Year Lagged GDP Deflator, Agriculture

12. GDPDNA = 38.343038 + 0.0104376 MS
(7.40)
+ 0.0014734 NAGDP + 0.1926548 IMPI(-1)
(1.56) (2.33)
R-2 = 0.98; DW = 0.96; F = 186.82
Where,
GDPDNA = GDP Deflator, Non-Agriculture
MS = Money Supply
NAGDP = Non-Agricultural GDP
IMPI(-1) = One Year Lagged Import Price Index

13. CPI = -9.8270262 + 0.4722221 GDPDA + 0.6229494 GDPDNA

R-2 = 0.99; DW = 1.04; F = 1013.09
Where,

CPI = Consumer Price Index
GDPDA = GDP Deflator, Agriculture
GDPDNA = GDP Deflator, Non-Agriculture

14. LA = 2.5204286 + 0.0001403 VAA
(7.18)
R-2 = 0.82; DW 0.41; F = 30.72
Where,
LA = Employment in Agriculture
VAA = Value Added in Agriculture

15. LMM = -0.0137839 + 4.360E - 05 VMM
(20.78)
R-2 = 0.97; DW = 1.007; F = 220.92
Where,
LMM = Employment in Manufacturing & Mining
VMM = Value Added in Manufacturing & Mining

16. LC = -0.0504756 + 2.722E - 05 VAC
(8.87)
R-2 = 0.87; DW = 0.61; F = 44.28
Where,
LC = Employment in Construction
VAC = Value Added in Construction

17. LTC = -0.1695132 + 8.9111 E - 05 VATC
(4.81)
R-2 = 0.70; DW = 0.27; F = 16.49
Where,
LTC = Employment in Transport and Communication
VATC = Value Added in Transport and Communication

18. LTR = 0.0065683 + 5.623E - 05 VATR
(12.25)
R-2 = 0.92; DW + 0.65; F = 79.93
Where,
LTR = Employment in Trade, Hotel & Restaurant
VATR = Value Added in Trade, Hotel & Restaurant

19. LEG = 0.0018554 + 7.241E - 06 VAEG
(12.64)
R-2 = 0.93; DW = 0.73; F = 84.85
Where,
LEG = Employment in Electricity & Gas
VAEG = Value Added in Electricity and Gas

20. LFRD = - 0.0219223 + 8.708E - 06 VAFRD
(10.21)
R-2 = 0.90; DW = 0.84; F = 57.03
Where,
LFRD = Employment in Finance, Real Estate and Dwelling

VAFRD = Value Added in Finance, Real Estate and Dwelling

21. LSS = - 0.1384708 + 0.0001340 VASS
(25.35)

R-2 = 0.98; DW = 1.69; F = 326.17

Where,

LSS = Emplyment in Social Services

VASS = Value Added in Social Services

22. MFS = - 1096.2734 + 0.0413758 GDP
(9.29)

R-2 = 0.88; DW = 1.98; F = 48.10

Where,

MFS = Imports of 0 and 1 SITC Group

GDP = Gross Domestic Product

23. MR = - 588.01485 + 0.3521733 VMM + 0.4278029 MR(-1)
(3.07) (1.31)

R-2 = 0.94; DW = 2.49; F = 66.11

Where,

MR = Imports of Raw Materials (2+4 SITC Group)

VMM = Value Added in Manufacturing & Mining

MR(-1) = Lagged Import of Raw Materials

24. MK = - 182.26349 + 0.4821908FA + 0.4050333 MK(-1)
(5.76) (2.58)

R-2 = 0.98; DW = 1.10; F = 229.67

Where,

MK = Import of Capital Imports (7 SITC Group)

FA = Foreign Aid

MK(-1) = Capital Imports, Lagged

25. MMG = - 3697.29 + 0.1203725 GDP + 0.384129 GFD
(4.31) (3.84)
+ 0.2516453 MMG(-1)
(1.53)

R-2 = 0.96; DW = 2.07; F = 78.42

Where,

MMG = Imports of 5, 6, 8 and 9 SITC Group

GDP = Gross Domestic Product

GFD = Government Fiscal Deficit

26. DT = -204.73266 + 0.0122368 GDP
(8.16)

R-2 = 0.85; DW = 1.09; F = 38.24

Where,

DT = Direct Tax

GDP = Gross Domestic Product

27. EXD = - 25.735904 + 0.2077930 VMM
(9.47)

R-2 = 0.88; DW = 0.49; F = 49.76

Where,

EXD = Excise Duty

VMM = Value Added in Manufacturing & Mining

28. ST = - 497.34882 + 0.0289424 GDP
(8.42)
R-2 = 0.86; DW = 0.56; F = 40.40
Where,
ST = Sales Tax
GDP = Gross Domestic Product

29. AGT = 421.64242 - 0.0448668 TCA
(-1.45)
R-2 = 0.43; DW = 1.44; F = 5.998
Where,
AGT = Agricultural Tax
TCA = Total Cultivated Area

30. TAF = 862.09407 + 0.0613430 IMPG
(4.33)
R-2 = 0.67; DW = 0.95; F = 14.32
Where,
TAF = Tariff Revenue
IMPG = Imports ou Goods

31. NTR = - 912.00533 + 0.0336274 GDP
(8.63)
R-2 = 0.86; DW = 1.65; F = 42.16
Where,
NTR = Non-Tax Revenue
GDP = Gross Domestic Product

<u>Identities</u>

32. TVA = VAA + VMM + VAC + VATC + VATR + VAEG + VAFRD + VASS

33. GDP = TVA + INDT

34. GNP = GDP + NFI

35. LD = LA + LMM + LC + LTC + LTR + LEG + LFRD + LSS

36. IMPG = MFS + MR + MFL + MK + MMG

37. GR = INDT + DT + NTR

38. GE = GOVC + GOVGFI + GOVTRS

39. GOVTS = GR - GOVC - GOVTRS

40. GFD = GE - GR - FA

41. INDT = AGT + EXD + ST + TAE + OTR

42. CAB = EXPG + EXPS - IMPG - IMPS + NFD + CTA

43. TIR = PRVS + GOVTS + FA

44. NS = GNP - PRVCR - GOVC

45. PRVS = NS - GOVTS

46. ISGR = TIR - NS

47. FA = GFB + GFG

48. NAGDP = GDP - AGDP

49. AGDP = VAA + AGT

50. PRVGFIR = TIR - GOVGFI

51. CS = GNP - PRVCR - GOVC - PRVGFIR - GOVGFI - EXPG - EXPS + IMPG + IMPS

Exogenous and Endogenous Variables of the Model

Endogenous Variables

1. VAA Value Added in Agriculture
2. VMM Value Added in Manufacturing
3. VATC Value Added in Transport and Communication
4. VAEG Value Added in Electricity and Gas
5. VASS Value Added in Social Service
6. VAFRO Value Added in Finance, Real Estate and Dwelling
7. VAC Value Added in Construction
8. PRVCR Private Consumption
9. VATR Value Added in Trade, Restaurant and Hotel
10. GDPDA Agricultural GDP Deflator
11. GDPDNA Non-Agricultural GDP Deflator
12. CPI Consumer Price Index
13. MS Money Supply
14. LA Labour Absorption in Agriculture
15. LMM Labour Absorption in Manufacturing and Mining
16. LC Labour Absorption in Construction
17. LMM Labour Absorption in Transport and Communication
18. LTR Labour Absorption in Trade
19. LEG Labour Absorption in Electricity and Gas
20. LFRD Labour Absorption in Real Estate and Dwelling
21. LSS Labour Absorption in Social Services
22. MFS Imports of 0 and 1 SITC Group
23. MR Imports of 2 and 4 SITC Group
24. MK Imports of Capital Goods
25. MMG Imports of Manufactured Goods
26. DT Direct Tax
27. EXD Excise
28. ST Sales Tax
29. AGT Agricultural Tax
30. TAF Tariffs
31. NTR Non-Tax Revenue
32. GDP Gross Domestic Product
33. GNP Gross National Product
34. LD Total Labour Absorption
35. IMPG Total Imports
36. GR Government Total Revenue
37. GE Government Total Expenditure
38. TVA Total Value Added at Factor Cost
39. GOVTS Government Saving
40. GFD Government Fiscal Deficit
41. INDT Indirect Tax
42. CAB Current Account Balance
43. PRVS Private Sector Saving
44. NS National Saving
45. ISGR Investment Saving Gap
46. FA Foreign Aid
47. NAGDP Non-Agricultural GDP
48. AGDP Agricultural GDP
49. TIR Total Investment
50. PRVGFIR Private Sector Gross Fixed Investment
51. CS Change in Stocks

Exogenous Variables

1. IMPI Import Price Index
2. PSCR Private Sector Credit from Banking System
3. TCA Total Cultivated Area
4. NFI Net Factor Income
5. MFI Fuel Import
6. GOVC Government Consumption
7. GOVGFI Government Investment
8. GOVTRS Government Transfers
9. OTR Other Tax Revenue
10. EXPG Export of Goods
11. EXPS Export of Services
12. IMPS Import of Services
13. GFB Government Foreign Borrowing
14. GFG Government Foreign Grants
15. CTA Current Transfer from Abroad

Predetermined Variables

1. AGRFC(-1) One Year Lagged Cumulative Investment in Agriculture
2. MMFC(-1) One Year Lagged Cumulative Investment in Mining & Manufacturing
3. TCFC(-1) One Year Lagged Cumulative Investment in Transport and Communication
4. ELECIC(-3) Three Year Lagged Cumulative Investment in Electricity
5. SSIC(-1) One Year Lagged Cumulative Investment in Social and Community Services
6. REDIC(-1) One Year Lagged Cumulative Investment in Finance, Real Estate and Dwelling
7. CONSFC(-2) Two Year Lagged Cumulative Investment in Construction
8. TRADEIC(-1) One Year Lagged Cumulative Investment in Trade
9. GDPDA(-1) One Year Lagged GDP Deflator, Agriculture
10. GDPDNA(-1) One Year Lagged GDP Deflator, Non-Agriculture
11. GFD(-1) Government Fiscal Deficit, Lagged
12. MR(-1) Raw Material Import
13. MK(-1) Capital Goods Import
14. MMG(-1) Manufactured Goods Import

The structure of the model is given above in the form of behavioural equations and identities along with both endogenous and exogenous variables. In the model, there are 31 behavioural equations against 15 exogenous and 14 predetermined variables. In the model, production functions and other equations have been specified in such a way as to facilitate the derivation of key macro parameters such as output, money supply, prices, trade and current account balance. Likewise, in the model employment

equations are related to sectoral value added. On the whole, macro model has been specified in such a way that it helps to examine various imbalances of the economy besides the implication of key policy parameters and exogenous variables on major endogenous variables such as output and employment.

3.2 Input Output Model

A comparative "Static, Open Input-Output Model" has been chosen in this exercise instead of a dynamic one mainly on account of paucity of sectoral investment data in Nepal. The model, however, has been closed in an indirect way by integrating it with a macro econometric model when consistent relationships among the outputs, consumption, investments, exports and imports have been reached between major aggregate sectors and over the projection period.

The basic message of a static input-output model is: given a pattern of consumption, investments, exports and imports, there is always a consistent pattern of gross outputs which satisfy the "demand-supply" balances in every sector of the economy at the prevalent prices (i.e. base period prices).

Gross output plus imports (which constitutes supply)is equal to private consumption plus public consumption plus private and public investments plus exports (which constitutes total demand: both domestic and foreign)*. This balance is achieved in each sector. This is an identity in which the import-export balance is satisfied. In Prof. Chenery's "two gap" concept, this relation automatically satisfies the "saving-investment" gap with the "export-import" (i.e. trade) gap and, therefore, ensures an equilibrium situation.

This type of models have become now a strong planning tool in most LDC's because by using such models, the planners could

---

* when stock changes have been merged with private consumption.

ensure the necessary supply of domestic output and imports, given the forecasted demand and, therefore, guarantee price stability and an absence of any shortages and surpluses in every sector of the economy. In terms of algebra:

$$X + M = AX + C + I + E \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$\text{or } X - AX = C + I + E - M$$

$$\text{or } X = (1 - A)^{-1} [C + I + E - M] \ldots (2)$$

$$\text{when } C + I + E - M = F$$

Notations:

- X = gross output vector of n sectors (in the present exercise n = 39)
- C = consumption vector, both public and private
- I = investment vector, both public and private
- E = Export vector, both public and private
- M = Total import vector including consumption, investments, and intermediates, when
- F = Final demand vector.

If however, the Matrix [A] is gross of imports then the aij's will give only the total input (taking both domestic and foreign input to gross outputs), but if matrix [A] is net of imports it will give only the domestic input to outputs.

[A] matrix is the coefficient matrix of the actual input/output flows. This has been explained in Chapter 5 (construction of the input output table). The property of [A] matrix is that $\sum_{\sim} aij < 1$ and all $aij < 1$;

This gives:

$$[1-A]^{-1} = 1 + A + A_2 + A_3 \ldots An,$$

when $An \rightarrow 0$

When equation (2) is used, it would mean that in estimating output for production of the stipulated demand, all the needs for both direct and indirect inputs have been considered. This means, the matrix $(1-A)^{-1}$ gives the multiplier i.e. express the ratio of total/direct needs of production to meet certain demand levels. Any column of the inverted matrix [i.e. $(i\ (1-A)^{-1}]$ will give the production needed in all sectors of the economy for producing one unit of final demand for that production. The

diagonal values will give the production needs in all the sectors, for producing one unit of final demand of the same sector including self consumption.

Algebra of the Input-Output Model:

In matrix form, with n sectors:

$$X = (1-AR)^{-1}[\lambda cPC + \lambda iPI + \lambda giGI + \lambda ei\alpha TE + \lambda eni(1-\alpha)TE - \lambda mc$$

$$\theta TFM - mi\beta TFM] \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

When,

X = Gross output of any year (Endogenous Variable)

[A] = Input output coefficient matrix net of imported intermediate imports.

$[\hat{R}]$ = A diagonal matrix given the ratio of import substitution in the intermediate sector along the diagonal.

$\overline{PC}$, $\overline{PI}$, $\overline{GI}$, $\overline{TE}$, $\overline{TFM}$ are Private consumption, private investments, government investments, total exports and total final demand imports (consumption and capital goods imports including net services) derived for any year from the Macro econometric model.

c, i, gi, ei, eni, mc, mi are normalized allocation vectors for private consumption, private investments, Government Investments, Exports to India, Exports to Non-India, imports of consumer goods & imports of capital goods respectively.

6. α, is the ratio of total exports going to India, θ is the ratio of consumer goods imports to total final goods import; β is therefore ratio allocated to the capital goods imports at the base year (in the input output table year).

(2) Xkv = GDP at factor cost ..... (2)

When x = Gross output vector transposed (Row)
k = scalar parameter (endogenous)
v = value added to gross output vector
GDP = GDP estimated at factor cost in the Macro-econometric model.

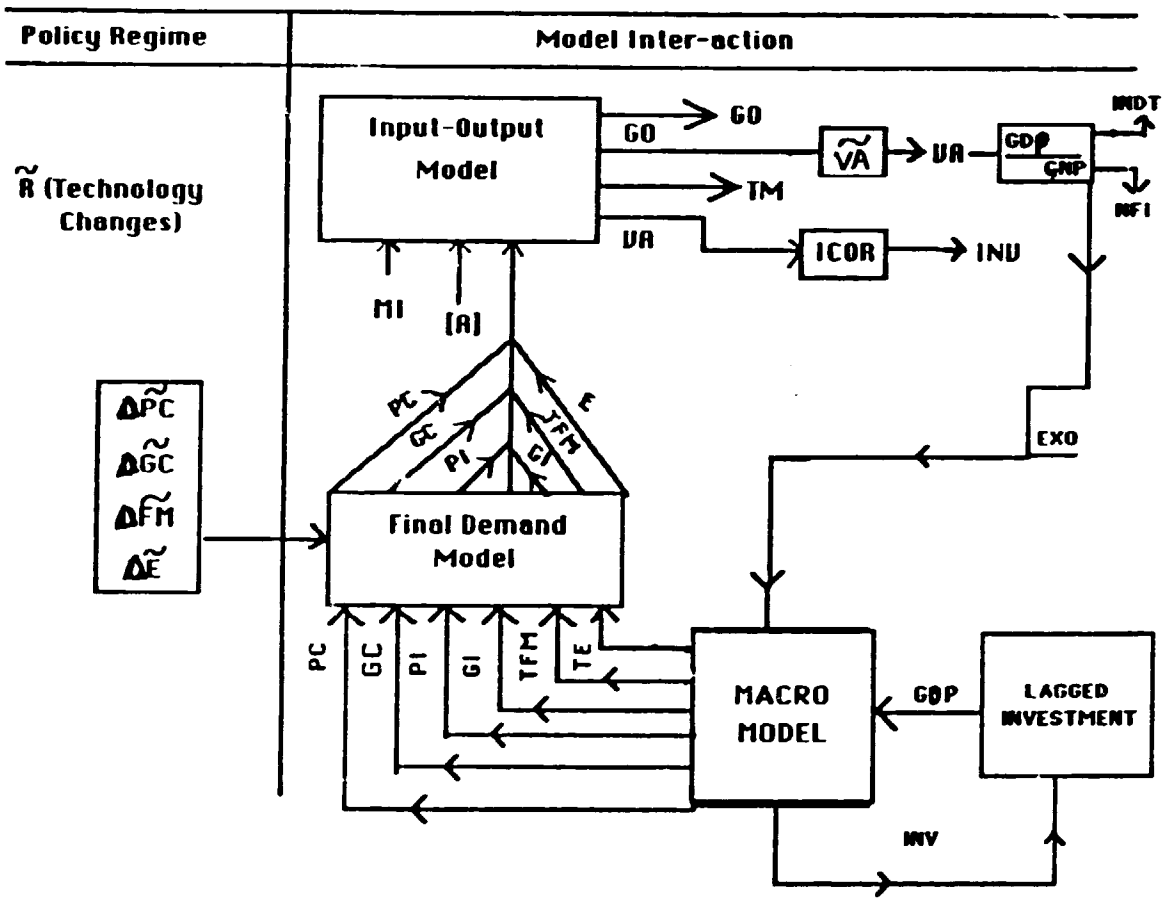
(3) GDP mk = GDP + INDT ..... (3)

(4) Intermediate import vector = [M]X ... (4)

3.3 Integration of the Macro Model with the Input-Output Model

A Schematic Diagram is presented below to explain the inter relationships between the macro and input/output model used. The macro model focusses more on the supply side of the economy and therefore, it throws light on whether stipulated targets in aggregative term can be achieved given macro supply constraints of the economy. On the other hand, the input/output model gives in more detail, the implications of various demand components on 39 sectors of the economy. It particularly focusses on the implications of adopting import substitution and/or export promotion strategies taking into account simultaneously their implications on long term investment planning. The main advantage of such simultaneous exercises is that they help to bring together both supply side and demand side to ensure necessary equilibrium in the economic plan. To achieve this, the macro-economic scenario developed through the macro model is fed into input/output model so that overall consistency between demand and supply could be established.

INTEGRATION OF MACRO AND INPUT OUTPUT MODELS



Notations

~	=	Signifies Parameters
--	=	Signifies Scalar Values
¦ ¦	=	Signifies Vectors
[ ]	=	Signifies Matrix (n * n)
GDP	=	Gross Domestic Product
INV	=	Investments
PC	=	Private Consumption
GC	=	Government Consumption
PI	=	Private Investments
GI	=	Government Investments
TFM	=	Final Demand Imports
TF	=	Exports
A	=	Input/Output Ratios
mI	=	Intermediate Imports
ICOR	=	Incremental Capital Output Ratio
VA	=	Value Added
GO	=	Gross Outputs
INDT	=	Indirect Taxes
NFI	=	Net Factor Income
R	=	Technology
Exo	=	Exogenous

3.4 Sequencing of Models' Integration

The macro model (which has already been described) throws out private and government consumption, private and government investments, exports and imports, GDP as some of the many endogenous variables, all in scalar terms.

These variables then enter the Final Demand Model which, in simple language, means a conversion mechanism of the macro scalar variables into vectors, covering 39 sectors of the Input-Output classifications adopted. These conversions can be done by sophisticated methods using extended Linear Expenditure System (LES) or by simply adopting base period normalized allocation coefficients. In the present exercise, the second method has been adopted so far as the reference run is concerned. In the alternative policy runs, given different policy regimes, these allocation coefficients have been exogenously changed. The details of these changes are explained in Chapter 7.

These vectors then enter into the Input Output model. In the present exercise, the [A] is an import matrix net of intermediate demand which separately interacts with [mI] matrix. The input-

output model is essentially a Leontief inverse and works as a reduced form equation structure.

The outputs of this model come out as a set of gross output vectors. These then get transformed into a vector of value added by passing through value added (VA) parameter matrix (diagonal). Similarly these derived value added vectors pass through another diagonal [ICOR] matrix to provide estimate of gross and fixed investment vectors. A similar method has been applied to derive employment vectors.

The derived value added (VA) generates revised GDP and GNP. If this derived GDP differs significantly from the GDP obtained through the macro model, then it enters back into the macro model and the whole interaction continues until the GDP derived from macro model and that from input - output model almost converge. In the convergence process, the value added ratios can also be used as endogenous equilibirating variables.

3.5 Simulations

In the macro model, various alternative scenarios have been developed. The results of one likely scenario which shows 4.5 percent GDP (at factor cost) growth rate over the period 1990 to 1995 has been used as inputs to compute the reference run in the input/output model. The technique followed to make various alternative runs in the input/output model is presented below for the purpose of illustration.

3.5.1 Reference Run

i. First of all, it is necessary to take reference run simulation from macro model (growth of GDP = 4.5 percent at factor cost). It gives PC, PI, GI, TE, TFM. Subsequently, the X's (gross outputs), V's (value added), intermediate consumption and capital goods imports, exports to India and non-India are calculated into detailed 39 sector basis by sources over the years.

ii. For seven sectors ICORs derived from macro model have been used to derive investment basket.

iii. Taking the ICORs derived from detailed manufacturing sector [estimated as It/Ot multiplied by (1+r)/r for any sector, when I = total investments, O = gross outputs, r is the rate of growth over observed historical period], the detailed manufacturing investment growth over the projection period has been estimated.

iv. Based on employment co-efficients calculated from input/output table, the detailed sectoral employment figures have also been obtained.

3.5.2 Alternative Simulations

Alternative simulation runs were run against the reference run solutions. It was necessary to do so for examining the precise implications of alternative policies on total output, value added, investment, employment, trade etc. The input/output model has been presently employed to undertake sensitivity analysis on four alternate development strategies: (a) import substitution (b) export promotion (c) a combination of both and (d) poverty alleviation. These exercises have helped in assessing the outward vis-a-vis inward looking development strategies in the light of comparative advantages of the Nepalese economy.

Chapter 4

DATA BASE OF THE MACRO MODEL

4.1 Introduction

The most important prerequisite to any modelling exercise is an adequate data base which provides the different parameters of the national economy. The poor data base and lack of sufficient experience and expertise have been serious deterrents in the past to the construction of macro models of the Nepalese economy. This, coupled with ad hoc procedures adopted in decision making without any rigorous analysis, did not provide the stimulus to take up modelling exercises. Nonetheless some individual efforts were made in the past to construct such quantitative models (Khanal, 1988, Khanal and Sharma, 1989). They, however, lacked sufficient disaggregation and detailed simulation exercise.

The macro model presented in the previous chapter was specified broadly taking into account the availability of data. Therefore, in most of the equations only one or two explanatory variables were included. In some cases, suitable proxy variables were considered in the absence of data of reliable quality.

In spite of these limitations, it has been possible to cover both the demand and supply side of the economy at a reasonably disaggregate level and over time. The latter was achieved by the construction of necessary time series data.

The trade data were disaggrated in such a way that they could broadly represent the consumption, intermediate and capital goods separately. Besides appropriate export and import price indices were constructed in order to use them in deriving trade and foreign aid figures at constant prices.

As employment plays a significant role in alleviating poverty as well as raising living standards of the people, an attempt was also made to construct employment series. For this

purpose, recourse had to be made to a variety of data sources. Indeed, this was found to be one of the areas where data base is extremely poor. Though it has not been possible to examine the extent of underemployment, the series constructed made it possible to derive average employment co-efficients for the major sectors of the economy. These data series, thus, have helped not only to identify the sectors where the data gap on employment is serious but also to compare the likely growth of employment vis-a-vis the addition to labour force.

Some salient aspects of the procedures adopted for data assembly for the macro model are discussed in the following paragraphs.

4.2 Data Sources and the Time Period Covered by the Study

The main sources of data for modelling are generally the secondary data resources. Thus, for the purpose of this study data has been derived largely from Central Bureau of Statistics, Nepal Rastra Bank, National Planning Commission, Ministry of Finance, Agriculture Marketing Department, Trade Promotion Center and other national and international institutions.

For the construction of macro model, time series data over a sufficiently long period are always preferred. Such data series are necessary especially for unbiased and efficient estimation. But because national accounts data estimated before 1975 had poor coverage and also the methods used before 1975 and after 1975 were not comparable, no long time series data on foreign trade, prices, labor force and employment etc. could be generated. Therefore, the model had to limit itself to only the period 1975 through 1988.

4.3 Methods used to Minimize the Data Gap Problems

In spite of more recent data [illegible] in the construction of macro model, some data gaps still rem[illegible] when the structure of the macro model was finalized. The problems manifested themselves in the course of estimating production as well as

employment functions. The data on prices available from secondary sources also could not fulfill the data requirements. This was also true in case of government accounts and trade statistics. The methods used to construct some important data series are briefly explained below.

4.3.1 Production Functions and Capital Stock variables

The model has a pronounced supply orientation and hence it specifies eight production functions on lines similar to sectoral value added estimates in national accounts. At the same time, care has been taken to specify the production functions in such a way that would facilitate the estimation of sectoral incremental capital output ratios. However, because of the inadequacies of the existing data base, it was not possible to derive sectoral capital stock variables. To get over this problem, cumulative investment variables have been estimated as proxies to capital stock variables by assuming certain life time of assets in each sector. This method has been commonly utilized by model builders in other developing countries. From these series, it becomes possible to estimate the capital productivity fairly easily.

However, these data are still insufficient for the purpose of forecasting and simulation exercises. In order to examine the implications of different patterns of sectoral investments, it is necessary to take into account the life of the existing capital stock in different sectors and to construct replacement capital series for each year. In the absence of data on existing capital stocks in different sectors, the sectoral investment variables for forecasting purpose were derived by substracting the replacement values from sectoral investment figures obtained from the model.

4.3.2 Estimation of Sectoral Employment Series

An earlier mentioned, data base was found to be extremely poor in the area of employment. In the absence of systematic periodic surveys, no time series data on sectorwise employment is available. The only source which is commonly used is the

periodic population census data. But even in this case, no consistent and comparable data series are available. For instance, a comparison of population census of 1971 and 1981 indicates a declining trend in construction and industrial employment. However, it is generally known that these are the sectors in which there has been a significant increase in employment. Therefore, the census results on sectoral employment do not always provide a correct assessment of the factual situation and therefore, cannot be made the sole basis of computing inter censal growth rates. The discrepancy appears to be due to different classifications adopted in 1971 and 1981 censuses. For instance, contrary to 1971 census, 1981 census gives a non-classified employment figure which is comparatively very high. Therefore, some sectoral adjustments were made on the basis of IDS study and recent NRB household survey. Although these series enabled estimation of preliminary employment coefficients but they need further revision and updating. Particularly for the purpose of preparing long term human resource development and manpower planning, a detailed employment survey will be found necessary.

4.3.3 Trade Statistics and Foreign Trade Sub-model

Nepal Rastra Bank regularly publishes trade statistics on the basis of SITC classifications. However, these classifications do not exactly match with the consumption, intermediate and capital goods categories. Classification along these categories is necessary to examine both short and long term implications of foreign trade on the economy. In order to make SITC classifications conform to these categories, suitable classification converters were generated. For instance, 0 to 1 categories were considered as consumption goods, 2 and 4 were treated as intermediate goods and SITC group 7 was considered as capital goods category. Altogether all SITC groups were brought into five categories including fuel and manufacturing goods.

4.3.4 Government Accounts

Though national accounts data give information on government consumption and investment, they do not exactly match with economic classification of the government expenditure. The problem emerges because of non-availability of up-to-date information on government transfers. Therefore, an indirect approach was followed to derive those transfers which were estimated by substracting consumption and investment components from total government expenditure. This also faciliated estimation of aggregate saving of the government.

4.3.5 Price Indices and Time Series Data at Constant Prices

National accounts data provide only GDP deflators for various years. Additionally, separate estimates of both agricultural and non-agricultural deflators are furnished in national account estimates. Nepal Rastra Bank, on the other hand, publishes Urban Consumer price index regularly. These indices are not sufficient to construct time series data at constant prices. For instance, for building up investment series at constant prices it is necessary to have a separate price index for investment goods. No such index exists and therefore, it has not been possible to derive the investment deflator. Hence, agricultural and non-agricultural deflators had to be used for estimating sectoral value added and investment figures. Likewise for saving and consumption series, Urban Consumer price index was utilized.

In Nepal, no attempt has been made to construct export and import price indices. But such indices are available from World Bank publications. No detailed information, however, is available from those documents regarding the methods followed to compute them. In the absence of other sources, these indices have been utilized to deflate foreign aid and trade data. All the data series are at 1986/87 prices. They have been brought at 1986/87 prices mainly to make macro model data comparable with the input/output model.

The discussions in the previous paragraphs also suggest the directions in which improvements would need to be made in data collection and presentation by different authorities, so as to improve data availability and reliability for future macro modelling exercises. More sepcifically, for time series analysis and macro modelling, data base and its reliability should be enhanced in the following areas:

a. For identifying Government savings, detailed analysis of Government expenditure on the basis of economic classification is needed. This task falls within the scope of CBS activities.

b. To facilitate resource planning, analysis of flow of funds in the economy is essential. For this purpose, consumption and savings by sector have to be estimated. This should be done jointly by Central Bank and CBS.

c. Also, computation of investment by both destination and origin is an essential requirement for realistic estimation of ICOR. It also significantly helps the construction of dynamic models. CBS should attempt to estimate time series data on these lines.

d. CBS should attempt to work out realistic GDP deflators, particularly investment deflators.

e. A reliable set of Export-Import Price indices needs to be prepared to examine the price behaviour and terms of trade in the economy. For this purpose, it is necessary that Customs Data are compiled by the Customs Department both in physical and monetary terms.

f. It is also recommended that per unit prices are compiled by the concerned ministries for agricultural and industrial products (both wholesale and retail).

g. A comprehensive perodic survey is needed on employment by sector with detailed classifications in terms of unskilled, semiskilled, skilled and professional catagories involved in production and service industries in order to assess the employment trends in the economy.

h. Export - import data series should be developed by Customs Department and/or Trade Promotion Centre and/or Central Bank

in a manner as to provide clearly the required data on exports and imports of consumption, intermediate and capital goods separately. To reduce the discrepency between data furnished by NRB, TPC and CD, a uniform methodology of data collection and presentation is highly recommended.

Chapter 5

DATA BASE OF THE INPUT/OUTPUT MODEL

5.1 Introduction

While the poor data base and non-availability of reliable time series data presented several difficulties, as mentioned in the previous Chapter, in the construction of the macro model, they were not less daunting in the construction of the input/output model. In fact the severity of the problem explains why Nepal has not been able to construct an operationally useful input/output table in the past for planning purposes. Though a small and highly aggregative input/output table was prepared in the past (Khanal et al 1988), a number of estimation problems were encountered and therefore, the model could not reproduce the historical data satisfactorily.

It has, therefore, not been an easy task to construct a 39 x 39 input/output table as a part of the present exercise. To do so has meant not only a great deal of examination of the available secondary data sources, but also conducting mini-surveys to generate primary data to the extent possible.

Since the main objective of this exercise is to apply the model for the purpose of industrial planning, efforts were made in the construction of the Input/Output table to make the industrial sector more disaggregative. In view of the availability of successive manufacturing census results, this in itself was not thought to present any major problems. In deciding the level of disaggregation in other sectors, a number of factors were considered. Obviously, one factor that could not be overlooked was data availability. The other factors taken into account were homogeneity of output and input, the scope for export oriented and import substitution activities and the linkage (both backward and forward) of one activity with another. For example, with a view to examine the linkage between major cash crops (as raw materials) and manufacturing industries,

important cash crops were separated from other non-food commodities.

In the absence of sufficient and reliable data to estimate the cost structure of various sectors, several sources had to be utilized including the results obtained through small surveys undertaken by the study team. To supplement, the Profit and Loss accounts as well as balance sheets of both private and public enterprises were analyzed with a view to arriving at the cost structure of certain sectors. Because of the varied sources from which data has been collected, the results should be regarded as preliminary and far from conclusive. Consequently, these need to be further updated and revised. For instance, the cost structure of important sectors such as construction, transportation,real estate, dwelling, social and personal services of private non-profit institutions, trade, hotel and restaurants which was estimated partly on the basis of the results of such surveys do need a second look.

Likewise, the study team faced considerable difficulty in deriving tax rates and reclassifying data on imports of goods and services to conform to selected sectors of the economy. In particular, problems were encountered in separating intermediate inputs from consumption and capital goods. The computation of consumption separately for each commodity has not been possible since national account estimates on consumption are derived residually by substracting investment from gross national product and net imports. This procedure makes it virtually impossible to estimate the consumption coefficient of each sector by origin and hence, the discrepancy between output and input of each sector could not also be examined. In the absence of such detailed information from national accounts data, the private consumption figures had to be derived residually for the purpose of the input/output table. This is not an altogether satisfactory approach. However, in the absence of other better alternatives, this procedure had to be adopted, cross checked to some extent with the Nepal Rastra Bank Household Survey data.

5.2 Input/Output Table at Producer's Prices & Related Data Requirements

It is possible to construct the input/output table at both purchasers' prices and producers' prices. Since all monetary transactions are valued at either the prices received by the producers or the prices paid by the purchasers, the table can be constructed either way. In the normal course, however, transactions are recorded in terms of prices paid by the purchasers and therefore, input/output tables can be constructed more easily at purchasers' prices. The difference between purchaser's price and producer's price comes from trade and transportation margin. As these margins differ significantly from time to time, input/output tables based on producers' prices are preferred to those based on purchasers' prices. Input-Output tables prepared at purchasers' prices suffer in general from the following drawbacks:

i. The input/output table prepared at purchasers' prices portrays the trade and transport cost twice; once as the output of the producing industry and again the input of the same industry from trade and transport sector. The input/output table constructed at producers' prices is free from this drawback.

ii. The input structure quoted in value terms can be directly interlinked with the physical units under producers' pricing system.

iii. As stated above input coefficients which are estimated at purchasers' prices vary significantly. Therefore, only by segregating marketing and transportation costs can input coefficients remain stable, reflecting primarily the prevailing technology thus facilitating more realistic projections.

In view of these salient features, the study team has prepared the input-output table at producers' prices. For this sectoral coefficients of both trade and transport margins were calculated in standard matrix form.

5.3 Sources of Data:

In view of the availability of manufacturing census, the year 1986/87 has been chosen as the base year of the input/output table. Also some information on construction and transport activities is available from CBS surveys. Moreover, studies on production costs and returns in agriculture sector are also available for various years from Marketing Department. Further, the extensive household survey carried out by the Nepal Rastra Bank in 1983-84 also provides considerable information on income, employment and consumption pattern.

All these sources were made the main basis for obtaining necessary data for the construction of the input/output table. But as the work proceeded, the team quickly realized that there were several data gaps. Thus, for example, the manufacturing census could not fully meet the data requirements of the input-output table with respect to industrial activities. A significant lacuna is that the census has not covered the detailed cost structure of different industries. Cost information pertaining to private services, transportation, trade and other similar non-industrial costs such as rent, audit fee, advertisement etc. were not available in the census data.

Hence, non-industrial costs had to be estimated independently on the basis of Profit and Loss accounts of various enterprises and subsequently verified with the results of Annual Survey of Industries of 1987/88 which fortunately includes data on non-industrial costs.

For other sectors of the economy, there are not even census data (as for the manufacturing sector) to fall back upon. Hence, totals as reported in national accounts have been utilized so as to reconcile estimated figures on cost structure of different sectors with the national account value added figures. For the government sector, data available from Ministry of Finance and Auditor General's Report were analyzed, which were by and large

sufficient to obtain the cost structure of government activities.

A brief explanation on data sources and methods of estimation is given in the following paragraphs:

5.3.1 Agriculture, Livestock and Fisheries

Detailed cost data on agriculture sector are available from Farm Management and Annual Production and Cost Surveys undertaken by Agriculture Marketing Department. Latest information (1986/87) available in cost and production surveys has been fully utilized. Cost and production surveys data together with Farm Management Studies were found sufficient to examine the cost structure of the agriculture sector. On the other hand, an analysis of cost data pertaining to forestry and livestock showed that available data was insufficient to make realistic estimates of cost coefficients. The Master Plan on Forestry and Energy sector also could not satisfy the data requirements. Therefore, for these two sub-sectors (forestry and livestock), information from various other sources had to be assembled. Information available from Agricultural Projects Services Centre (APROSC) and Integrated Development Systems (IDS) studies were analyzed. In addition, a small survey was also undertaken.

5.3.2 Industrial Sector

Data for the various industrial sub-sectors were mainly obtained from the manufacturing census of 1986/87. Information relating to output, return to labour, gross fixed investment by source and capital stock by major industrial activities was available from this census. As mentioned above, this was not, however, adequate to derive the complete input and output structure. The census excludes management and administrative costs viz. advertisement, audit and legal fees, telex and telephone charges, office rent and also depreciation and sales and distribution costs. Further, census results have generally proved incomplete in view of the fact that non-industrial income is also excluded from the output. To fill this gap, data contained in Annual Survey of 1987/88 and balance sheets, and

Profit and Loss accounts of various industries operating both in private and public sector were utilized. Some difficulty was also experienced in the computation of tax rates as per input/output sectors. This information is not readily available from the manufacturing census. Hence, a detailed exercise was undertaken to estimate them from data collected from the Finance Ministry on tax rates and revenue collection. This helped to meet broadly the data requirements and to derive value added at factor cost.

5.3.3 Mining and Quarrying

The contribution of mining to the total economy is as yet insignificant. At the same time, mining and quarrying activities are scattered across the country in an unorganized manner. Therefore, it has not been possible to collect consistent output and input structure data from a single source. Necessary information was collected from various sources and they were reconciled with national accounts data.

5.3.4 Construction

Construction sector also consists of heterogeneous activities ranging from construction of residential and non-residential buildings to engineering works, repairs and demolition, construction of dams, roads and airports. The cost structure of one activity is significantly different from that of other activities. Further, in view of the fact that a substantial share of building construction is undertaken in rural areas, the cost structure of building construction is also not uniform. Hence, a uniform procedure for all construction activities cannot be followed. Based on the same methodology as adopted in national accounts, a small sample survey was carried out to derive the cost structure of different construction activities and this information was further verified with CBS. The cost structure thus derived is slightly different from national accounts estimates. This is to be quite expected in view of the fact that CBS has continued to base its estimates on cost structure data developed more than a decade ago in 1976-77.

5.3.5 Electricity, Gas & Water

Data on input structure of electricity, gas and water were obtained from the balance sheets, Profit and Loss accounts of Nepal Electricity Authority, Drinking Water Corporation and Gas Companies.

5.3.6 Trade, Hotel and Restaurant

In the input/output table, wholesale and retail trade has been separated from hotel and restaurant sector. Cost structures of these activities were analyzed from balance sheets, Profit and Loss accounts and other financial statements of trade and hotel establishments operating in public and private sector. Cost structure of a number of small hotels, restaurants, travel and trekking agencies was also examined. For hotel and restaurant sector the tourism study conducted by Nepal Rastra Bank (NRB) was also utilized.

5.3.7 Transport and Communication

Various sources of information were used to estimate the input structure of transport and communication sectors. At first, balance sheets, Profit and Loss accounts and other information on transport and communication sectors operating both in public and private sectors were examined. The data so collected was still insufficient to provide detailed cost data for taxis, rickshaws, etc. Therefore, additional information from CBS survey was drawn upon to estimate cost structure of various modes of transport. In spite of this, it was not possible to derive the cost structure of pull-carts and portering. Further, the detailed cost structure of other modes of transport e.g. horse, yak etc. used in different parts of the country could not be estimated separately. Therefore, these activities have been excluded though in aggregate they are captured in the total value added estimates given in national accounts.

5.3.8 Banking, Real Estate and Dwelling

For the banking sector relevant information from Nepal Rastra Bank and other commercial banks, Securities Exchange

Center and insurance companies was obtained and examined. Since finance and insurance business is operating with a strong institutional base in the public sector, no major data problem for these sub-activities was encountered. Some difficulty was, however, faced in the course of estimating cost data of real estate and dwelling activities. This was natural in view of the scattered nature of these activities all over the country. Data problem in real estate and dwelling sector was resolved through small surveys conducted by the study team in both rural and urban areas.

5.3.9 Indirect Taxes and Government Services

In both macro and input/output models, government sector has been treated separately in order to delineate the critical role of government in Nepal's future development. Although the expenditure estimates are presented in the budget broadly in conformity with economic classification, actual expenditure is accounted and reported only on the functional basis in government documents. This makes the economic analysis of government expenditure very difficult. Though the Central Bureau of Statistics (CBS) estimates on government accounts are available, they do not provide detailed information on government purchases. Therefore, a detailed analysis of the budgetary estimates of Ministry of Finance (MOF) and Auditor General's report was undertaken. This analysis helped to separate both current and capital expenditures. As a result, not only intermediate inputs purchased from various industries could be estimated but gross fixed investment by source could also be derived. Besides, this analysis also helped to examine the saving position of the government in addition to facilitating the separation of the transfer component from other current expenses which have been rising fast in recent years. To present tax rates of both intermediate inputs and final demand components in the input/output table, necessary information from tax, excise and tariff departments were collected and analyzed. This analysis made it possible to derive tax rates by each industry included in the input/output table.

5.3.10 Private Services

Private services comprise heterogeneous activities such as privately run educational and health institutions, individual medical practitioners, tutors, professional and legal services, household domestic servants, dry cleaning and laundry services, hair dressers, tailors, blacksmiths etc. The input structure of these diverse activities is not identical. Information regarding the educational institutions was collected from the institutions concerned. The input structure of most of the service industries was collected from the tax department. Also for some activities, small surveys were conducted.

5.3.11 Foreign Trade

Reliable data on foreign trade is necessary to analyze in detail not only the cost structure but also to explore the possibilities of promoting export oriented and import substitution industries in the country. Such industries may be producing intermediate goods as well as final products. Also from the point of view of separating domestic and foreign cost components a detailed analysis of foreign trade is necessary. Taking all these factors into account, a detailed analysis of trade statistics obtained from Custom Department was undertaken. This has helped to identify imported input components. For industrial activities, the import coefficients derived from annual survey was also utilized to make data comparable and consistent. For other sectors, information available from trade statistics was utilized.

5.4 Consolidation of Data Base and Estimation of Input/Output Table

The input/output table has been disaggregated into 39 sectors of the economy. This disaggregative table has been constructed on the basis of cost structure data computed on lines discussed above. Except for industrial sector whose intermediate and value added components are based on census results, other sectors' control totals i.e. value added have been taken from

national accounts data. The cost structure, on the other hand, has been independently estimated. Likewise, among the final demand components, investment, exports and imports have been derived from national accounts data and foreign trade and balance of payments statistics. As noted above, private consumption figures for each sector have been obtained residually i.e. substracting intermediate input and other final demand components from total output of each row. In this way, the total output and input of each row and column match one another, a prerequisite to ensuring input/output balances. In most cases, it has been found that the cost structure data is comparable to similar estimates made for other developing countries by national and international organizations.

The first part - 39 x 39 matrix - represents the flow of domestic materials and services i.e. inter-industry transactions between specified economic activities (Table 5.1). The second part of the table represents the import of raw materials and services made by each economic activity. The import of materials and services from India is separated from imports from third countries, as the two streams have different economic implications. The third part of the table deals with the absorption of primary factors in production process i.e. value added components comprising compensation of employees, indirect taxes net of subsidy (domestic, India and third countries presented separately), depreciation and operating surplus. The final demand in the table represents private consumption, government consumption, private fixed investment, government fixed investment and exports (shown separately to India and third countries). The last rows and columns of the table represent the total output of each sector. In a nutshell, the input/output table has been presented in rows and columns in the following manner.

Total intermediate demand + Private consumption + Government consumption + Private capital formation + Government capital formation + Exports (net of final demand imports) = Total domestic input purchase + Intermediate

imports + Value added.

Put differently,

Payments for total input for materials and services + Wage payment for labour services + Indirect taxes net of subsidy + Depreciation on fixed investment and operating surplus = Total gross output

As noted above, the input/output table is presented at producers' prices.#

The input/output table comprises 39 sectors; 7 for agriculture and forestry, 24 for mining and manufacturing industries, and one each for construction, gas, electricity and water, hotel and restaurant, transport and communication, wholesale and retail trade, banking, real estate and dwelling, government services and other services. The broad composition of above sectors is as follows:

1.	Food Crops	Paddy, Wheat, Barley and All Types of Food grains
2.	Jute Crops	Jute
3.	Tobacco Crops	Tobacco
4.	Sugarcane	Sugarcane
5.	Other Cash Crops	Pulses, Spices, Fruit and Vegetables etc.
6.	Livestock and Fisheries	All Livestock and Fisheries Products
7.	Forestry	Forest

The value added figures for manufacturing sector given in input/output table (Table 5.1) for the base year 1986/87 will not be found identical to the Manufacturing Census data furnished by the CBS. The difference arises on account of the fact that the value added figures reported by the CBS exclude non-industrial income and expenses. In some cases they do not also capture the unorganized sector fully because the coverage of the census excludes enterprises employing less than 10 persons and not using power.

8. Mining & Quarrying	All Mining and Quarrying Activities
9. Dairy Products	Dairy
10. Canning	Canning and Preserving of Fruits and Vegetables
11. Other Food Products	Bakery, Animal Feed Products, Vegetable Ghee, Noodles, Spices Grinding, Dalmoth and Snacks Products and All Other Food Products
12. Grain Mill	All Grain Milling Activities of Food, Oil etc.
13. Tobacco Manufacture	Cigarette and Bidi Products, Chewing Tobacco and Allied Products
14. Beverages	Distillery, Rectifying and Blending Spirit, Alcoholic and Wine Products, Beer Products, Soft Drinks and Carbonated Water
15. Tea and Coffee	Tea and Coffee Packing and Processing Industries
16. Sugar and Confectionery	Sugar and refineries, biscuits, Cocoa and Confectionery Products
17. Carpets	Carpets and Rugs
18. Textiles	Cotton Spinning, Weaving Processing and Finishing, Textiles, Knitting Mills, Other Textiles
19. Garments	Non Wearing Textile Goods, Wearing Apparels, Readymade Garments
20. Jute Goods	Jute Processing, Jute and Other Coarse Fibres
21. Footwear and Leather Products	Footwear Products of all types, Leather and Leather Products
22. Cement	Cement, Lime and Plaster

23. Mineral and Fuel Products	Structural Clay Products, Bricks, Roofing Tiles, Wall Tiles and Other Mineral Products Including Fuel
24. Pharmaceuticals	Drugs and Medicines of All Types Including Herbs Processing and Ayurvedic Medicine
25. Chemicals	Soaps and Detergents, Chemical Products Including Lubricating Oil, Bitumen, Fertilizer, Paints, Batteries etc.
26. Wood and Furniture	Wood Furniture and Fixtures, Saw Mills and Wood Mills, Wood Cork Products
27. Paper and Printing	Paper and Paper Products, Printing, Publishing and Allied Industries
28. Plastic and Rubber Products	All Plastic and Rubber Products including PVC Cables, Household Plastic Utensils, Plastic Pipes, Galvanized Rubber Sheets, Foam Mattresses etc.
29. Basic and Fabricated Metals	Metal Furniture and Fixtures, Structural Metal Products, Utensils Made of Brass, Copper, Stainless Steel, Aluminum Products etc.
30. Electric and Electronic Goods	Consumer Electronic Goods such as Television and VCR Sets, Radio, Communication and Office Equipment and All Electric Apparatus
31. Industries Not Specified Elsewhere	All Industries Not Falling in the Above Categories
32. Construction	All Construction Activities
33. Gas, Electricity and Water	Gas, Electricity and Water
34. Hotel and Restaurant	Hotel and Restaurants Including Trekking and Tourism Activities
35. Transport and Communication	All Modes of Transportation and Communication Activities
36. Wholesale and Retail Trade	All Types of Trading Activities

37. Banking, Real Estate & Dwelling	Banking, Real Estate & Dwelling Activities
38. Government Services	Service Activities of General Government
39. Other Services	Private and Personal Services Activities

5.5 Data Gaps

In spite of continuous efforts made to expand the data base and update the information, the estimates in some sectors are based on weak data base. For example, this is true in the case of forestry sector. Although information available from APROSC and IDS studies was partly used, it is still necessary to obtain more detailed information on this sector. Similarly, it has not been possible to get adequate information on livestock, mining and quarrying activities. Surprisingly, even in sectors like construction, transport and communication adequate information on cost structure is not available. Likewise, information on trade, real estate, dwelling, private services, hotel and restaurants is also not available to an adequate extent. Even the national accounts data are prepared on the basis of a number of bold assumptions. In some cases the estimates are made on decade old cost coefficients. No attempt has been made so far to estimate the tax rates by sectors.

It is not possible to derive investment data by source on the basis of existing national accounts data. As a result, investment by source could be estimated only at the aggregate level. Consequently, the capital flow matrix could not be constructed and the model had to remain static.

Major data gaps could be identified when an attempt was made to estimate separately the input components of various sectors in terms of domestic and imported inputs. Though the trade figures are available in some great detail, these could not be readily brought into an input/output framework. Likewise, a major data gap was experienced in estimating the consumption vectors for each sector of the economy. In the absence of these data, it is

not possible to estimate the saving generated by each sector and to cross check the flow of funds from one sector to another. This information is of particular importance to a country like Nepal needing rigorous resource planning. For further revision, updating and standardization of input/output table, it is essential to fill the gaps in information as pointed out above. This should be systematically attempted through central statistical organizations such as CBS to ensure better planning and policy analysis in future. Specifically, this task is suggested to be performed in the following ways.

a. CBS should attempt to estimate both output and value added for sectors other than manufacturing industries with a reasonable degree of disaggregation so that the construction of I/O table can be institutionalized. For this purpose CBS should try to update cost structure of various sectors regularly by undertaking periodic mini surveys.

b. Also from the point of view of estimation of I/O table at producers' prices reliable information on transport and trade margin for different sectors is required. Such information should also be collected and updated by CBS regularly.

c. There are certain sectors which need immediate attention, especially for updating their cost structure. These sectors include Mining, Forestry, Livestock, Transportation. Construction, Hotel, Trade, Real Estate, Dwelling and Private Services. Separate mini surveys for all these sectors are needed before attempting to update I/O table. In such surveys special consideration should be given to acquire information on domestic and imported inputs separately.

d. CBS should also try to estimate tax rates by sector. For this, a regular flow of information from Customs Department is needed. Specially the physical units of both exported and imported commodities have to be regularly recorded by Customs Department. Also a scientific method of data preservation should be devised so that the information collected could be utilized not only to compute effective

tax rate by commodity but also to compute export - import price indices.

e. For the purpose of developing consumption sub-models and to be able to follow standard methods such as LES, CBS should make a beginning in analysing the information contained in Household Surveys conducted by NRB. This may help to identify the discrepency between CBS estimates made residually and actual information gathered through field surveys. It will also help to update the I/O table which at the moment, is based on residual method adopted by the CBS.

f. Last but not least, a system has to be developed by CBS to undertake periodic surveys specially taking into account the data gaps as noted above for data reliability and adequate coverage.

Table 5.1: Input-Output Table
(Base Year 1986/87)

S.N	Sectors	Food Crop 1	Jute 2	Tobacco 3	Sugarcane 4	Other Cash Crops 5	Livestocks and Fisheries 6	Forestry 7	Mining and Quarring 8	Dairy Products 9	Canning 10	Other Food Products 11	Grain Mill Products 12
1	Food Crops	1121374	0	0	0	0	973810	0	0	0	0	0	3892531
2	Jute	0	2286	0	0	0	0	0	0	0	0	0	0
3	Tobacco	0	0	393	0	0	0	0	0	0	0	0	0
4	Sugarcane	0	0	0	19192	0	0	0	0	0	0	0	0
5	Other Cash Crops	0	0	0	0	261167	0	0	0	0	5716	272875	357784
6	Livestocks and Fisheries	2622214	20543	11006	16358	1165563	0	0	0	123745	0	0	0
7	Forestry	0	0	0	0	0	42202	580365	0	164	62	4893	1024
8	Mining and Quarring	0	0	0	0	0	0	0	29995	0	0	0	0
9	Dairy Products	0	0	0	0	0	0	0	0	32	23	773	516
10	Canning	0	0	0	0	0	0	0	0	0	0	0	0
11	Other Food Products	0	0	0	0	0	44312	0	0	0	0	0	0
12	Grain Mill Products	0	0	0	0	0	0	0	0	0	0	0	0
13	Tobacco Manufacture	0	0	0	0	0	0	0	0	0	0	0	0
14	Beverages	0	0	0	0	0	0	0	0	0	0	0	0
15	Tea	0	0	0	0	0	0	0	0	54	38	1288	860
16	Sugar and Confectionery	0	0	0	0	0	0	0	0	38	26	902	602
17	Carpets	0	0	0	0	0	0	0	0	48	34	1159	774
18	Textiles	0	0	0	0	0	0	0	0	0	0	0	0
19	Garments	0	0	0	0	0	0	36308	0	81	56	1932	1290
20	Jute Goods	0	0	0	0	0	0	0	0	86	60	2061	1376
21	Footwear and Leather Good	0	0	0	0	0	0	0	0	0	0	0	0
22	Cement	21655	0	1650	0	0	0	37106	11670	262	42	1006	6444
23	Mineral & Fuel Products	21655	0	1595	0	0	0	0	27231	292	62	1108	6480
24	Pharmaceuticals	0	0	0	0	0	0	0	0	107	75	2576	1720
25	Chemicals	0	0	0	0	0	0	0	0	93	13	263	1615
26	Wood & Furniture	5430	0	409	0	0	0	0	0	155	21	520	3551
27	Paper and Printing	0	0	0	0	0	0	34324	2797	540	80	2330	2047
28	Plastic & Rubber Products	0	0	0	0	0	0	0	0	0	0	0	0
29	Basic &Fabricated Metals	38635	0	2129	5567	0	0	25297	0	211	31	536	3214
30	Electric & Electronic Goo	0	0	0	0	0	0	0	0	93	13	264	1615
31	N.S.E Industries	0	0	0	0	0	0	0	0	0	0	0	0
32	Construction	0	0	0	0	0	0	0	0	0	0	0	0
33	Gas.Electricity & Water	1083	0	3664	1039	5001	0	35069	730	3559	94	14792	51322
34	Hotel & Resturants	0	0	0	0	0	0	12120	1138	91	64	2189	1462
35	Transport & Communication	653739	3150	3380	5330	226581	356409	229540	6770	7316	507	12645	74032
36	Wholesale & Retail Trade	327024	1396	2038	3576	136632	214920	67872	3254	378	41	1425	11947
37	Banking Real Estate & Dwe	824499	5739	4138	16372	297194	0	89114	38901	1211	229	2309	6916
38	Government Services	0	0	0	0	0	0	0	0	0	0	1664	5
39	Other Services	30207	506	217	645	2230	0	37553	29660	997	214	4704	11410
40	DOMESTIC INPUT PURCHASE	5745274	32520	30610	69189	2097368	1631653	1185069	161236	139746	7500	334174	4430235
41	IMPORTS	271276	263	963	3420	38541	0	23804	0	29213	10458	154958	125766
	INDIA	0	0	0	0	30065	0	23804	0	136	9665	43124	93962
	THIRD COUNTRY	271276	263	963	3420	8476	0	0	0	29077	793	111954	31804
42	TOTAL INTER. INPUT	6016550	32783	31573	72609	2135909	1631653	1208873	161236	168358	17958	489162	4556000
43	COMPENSATION OF EMPLOYEES	6339567	53393	32068	50472	2143999	4341000	949505	35000	19322	1599	31997	87413
44	DEPRECIATION	148104	718	257	788	71160	66000	181606	12000	20556	1977	9657	27224
45	INDIRECT TAX	153393	1152	509	2592	102201	595	59910	0	0	4024	25615	992
	DOMESTIC	153393	1152	509	2592	102201	595	48962		0	3064	8692	992
	INDIA	0		0	0			10948		0	960	3924	0
	THIRD COUNTRY	0		0	0					0	0	17919	0
46	OPERATING SURPLUS	[illegible]	1072	30165	97149	[illegible]	4274405	1636990	59000	26419	-1011	150522	706433
47	VALUE ADDED	[illegible]	[illegible]	[illegible]	151000	[illegible]	[illegible]	[illegible]	105000	[illegible]	6589	218792	[illegible]
48	GRAND TOTAL	[illegible]	86783	94573	223509	7875909	10313653	4036873	266236	226785	24546	707954	5378221

Table 5.1: Input/Output Table

(Base Year 1996/97)

S.N	Sectors	Tobacco Manufacture	Beverages	Tea	Sugar & Confectionery	Carpets	Textiles	Garments	Jute Goods	Footwear & Leather Goods	Cement	Mineral & Fuel Products	Pharmaceuticals	Chemical
		13	14	15	16	17	18	19	20	21	22	23	24	25
1	Food Crops	0	22597	0	0	0	0	0	0	0	0	0	0	0
2	Jute	0	0	0	0	0	0	0	44958	0	0	0	0	0
3	Tobacco	53520	0	0	0	0	0	0	0	0	0	0	0	0
4	Sugarcane	0	0	0	155219	0	0	0	0	0	0	0	0	0
5	Other Cash Crops	0	0	49731	0	0	69879	0	0	0	0	0	0	0
6	Livestocks and Fisheries	0	0	0	0	157176	0	0	0	172690	0	0	0	0
7	Forestry	594	3272	3395	4157	3567	3320	0	7	233	31	67859	6882	194936
8	Mining and Quarring	0	0	0	0	0	0	0	0	0	105224	27323	0	0
9	Dairy Products	19	473	10	5	12	75	18	64	125	20	136	8	61
10	Canning	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Other Food Products	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Grain Mill Products	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Tobacco Manufacture	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Beverages	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Tea	30	739	16	8	20	125	30	107	208	33	227	13	192
16	Sugar and Confectionery	21	44294	11	6	14	88	21	75	145	23	159	24869	71
17	Carpets	27	710	15	7	19	113	27	96	187	30	205	12	92
18	Textiles	0	0	0	0	19716	0	34869	0	0	0	0	0	0
19	Garments	46	1133	24	12	30	199	44	160	311	50	341	20	153
20	Jute Goods	49	1261	26	13	32	300	47	171	332	11730	354	22	163
21	Footwear and Leather Good	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Cement	430	530	230	1575	324	1601	401	506	350	353	1756	140	768
23	Mineral & Fuel Products	483	552	246	1595	344	1641	459	526	410	293	1916	156	803
24	Pharmaceuticals	61	1577	32	16	41	250	59	213	415	67	455	27	304
25	Chemicals	120	125	50	355	73	395	93	101	119	49	426	30	199
26	Wood & Furniture	240	259	110	801	147	791	225	251	179	125	903	64	388
27	Paper and Printing	16983	4109	76	697	958	1871	1205	1449	344	1724	519	290	1293
28	Plastic & Rubber Products	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Basic &Fabricated Metals	245	231	130	779	187	821	215	255	201	145	983	84	408
30	Electric & Electronic Goo	121	146	70	435	94	415	118	160	95	89	465	45	200
31	N.S.E Industries	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Construction	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Gas,Electricity & Water	4025	2311	145	2309	980	18346	2271	11249	2635	27970	3427	469	4009
34	Hotel & Resturants	52	1349	28	14	34	213	50	181	353	57	387	23	173
35	Transport & Communication	48304	10980	558	8829	5592	12552	9931	4009	4454	8041	2785	1123	9241
36	Wholesale & Retail Trade	772	218	119	378	773	1237	519	136	402	259	68	84	870
37	Banking Real Estate & Bue	7839	1070	220	1570	2258	4670	4072	1587	570	6795	4836	218	2126
38	Government Services	0	1	0	6	349	220	544	3	0	8	0	0	505
39	Other Services	6400	2276	379	5928	2054	19336	3042	1221	2012	15572	2915	254	5951
40	DOMESTIC INPUT PURCHASE	143396	190317	55622	186713	194795	138445	58365	67496	186830	179691	133156	34833	222809
41	IMPORTS	265043	25000	2641	5165	132094	417206	190145	3458	1515	75841	145625	103080	171465
	INDIA	258676	19931	96	484	9099	211477	170566	800	434	57569	137392	100150	102289
	THIRD COUNTRY	6367	5010	2545	4681	122995	205729	19579	2658	1031	18272	8233	2930	69176
42	TOTAL INTER. INPUT	403433	125337	58263	191878	326889	555651	248510	70954	188345	254532	263781	137913	394274
43	COMPENSATION OF EMPLOYEES	70373	20073	5425	36219	69810	80479	79291	57734	10418	29493	161191	40544	37555
44	DEPRECIATION	10159	9137	2357	12535	871	39799	1257	4458	3445	74126	3573	3184	14016
45	INDIRECT TAX	470235	194245	3505	29330	2509	221221	19331	4320	603	56541	2891	0	145081
	DOMESTIC	466044	177824	3505	29330	267	133390	3232	4320	603	56250	2891	0	130464
	INDIA	4241	16555	0	0	156	9800	6528	0	0	159	0	0	8551
	THIRD COUNTRY	0	97	0	0	2036	78031	7581	0	0	132	0	0	6065
46	OPERATING SURPLUS	120949	-22033	1129	47100	280600	-27405	403837	96755	47267	94962	99254	32511	-2979
47	VALUE ADDED	671765	201323	12415	125183	353789	314093	503716	163257	61733	255381	266909	76239	193772
48	GRAND TOTAL	[illegible]	326659	70678	317061	680678	869744	772226	234231	250078	509913	550690	214151	588047

Table 5.1: Input-Output Table
(Base Year 1986/87)

Sectors	Wood & Furniture 26	Paper & Printing 27	Plastic & Rubber Products 28	Basic & Fabricated Metals 29	Electric & Electronic Goods 30	N.S.E Industries 31	Construction 32	Gas Electricity and Water 33	Hotel & Resturants 34	Transport & Communication 35	Wholesale & Retail Trade 36
1 Food Crops	0	0	0	0	0	0	0	0	59795	0	0
2 Jute	0	0	0	0	0	0	0	0	0	109	0
3 Tobacco	0	0	0	0	0	0	0	0	0	0	0
4 Sugarcane	0	0	0	0	0	0	0	0	0	0	0
5 Other Cash Crops	0	0	0	0	0	0	0	0	0	0	0
6 Livestocks and Fisheries	0	0	0	0	0	0	0	0	0	0	0
7 Forestry	163514	4976	1402	794	23	519	19071	0	0	0	0
8 Mining and Quarring	0	0	0	39115	0	0	0	0	0	0	0
9 Dairy Products	292	207	499	280	139	75	0	0	0	0	0
10 Canning	0	0	0	0	0	0	0	0	0	8890	0
11 Other Food Products	0	0	0	0	0	0	0	0	0	0	0
12 Grain Mill Products	0	0	0	0	0	0	0	0	0	0	0
13 Tobacco Manufacture	0	0	0	0	0	0	0	0	0	0	0
14 Beverages	0	0	0	0	0	0	0	0	23565	0	0
15 Tea	497	345	831	466	231	126	0	740	0	3669	1559
16 Sugar and Confectionery	241	242	582	326	162	88	0	0	0	0	0
17 Carpets	439	311	748	420	208	113	0	0	0	129	0
18 Textiles	0	0	0	0	0	0	0	0	53	89	0
19 Garments	731	518	1247	699	347	188	0	1566	0	31358	2043
20 Jute Goods	780	553	1330	746	370	201	0	471	0	1414	1969
21 Footwear and Leather Good	0	0	0	0	0	0	0	0	0	0	0
22 Cement	561	905	368	1143	481	101	235869	1609	0	5241	198
23 Mineral & Fuel Products	633	927	398	1403	431	141	375826	1532	0	3026	198
24 Pharmaceuticals	974	691	1653	933	463	251	167	1474	0	0	8097
25 Chemicals	160	119	95	356	113	30	19292	14034	0	23437	346
26 Wood & Furniture	345	435	167	701	205	70	187809	520	0	2958	57
27 Paper and Printing	702	37042	429	2997	995	249	739	6994	26148	20257	9944
28 Plastic & Rubber Products	0	0	0	0	0	0	200	0	0	1551	0
29 Basic &Fabricated Metals	305	491	207	721	245	50	203195	8145	0	16159	9063
30 Electric & Electronic Goo	164	119	95	356	45667	30	14065	18723	0	21420	99
31 N.S.E Industries	0	0	0	0	0	44356	0	8150	0	0	9947
32 Construction	0	0	0	0	0	0	0	0	0	0	0
33 Gas.Electricity & Water	3223	7502	9923	11481	2147	1047	451	119727	80678	88428	15172
34 Hotel & Resturants	835	587	1413	793	393	214	497	2469	37652	290066	8212
35 Transport & Communication	5313	4359	4945	13642	4545	994	41730	12790	85307	523302	349513
36 Wholesale & Retail Trade	397	364	409	1206	327	114	19087	1071	400	570511	422007
37 Banking Real Estate & Dwe	3257	2087	1379	2963	657	520	5451	503529	0	768011	257793
38 Government Services	2330	0	20	415	637	0	1015	0	0	0	0
39 Other Services	3023	4449	1943	7997	1111	2419	191680	20157	81490	207305	40444
40 DOMESTIC INPUT PURCHASE	189597	67970	29981	89952	59897	51896	1315645	724159	392097	2606331	1148570
41 IMPORTS	4541	119157	151547	499214	81995	3939	297401	166395	884373	1057925	10509
INDIA	253	25437	11295	24852	13609	2036	71182	123574	289103	406972	0
THIRD COUNTRY	4288	93720	140252	474361	68387	1903	226219	42821	595270	650953	10509
42 TOTAL INTER. INPUT	194138	187098	181528	589166	141892	55835	1613046	890555	1276470	3664256	1159079
43 COMPENSATION OF EMPLOYEES	51260	36917	17050	56767	10034	7193	1806754	134000	216142	1561693	303658
44 DEPRECIATION	2274	9963	5060	16825	3188	1753	77644	120000	119350	1002792	34752
45 INDIRECT TAX	27558	24000	32318	104292	23117	2318	100300	1854	75764	96300	0
DOMESTIC	27558	1429	8129	81154	19760	2191	56350	185	66000	0	
INDIA	0	3425	1970	1446	556	99	7714	1669	3521	26745	
THIRD COUNTRY	0	19176	22219	21692	2801	28	36236	0	5243	69555	
46 OPERATING SURPLUS	100429	16969	25721	35857	47754	23966	2543302	154146	267744	989224	2827553
47 VALUE ADDED	181491	87849	80159	213741	83153	35141	4628000	410000	670000	3650000	3166000
48 GRAND TOTAL	375619	274936	261687	802907	225045	91037	6241046	1300555	1946470	7314256	4325079

Table 5.1: Input/Output Table
(Base Year 1986/87)

S/N	Sectors	Banking Real Estate & Dwelling 37	Government Services 38	Other Services 39	Sub-Total 40	Private Consump. 41	Govt. Consump. 42	Private Fixed Invest. 43	Govt. Fixed Invest. 44	Exports 45	India 46	Third Country 47	Sub-Total 48	Total Output 49
1	Food Crops	0	0	121	6060219	13375734		373000		16596	16574	22	13765331	19825550
2	Jute	0	0	0	47352	4109		0		35322	20139	15183	39430	86783
3	Tobacco	0	0	0	53973	39443		0		1157	1133	25	40601	94573
4	Sugarcane	0	0	0	174321	49298		0		0	0	0	49295	223609
5	Other Cash Crops	4697	0	6272	1028092	6591837		0		255990	169975	86015	6847827	7875909
6	Livestocks and Fisheries	0	0	13	4369310	5507952		262000		174362	173984	378	5944343	10313653
7	Forestry	3740	0	0	1130013	2902299		0		4561	4561	0	2906860	4036873
8	Mining and Quarring	0	0	0	200758	65478		0		0	0	0	65478	266236
9	Dairy Products	0	0	0	3861	232925		0		0	0	0	232925	235755
10	Canning	0	0	0	8890	15656		0		0	0	0	15656	24546
11	Other Food Products	0	0	0	44312	339429		0		324233	303462	20771	663542	707854
12	Grain Mill Products	0	345454	2709	348203	4998377		0		31642	30106	1536	5030019	5378221
13	Tobacco Manufacture	0	0	0	0	1078142		0		1061	14	1047	1079203	1079203
14	Beverages	0	0	0	23565	303094		0		0	0	0	303094	326659
15	Tea	0	3899	726	17029	52942		0		707	8	699	53649	70678
16	Sugar and Confectionery	0	0	0	73096	241193		0		2792	1790	992	243985	317081
17	Carpets	11221	31456	1058	49765	37722		0		593191	0	593191	630913	680678
18	Textiles	5221	0	1053	61002	808742		0		0	0	0	808742	869744
19	Garments	0	99244	11720	192391	20992		0		559334	2043	557792	579334	771726
20	Jute Goods	2747	5723	29	34329	3961		0		195340	195340	0	199301	233631
21	Footwear and Leather Good	0	0	0	0	70027		0		180050	24150	155900	250078	250078
22	Cement	0	19867	144	354686	155228		0		0	0	0	155228	509913
23	Mineral & Fuel Products	9567	30803	6300	500690	50000		0		0	0	0	50000	550690
24	Pharmaceuticals	0	6933	13630	42980	170580		0		591	581	9	171171	214151
25	Chemicals	0	400	7176	69794	318763		0		199491	195871	3620	519253	589047
26	Wood & Furniture	0	5100	154	213781	110490		26000	15718	9630	9509	121	161839	375619
27	Paper and Printing	43117	8035	8915	244586	29122		0		1229	1037	192	30351	274936
28	Plastic & Rubber Products	0	0	4	1856	259191		0		639	538	101	259830	261687
29	Basic &Fabricated Metals	151634	81135	344	550169	171715		28000	42215	10808	5529	5279	252738	802907
30	Electric & Electronic Goo	21385	30905	2365	162743	62230		0		72	70	2	62302	225045
31	M.S.M Industries	0	7334	8886	78674	12363		0		0	0	0	12363	91037
32	Construction	0	0	0	0	0		2771710	3469336	0	0	0	6241046	6241046
33	Gas.Electricity & Water	31811	25719	2361	596866	703689		0		0	0	0	703689	1300555
34	Hotel & Resturants	129412	212997	17677	713180	32478		0		1200812	491177	709635	1233290	1946470
35	Transport & Communication	120991	302066	52939	3255168	722523		382000	269062	2675493	960706	1714787	4059088	7314256
36	Wholesale & Retail Trade	14470	19373	4067	1821138	1191577		236000	166283	910080	396280	513800	2503940	4325078
37	Banking Real Estate & Dwe	311032	74465	27802	3314297	2065145		0		0	0	0	2065145	5380142
38	Government Services	0	0	0	7822	0	6184933	0	0	0	0	0	6184933	6192753
39	Other Services	177530	342775	3134	1287914	791022		0		19011	6654	12357	810033	2097945
40	DOMESTIC INPUT PURCHASE	1944033	1675790	181512	27137513	43594179	6184933	4078710	3963614	7405285	3011802	4393483	65226021	92363532
41	IMPORTS	56042	600993	754434	6895482	3552232		2004000	528396	0			6114519	13010100
	INDIA	14410	217251	275833	2745786	1456060		639541	168625				2294226	5040012
	THIRD COUNTRY	41637	383642	478601	4149696	2096172		1364459	359761				3820392	7970088
42	TOTAL INTER. INPUT	1100142	2276753	935946	34032994	47176711	6184933	6082710	4491000	7405285	3011802	4393483	71340639	105373632
43	COMPENSATION OF EMPLOYEES	1863931	2916909	921180	25686200									25556256
44	DEPRECIATION	140161	0	11963	2253915									2251564
45	INDIRECT TAX	15702	0	1601	2002677	1345765		107281	28277	79400			1560723	3563400
	DOMESTIC	0			1592796	816204							816204	2409000
	INDIA	4647		1601	116394	255914		34375	9055	31558			333912	450216
	THIRD COUNTRY	9055			293577	270647		72906	19222	47832			410607	704184
46	OPERATING SURPLUS	3322155	0	227055	28387746									28387744
47	VALUE ADDED	[illegible]	2216909	1162000	58330538	1345765	0	107281	28277	79400	0	0	1560723	59924574
48	GRAND TOTAL	5380142	6192753	2097946	92363532	48522476	6184933	6169991	4519277	7484685	3011802	4393483	72901362	165265206

Chapter 6

VALIDATION OF THE MACRO MODEL AND POLICY SIMULATION

6 1 Model Validation

The structure of the macro model has been briefly discussed in Chapter 3. The parameters estimated separately for each equation is also presented there. The model consists of various blocks representing production, demand, foreign trade, employment, money supply and prices. In spite of model's simplicity, statistical test such as R2, DW, F and t-Statistics show that the individual equations and the parameters estimated are statistically significant. But in the simultaneous system, it is necessary to test the overall fitness of the multi-equation model, which is a precondition for examining the forecasting ability of the model. This is needed mainly due to the following reasons:

(a) the multi-equation model having the dynamic property has strong feedback mechanism and hence even if all the individual equations fit the data well and are statistically significant, it is not guaranteed that this will lead to replication of the same data when the model is historically simulated;

(b) the tracking performance may not be uniformly consistent among variables and may vary considerably from one variable to another.

Due to these reasons, the behaviour of the dynamic multi-equation simultaneous model may be completely different from the single equation model. It is in this context the total mathemetical solution of the simultaneous model is needed. This is done through the simulation of the whole model. Given the initial values of endogenous variables and time series for the exogenous variables, the model is sequentially solved over sample period to obtain solutions for a set of endogenous variables (both behavioural and identities).

There has been no prior attempt in Nepal at such detailed simulation exercise. A number of problems was encountered in the beginning partly because of lack of sufficient experience and party because of non-availability of an appropriate software. Eventually, micro TSP package was used to undertake both simulation and forecasting exercises.

Taking into account the sample period of both endogenous and pre-determined variables, a historical simulation of the model was carried out covering the period of 1978 to 1988 to validate the model. The validation exercise generated new data series which were then compared with the original data. Interestingly, in spite of model's simplicity and poor data base, the tracking ability of the model was found to be extremely good. In dynamic simulation, there is always a danger of large gap manifesting over time among actual and simulated values due to (a) inability of the model in tracking fully the turning points in the movements of endogenous variables; and (b) the errors cumulated over time and through successive substitutions of equations for the model solution because of the use of the lagged endogenous variables generated by the model(1).

To begin with, the simulated and actual values of the endogenous variables were graphically compared. Subsequently, root mean square percent errors (RMSPE) were also derived to measure the deviation of the simulated variables from their actual time path. Such errors were estimated using the following formula:

$$RMSPE = \sqrt{\frac{1}{T}\sum_{t=1}^{T}\left(\frac{y_t^s - y_t^a}{y_t^a}\right)^2} \times 100$$

(1) For details see Economic Commission for West Asia: A Macro Econometric Planning Model of the Syrian Arab Republic, Lebanon, 1980 and also see R.S. Pindyck and D.L. Rubinfeld; Econometric Models and Economic Forecasts, (McGraw-Hill Koga Kuslin Ltd.), 1976.

Where,

Y^s = the simulated value

Y^a = the actual value

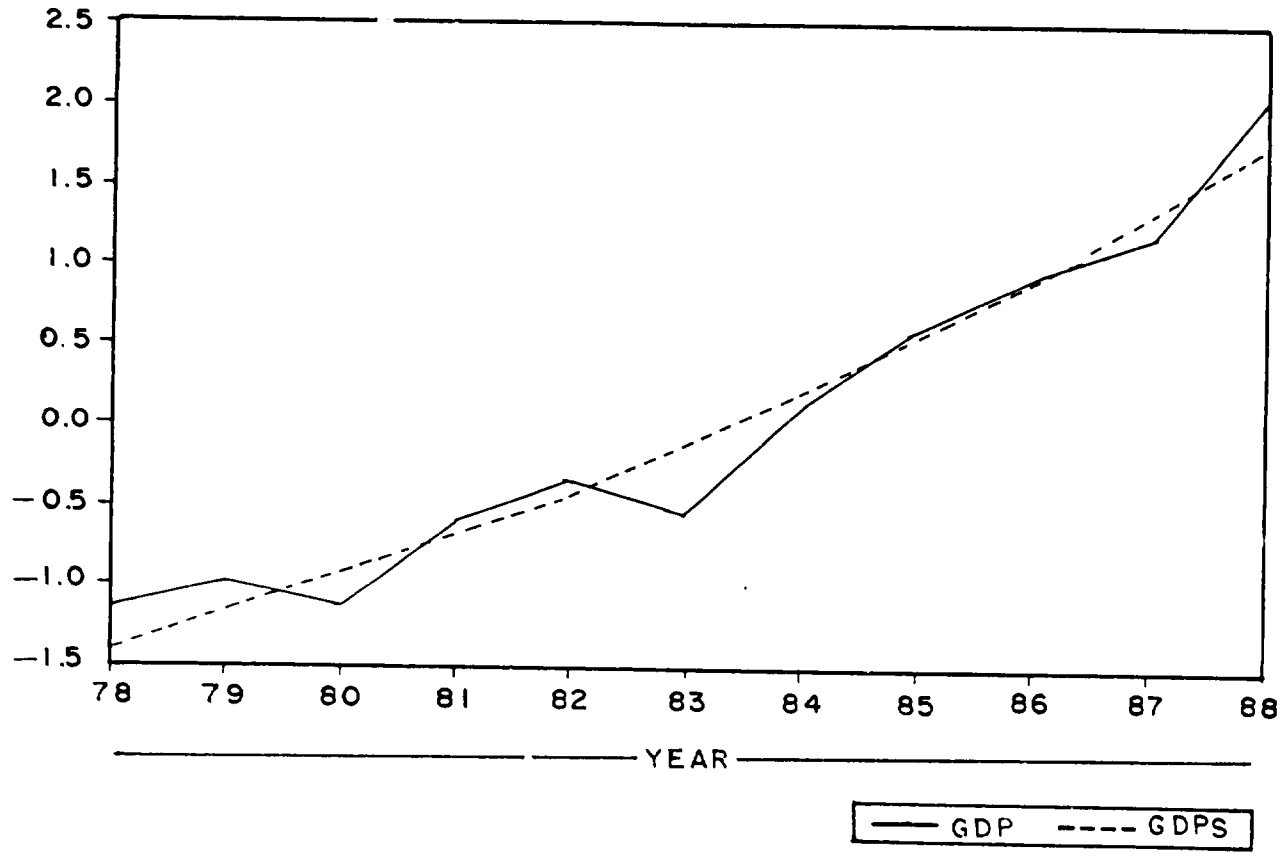
T = the number of years in the simulation

It is possible to assess the overall forecasting ability of the model from this statistic. It not only reveals the accuracy of simulation fit but also demonstrates whether the model under consideration for policy simulation is fairly good to capture the turning points.

The graphs showing both actual and simulated series of some key endogenous variables are presented below. From the graphs it can be seen that the erratic trends of some variables such as government saving, budgetary and current account deficit have been fairly well captured by the model. It indicates that the tracking performance of even the external balance sector has been satisfactory. As expected, in many cases aggregate variables track historical pattern better than their disaggregated components. This is possible because of cancellation of errors in the aggregation process.

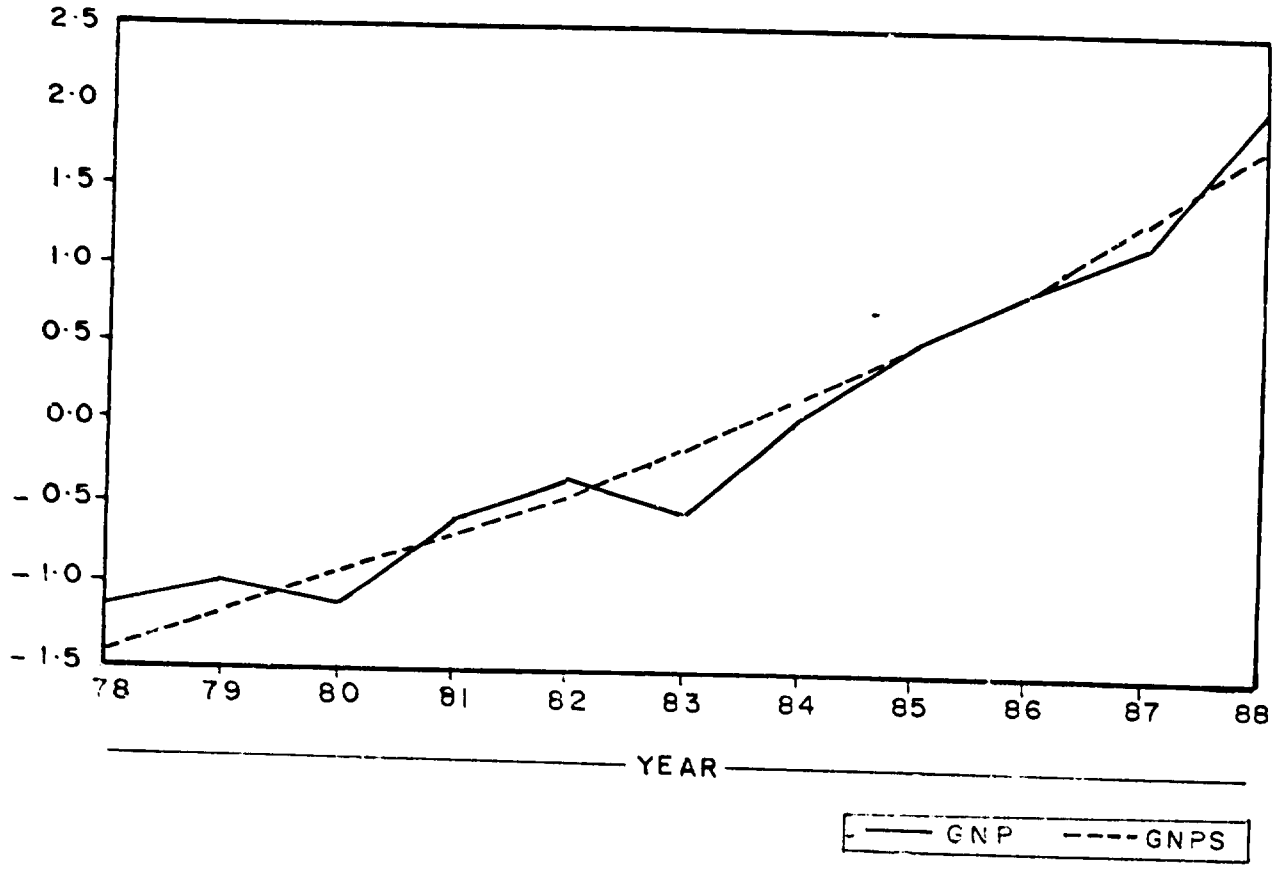
Likewise, the RMSPE calculated for some of the important variables clearly indicate that the errors are reasonably small (Table 6.1). A model designed for forecasting purposes should have standard errors as small as possible. These results again confirm that the model has a good forecasting ability. It is worth mentioning that it is only seldom that the results show low RMPSE in such exercises. Low Root Mean Square Error (RMSE) is far more common because of cancellation of errors in the calculation process.

GROSS DOMETIC PRODUCT



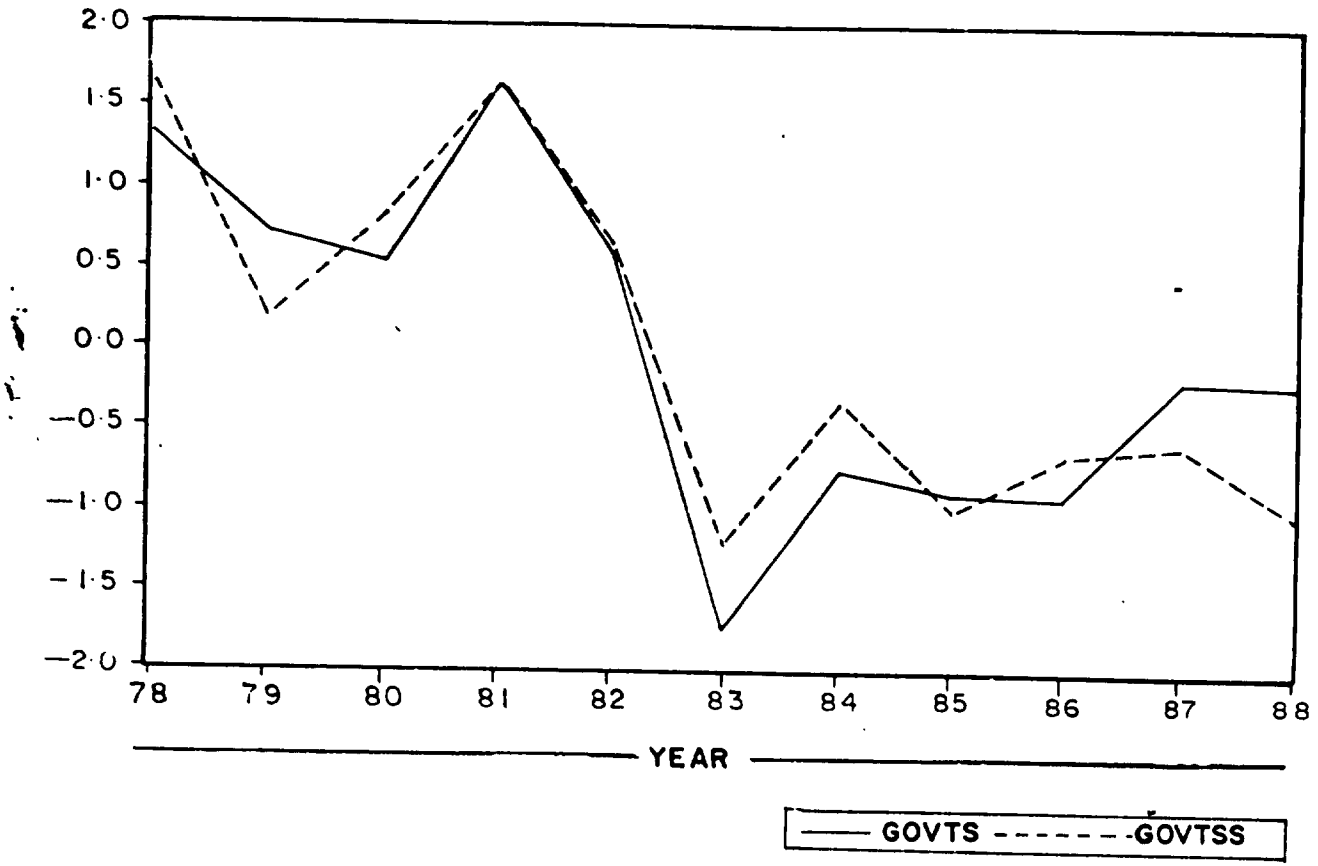
S = SIMULATED

GROSS NATIONAL PRODUCT

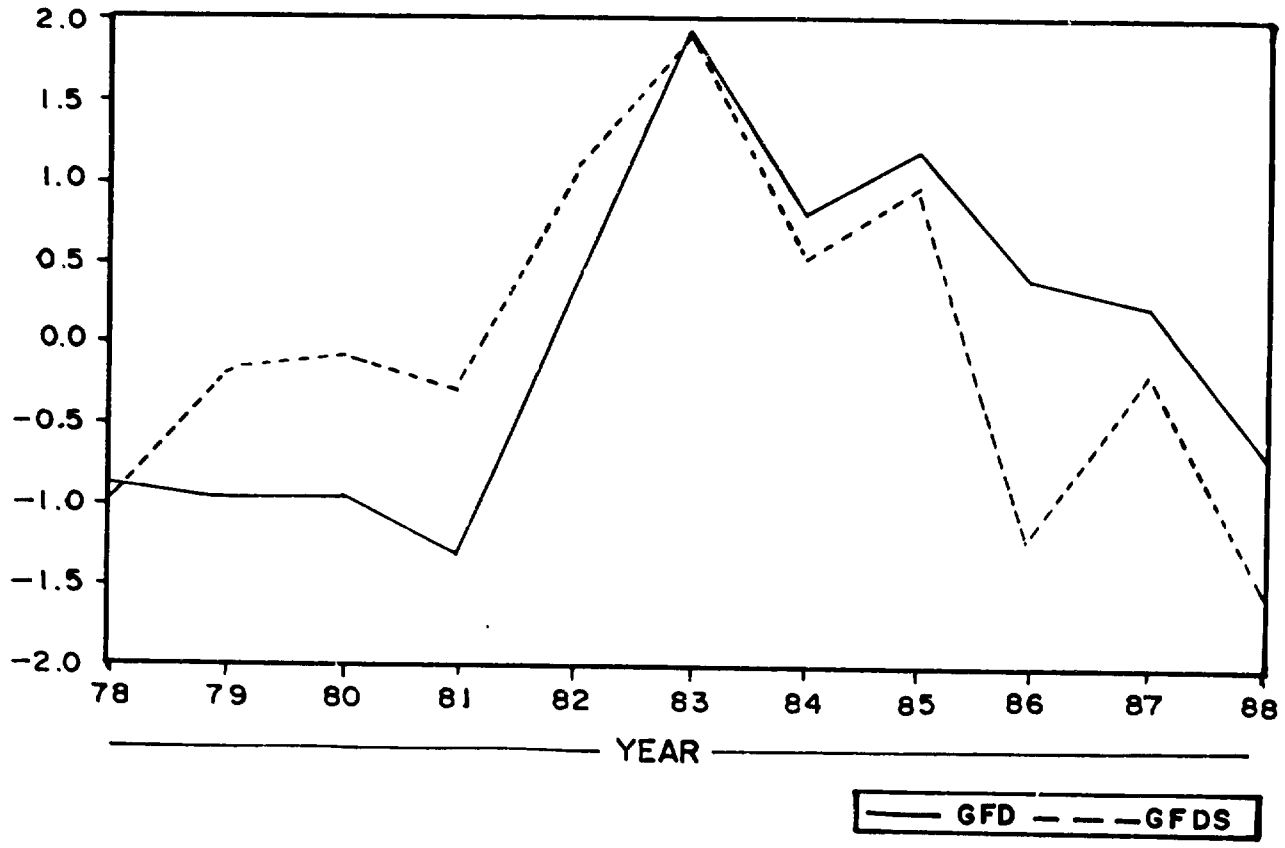


S= SIMULATED

GOVERNMENT SAVINGS

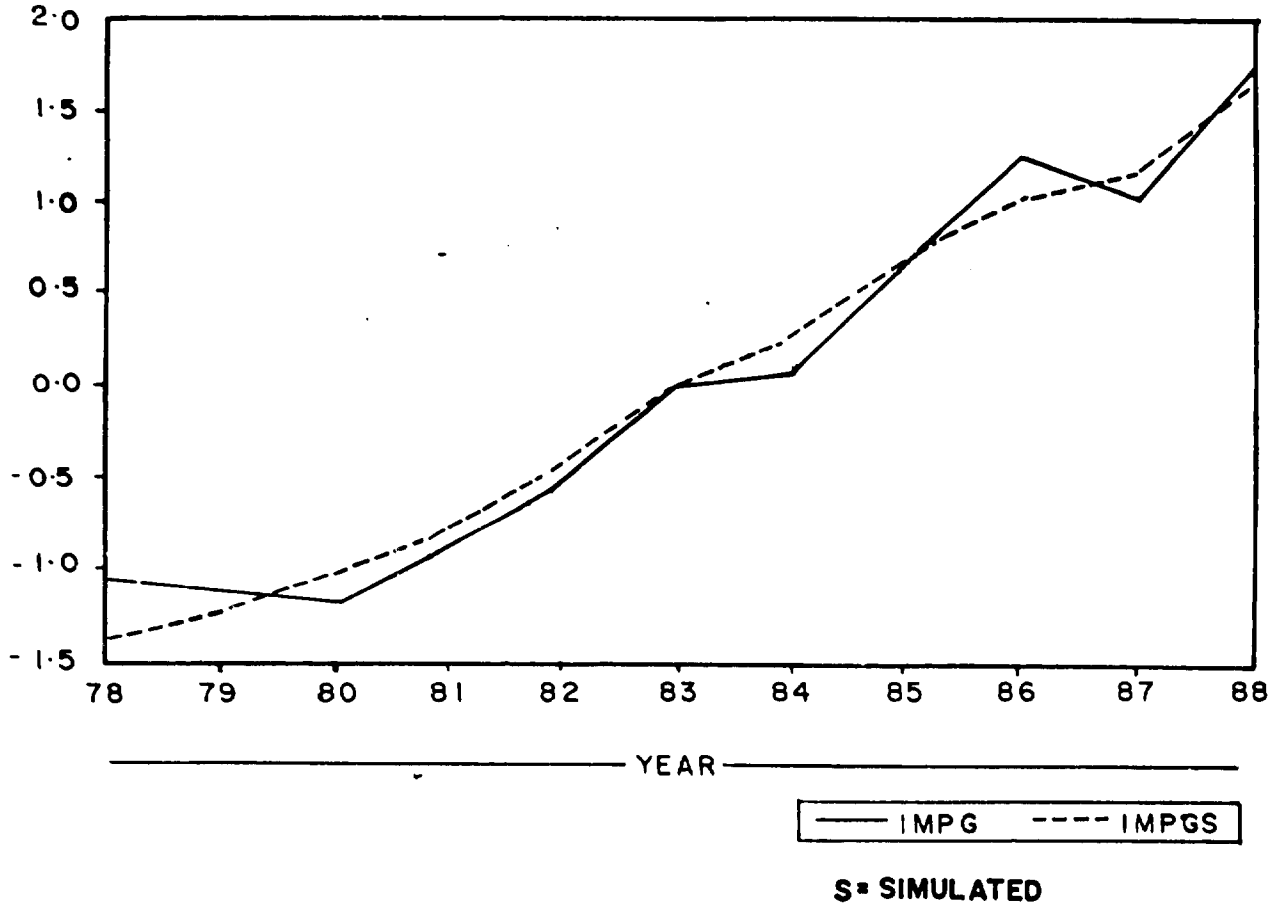


GOVERNMENT FISCAL DEFICIT

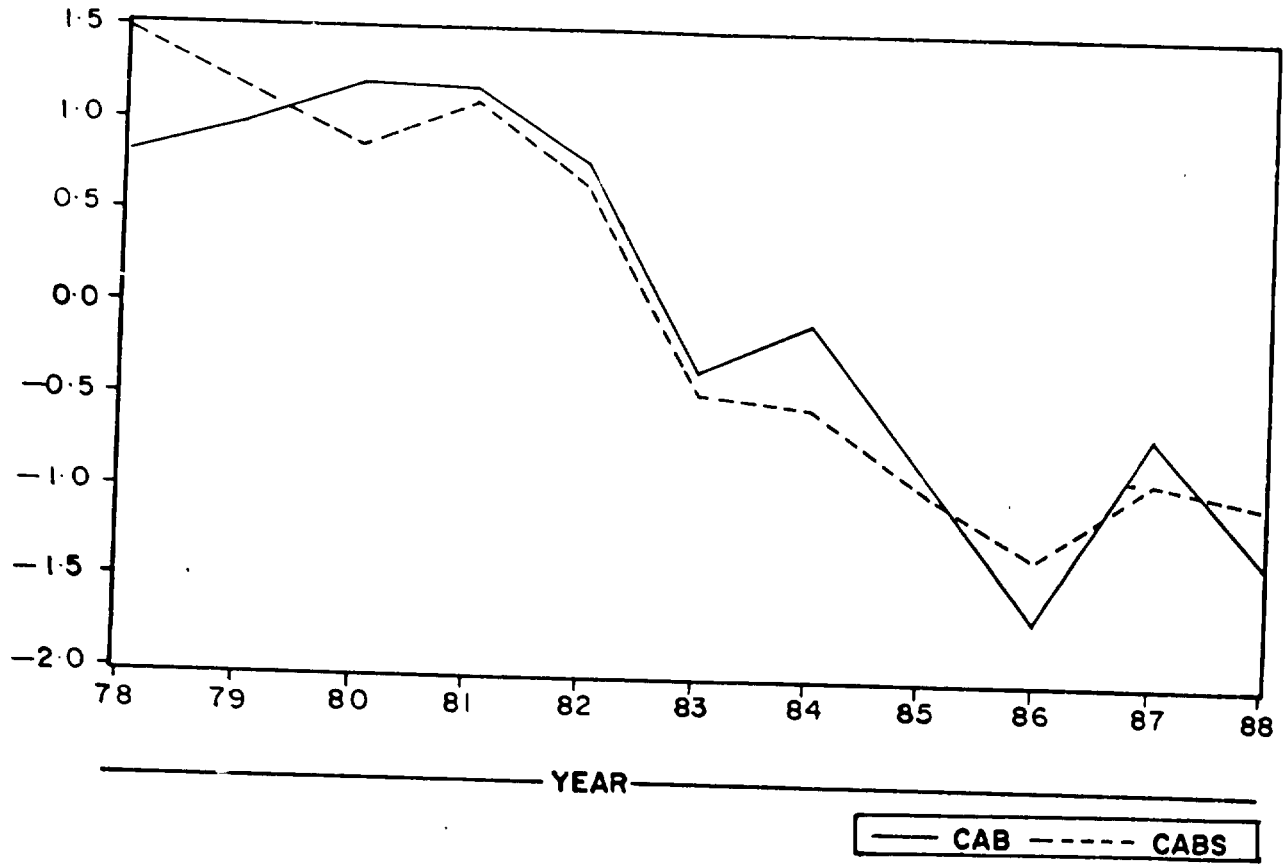


S= SIMULATED

IMPORT OF GOODS



CURRENT A/C BALANCE



S= SIMULATED

Table 6.1 Root Mean Square Percent Error of Selected Variables

Variables		RMSPE
VAA	(Agricultural Value Added)	3.93
VMM	(Value Added in Manufacturing)	6.42
VAFRD	(Value Added in Finance, Real Estate & Dwelling)	3.55
VASS	(Value added in Social Service Sector)	4.20
PRVCR	(Private Consumption)	2.83
MS	Money Supply	3.19
CPc	(Consumer Price Index)	4.58
LD	(Total Labour Demand)	1.77
IMPG	(Import of Goods)	8.76
GR	(Government Revenue)	5.44
GDP	(Gross Domestic Product)	2.95
GNP	(Gross Natipnal Product)	2.88

6.2 Policy Simulation

Encouraged by the good fit of the model, various alternative policy simulations were carried out. Essentially the model was used to examine the impact of exogenous policy variables on crucial macro-economic variables such as output, employment, money supply, prices, trade as well as current account balance. As noted in Chapter 3, the major exogenous policy variables used in the model were government investment, government consumption, foreign aid, exports of goods and services, imports of services and external prices. In addition to base run, four alternative scenarios were developed on the basis of exogenously determined time path for policy variables.

The purpose of developing these alternative scenarios was to examine the possible trade offs between faster growth and inflation and between self-reliance and external dependence,

between labour intensive and capital intensive investment.

It may be seen from both equations and identities that the total investment outlay is constrained by the level of domestic savings and external resources. The internal savings are in turn directly affected by the saving propensity of private as well as government sector. The model has attempted several sensitivity analyses on the basis of exogenously determined sectoral investment distribution coefficients. They show the likely implications of the distribution parameters on capital productivity and output in the various sectors of the economy. The policy issues are, thus, examined through changing the time path of exogenous variables or reallocating the investment among sectors.

6.2.1 Base Run Scenario

In tables 6.2 and 6.3 the alternative growth rates as well as sectoral allocation of investment assumed to construct exogenous variables are presented.

Table 6.2: Basic Assumptions

(Growth Rates Per Annum)

Exogenous Variables	Base Run	Alternate I	Alternate II	Alternate III	Alternate IV
PSCR	9.89	8.00	10.00	12.00	12.00
GOVGFI	7.50	10.00	10.00	10.00	12.00
GOVC	6.00	6.00	6.00	6.00	6.00
GOVTRS	9.00	9.00	9.00	9.00	9.00
GFG	6.88	8.00	10.00	12.00	15.00
GFB	7.00	9.00	12.00	14.00	18.00
NFI	2.82	2.82	2.82	2.82	2.82
EXPG	6.00	6.00	7.00	8.00	10.00
EXPS	9.00	9.00	9.00	9.00	10.00
IMPS	6.00	6.00	6.00	6.00	6.00
MFL	9.31	9.31	9.31	9.31	9.31
IMPI	5.75	5.75	5.75	5.75	5.75
CTA	.00	.00	.00	.00	.00
OTR	6.00	6.00	6.00	6.00	6.00
TCA	1.22	1.22	1.22	1.22	1.22

Table 6.3: Sectoral Allocation of Investment

(Percentage)

	Base Run	Alt I	Alt II	Alt III	Alt IV	Alt II	Alt III	Alt IV
		1990/95		1990/95		1995/2000		
Agriculture	.3018	.3200	.3200	.3200	.3200	.3200	.3200	.3200
Mining & Industry	.0471	.1000	.1200	.1500	.1800	.1500	.1800	.2000
Electricity	.1405	.1405	.1405	.1405	.1405	.1400	.1400	.1400
Construction	.0352	.0400	.0450	.0450	.0500	.0500	.0500	.0500
Trade	.0255	.0255	.0255	.0255	.0255	.0300	.0300	.0300
Transport	.1346	.1346	.1346	.1346	.1346	.1300	.1300	.1300
Real Estate & Dwelling	.2499	.1740	.1490	.1190	.0840	.1100	.0800	.0600
Social & Community Services	.0654	.0654	.0654	.0654	.0654	.0700	.0700	.0700
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

In the base run, past trends of most of the exogenous variables were retained and the investment shares were derived taking the average share of the recent past five years. A notable change, however, was made in case of external borrowing. It had shown an average growth rate of more than 20 percent during the period of 1975 to 1987; this high percentage was made possible because of the initial low base to start with. It was considered unrealistic that such high rate could be maintained in the future. The annual growth rate was therefore brought down to 7 percent for the period 1990 to 1995.

The base run results are presented in table 6.4.

6.4: Base Run Results on Major Macro Variables

Rs in million
(At 1986/87 prices)

Endogenous Variables	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1990-95 Growth Rate
GNP	67787.84	69883.05	72111.74	74249.42	76619.27	79113.17	3.14
Private Consumption	52518.85	54078.23	55736.97	57327.92	59091.75	60947.86	3.02
Private Investment	8543.22	8649.32	8761.46	8820.38	8960.11	8990.66	1.03
Government Total Revenue	7027.91	7363.16	7716.56	8070.04	8457.25	8868.24	4.76
Imports of Goods	15099.41	16296.24	17543.88	18831.99	20214.84	21691.73	7.52
Current Account Balance	-6196.89	-6755.36	-7313.20	-7855.86	-8432.75	-9038.11	7.84
Money Supply	10594.30	11897.60	13338.88	14922.42	16672.44	18586.73	11.90
Consumer Price Index	125.02	137.57	152.18	167.99	185.41	204.53	10.35
Government Fiscal Deficit	1121.61	1344.24	1588.32	1874.85	2173.32	2497.04	17.37
Total Investment	14351.87	14893.62	15474.08	16036.45	16663.98	17329.73	3.84
National Saving	7986.82	8085.72	8192.53	8248.28	8333.94	8420.13	1.06
Total Employment	8.51	8.67	8.86	9.04	9.24	9.46	2.14

It is evident from table 6.4 that if the exogenous variables grow at the historical rate, the overall growth of GNP will be no more than 3.14 percent during 1990 to 1995. At the same time, the budgetary deficit will increase substantially over the 1987-88 level and will reach around 3 percent of GNP by 1995. With the increase in money supply by around 12 percent, the rise in prices will also be around 10 percent per annum (Table 6.4). The results also indicate that the overall employment can increase only at a rate below the population growth. This exercise thus highlights that in a condition of neutral policy regime the prospects of the Nepalese economy are far from satisfactory and in fact, likely to deteriorate.

6.2.2 Alternative Scenarios

The base run scenario was obviously unacceptable. It was, therefore, considered necessary to examine the effect of policy intervention to stimulate economic growth to a more acceptable level. Accordingly, four alternative simulation exercises were carried out.

The historical trend is assumed to be modified by a deliberate policy decision in two main directions under the

alternative scenarios: firstly, in terms of aggregate investment in the economy and secondly, by way of a reallocation of investment among different sectors.

The basic assumptions underlying the alternate simulation runs have already been set out in Table 6.2 and 6.3.

As will be seen from table 6.2, Government investment and private sector credit are progressively increased from one alternative to the other. To support these larger investments, foreign grants and borrowings are also assumed to be stepped up progressively. A significant growth in exports of goods and services is also assumed. Most of the other variables are assumed to remain constant at the historical trend rate.

The shifts in the allocation of investment will be evident from Table 6.3. The most significant change is a progressive increase in the mining and industry sector and a sharp decline in investment in the real estate and dwelling sector. A moderate increase in the construction sector is also assumed. The trend rate has been maintained more or less constant in other sectors.

The significant changes in sectoral allocations were considered necessary in view of the predominance of investment in real estate and dwelling activities within non-agricultural sector. Obviously, this trend was sustained due to the prevalence of policies which encouraged and attracted private sector investment in less productive but quick yielding activities. This is corroborated by the incremental capital output ratios derived from the macro model (see table 6.5).

Table 6.5: Sectoral ICORs Derived

Agriculture	2.78
Mining & Industry	1.84
Construction	1.36
Electricity	33.01
Transport & Communication	20.38
Trade, Hotel & Restaurant	2.67
Finance, Real Estate & Dwelling	21.43
Private & Community Services	3.19

The results obtained from the macro model show that with the exception of the electricity sector, the real estate and dwelling sector had the highest ICOR. Surprisingly, mining and industry sector has a very low ICOR and it is also the sector in which investment has been very low in the past. This anomalous situation did indicate the need for a drastic correction. Accordingly, it was decided to increase the level of investment in industry and to reduce it substantially in real estate and dwelling. As will be seen from table 6.3, the share of real estate has been decreased to 6.4 percent in 2000 in the last scenario from as high as 25 percent in 1990. On the other hand, the share of industry has been increased substantially to reach 20 percent in 2000.

The results of alternate simulation runs in terms of major economic indicators are presented in Table 6.6. A comprehensive set of forecasts obtained for endogenous variables are given in tables at the appendix.

Table 6.6: Results of Alternative Scenarios (Growth Rates Per annum)

	ALT I	ALT II	ALT II	ALT III	ALT III	ALT IV	ALT IV
Endogenous Variables	1990-95	1990-95	1995-2000	1990-95	1995-2000	1990-95	1995-2000
GNP	3.967	4.25	5.72	4.75	7.49	5.48	8.66
Private Consumption	3.822	4.09	5.56	4.57	7.29	5.29	8.43
Private Investment	9.857	6.16	8.72	9.75	13.39	13.94	17.25
Government Total Revenue	6.503	7.08	8.49	8.12	10.51	9.55	12.27
Imports of Goods	9.287	10.34	10.45	11.32	12.04	13.28	14.01
Current Account Balance	11.930	13.42	12.99	14.74	15.53	16.35	17.93
Money Supply	9.648	10.87	9.89	13.06	11.01	11.83	9.05
Consumer Price Index	8.322	9.17	8.59	10.79	9.28	9.57	7.15
Total Investment	5.643	8.23	9.31	10.27	12.02	13.92	15.24
National Saving	2.973	3.60	6.54	4.70	10.12	6.29	12.12
Total Employment	2.525	2.62	3.72	2.84	4.66	3.19	5.73

The alternative simulation runs throw up some interesting results which have a decisive influence on the economy. The

salient points may be summarized as follows:

1. The rate of investment in the economy will have to be significantly stepped up even to attain moderately respectable rates of growth of GNP. For example investment rate has to be stepped up to 14 percent to secure a growth of 5.5 percent in national income (Alt. 4). The latter is by no means high when compared to the growth rates actually achieved by other developing countries.
2. An appreciable increase in national savings is essential to support the larger level of investment (notwithstanding substantially higher inflows of foreign and). The saving rate has to be stepped upto 5 to 6 percent (as compared to 1 percent in the base run) for the next five year period (1990-95).
3. Even so, growth in employment will be only at the rate of about 3 percent per annum. In other words, it will take a long time before the employment problem can be adequately dealt with.
4. However, a significant upward trend in investment and national income over the next five years will have a multiplier effect in the following quinquinium. In all the alternatives, it will be noted that the national income grows much faster during the period 1995-2000.
5. The country will continue to need substantial foreign aid for the foreseeable future. This will have to be in the form of grants and soft loans, as otherwise balance of payments situation may turn out to be unsunstainable due to rising debt service obligations.
6. This is highlighted by the fact that in spite of a growing quantum of foreign aid and significant step up in exports assumed in the simulation runs, the current account deficit tends to grow at a fairly fast rate.
7. Under all the four scenarios, the rate of inflation seems to be close to 10 percent. Money supply will therefore need to be kept closely under watch.
8. A reallocation of investment in favour of industry appears to have a significant positive impact on national income and

employment.

As to the choice to be made among the different alternatives examined in the model, it is primarily a matter to be considered in the light of socio-political considerations. While a higher rate of savings and investments are desirable from a longer term point of view, there are short term considerations to be taken into account e.g. the limits of austerity that the general public would tolerably accept and the extent of foreign aid that can reasonably be expected to be available within the existing international economic environment.

Subject to these considerations, it would, however, seem that Alternatives I and II seem to fall below minimum acceptable rates of growth in national income and employment; Alternative IV is perhaps somewhat unrealistic in terms of foreign aid requirements and sectoral allocation parameters. Viewed from this angle, Alternative III appears to be close to a feasible alternative and at the same time, perhaps the minimum to be attempted. Even this alternative, however, has disturbing elements, particularly by way of a widening current account deficit as a result of a sharp rise in the level of imports. The correction of this drawback will need to be further analyzed by examining the possibilities of achieving a higher level of exports and a greater measure of import substitution.

6.3 Policy Implications

The purpose of the explanatory remarks in the preceding section is not to argue strongly in favour of one scenario or the other. The ultimate decision is obviously that of planners and policy makers. It may nevertheless be reasonable to argue that the construction of this macro model now makes it possible to make detailed policy analysis in the context of Nepal's economic development. The implications and broad dimensions of the Nepalese economy can be assessed by making policy choices out of several policy alternatives under consideration.

At a broader plane, the model results indicate that there are certain areas where special consideration is warranted in order to sustain Nepal's development efforts. First of all, an ambitious programme by the government will be necessary particularly to release many of the country's infrastructural growth constraints by increased public investments. A strong case also could be made for additional external assistance in certain specific individual sub-sectors. Likewise the productivity in labor and capital use has to be increased by new incentives, an improvement in management, better technology absorption and allocation of investment in areas where the capital use is comparatively low. In this connection, the results clearly indicate that industrial sector is the one which deserves special consideration (See Table 6.3) so as not only to accelerate the industrialization process in the country but also to expedite the growth process, and thereby to raise the living standards of the common people within a reasonable period of time.

Chapter 7

INPUT/OUTPUT MODEL AND POLICY SIMULATION

As discussed in the previous chapter, the macro model provides the broad dimensions of the Nepalese economy in terms of GDP, consumption, investments, exports and imports in the background of various levels of prices, deficit financing, dependency on foreign assistance and changes in the behaviour and technological constraints. The input/output model, on the other hand, attempts to bring balance between supply and demand in the consumption market, the investment market, the labour market and intermediate goods market at a disaggregated operational level. To give an example, all industrial and mining activities are clubbed together under one sector - industry and mining - in the macro model. Different sub-sectors within industry and mining sector are not disaggregated and, therefore, the implications of policy changes at the sub-sectoral level cannot be discerned. Further, inter-industry comparisons are also not possible. At the aggregate level, it is also impossible to undertake a policy analysis of allocation of resources among different industries within the industrial sector which constitutes a key policy decision in industrial planning. The input/output model is used to cover these gaps. Besides, it can also help to distinguishe the priority sectors of the economy on the basis of forward and backward linkages of various industries. An input/output model is thus an important planning tool in ensuring utilization of factor endowments and dynamic comparative advantages of the economy and in establishing the feasibility of plan targets without generating sectoral disequilibrium.

Generally an input/output model is utilized to examine the intersectoral consistency, considering only the final demand components. Though this helps to examine the additional output demand generated in the process as a result of an increase in the final demand, such analysis overlooks the supply side constraint and hence, gives little policy direction on the likely destabilization effects. In order to overcome these

shortcomings, the alternative III scenario of the macro model (giving aggregate growth rate of 4.5 percent) has been taken as a basis for reference run solution of the input/output model. To put it differently, the final demand components of the macro model (which are supported by supply consideration under the macro model) have been utilized to get "reference" solution of the input/output model. The salient feature of such integrated analysis is that given almost same aggregate size of the final demand components as considered in the macro-reference run, it tries to work out the detailed sectoral implication in terms of consumption, production, investment, export and import.

7.1 Reference Run Solution

The macro model gives GDP and other variables in scalar terms. At first, all the variables related to final demand components were converted into vectors by using normalized allocation co-efficient computed from the base year input/output table of 1986/87. Then the model solution was achieved with the help of 39 sector inverted matrix by using the final demand vectors on private consumption and investment, government consumption and investment, exports of goods and services as well as imports of goods and services as estimated above. This, however, could give only the total output level that had to be produced by each sector for satisfying the additional demand generated through the new final demand vectors. Again, given the share of value added at factor cost in total output derived from the input/output table the value added figures for each sector were obtained. As shown in table 7.1, this gave exactly the same growth rate as given by the macro model thereby helping us to satisfy the test of complete integration.##

The input/output model gives interesting results in many

The value added figures adopted in various tables in Chapter 7 and in Appendix Tables 11, 12 and 13 representing future projections to 1990 - 95 and 1995 - 2000 are estimated at factor cost. Therefore, these figures would not be comparable to the value added figures presented in Table 5.1 which include indirect taxes also.

respects. From table 7.1 it can be seen that given the intersectoral linkages, sectors like canning, sugar, tea, basic and fabricated metal, and pharmaceutical industries have to grow at a faster rate than others for satisfying the growth in the aggregate demand vector. This implies that to meet either a substantial increase in consumption and investment demand or a growing export demand, these industries need special consideration in the process of industrial development.

The input/output model is also utilized for investment and employment planning by examining the impact on investment and employment at disaggregative level. For this purpose, as noted in Chapter 3, sectoral ICORs and employment coefficients for all 39 sectors were derived by employing various techniques.

The reference run results on sectoral investment and employment are presented in table 7.2(a) and 7.2(b). The input/output model gave substantially higher implicit aggregate ICOR than the historical ICOR derived from the macro model.

For instance in the input/output model the ICOR at the aggregate level comes to around 5 whereas in the macro model it was only around 4. This is because the macro model with its aggretative nature cannot take into account the changes in the activity/production mix taking place over time. Indeed it shows that over time the production-mix of the industrial sector is moving towards higher ICOR activities. This is not surprising, as the diversification of industries tend to increase the capital intensity of the sector.

7.2 Sensitivity Analysis and Alternative Policy Simulations

Based on reference run solution, sensitivity analyses were undertaken to examine the overall as well as sectoral implications on output, value added, investment and employment, under different growth strategies. The alternate strategies considered were: (1) export - oriented development, (2) import - substitution oriented development and (3) a combination of both.

Table 7.1: Growth Rate Implication of Reference Run Results

(Percent)

S.N	Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Avr. 90-95 Output	Grth Rt. 90-95 Val Add	Avr. 95-2000 Output	Grth Rt. 95-2000 Val Add
1	Food Crops	2.5	2.5	3.9	3.9	4.1	4.1	4.6	4.5	4.9	4.3	4.0	4.0	6.75	6.75
2	Jute	8.5	8.5	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.9	9.07	9.07
3	Tobacco	.2	.2	2.7	2.7	2.3	2.3	2.9	2.9	3.5	3.5	2.3	2.3	7.52	7.52
4	Sugarcane	3.7	7.4	11.3	9.6	11.5	9.7	12.2	10.4	12.9	11.0	11.3	9.6	15.51	13.57
5	Other Cash Crops	3.3	3.3	4.7	4.7	4.3	4.9	5.4	5.4	5.7	5.7	4.9	4.9	7.33	7.33
6	Livestock & Fisheries	3.5	2.2	4.7	3.4	4.9	3.6	5.4	3.8	5.7	4.3	4.9	3.5	7.57	6.17
7	Forestry	3.5	1.9	4.5	3.1	4.8	3.2	5.3	3.7	5.6	4.0	4.7	3.2	7.39	5.68
8	Mining & Quarrying	5.4	5.4	3.2	3.2	3.1	3.1	4.1	4.1	5.0	5.0	4.2	4.2	3.51	3.51
9	Dairy Products	7.1	7.1	9.3	9.3	9.4	9.4	10.0	10.0	10.6	10.6	9.2	9.3	13.33	13.33
10	Tanning	10.1	10.1	12.3	12.3	12.4	12.4	13.2	13.2	13.9	13.9	12.4	12.4	17.04	17.04
11	Other Food Products	6.0	6.0	6.3	6.3	6.5	6.5	6.7	6.7	6.9	6.9	6.5	6.5	7.74	7.74
12	Grain Mill Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01	7.01
13	Tobacco Manufacture	2.9	2.8	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16	7.16
14	Beverages	2.9	2.9	4.3	4.3	4.4	4.4	4.8	4.8	5.1	5.1	4.3	4.3	6.99	6.99
15	Tea	9.2	9.2	11.0	11.0	11.1	11.1	11.8	11.8	12.4	12.4	11.1	11.1	15.20	15.20
16	Sugar & Confectionery	7.8	7.8	10.2	10.2	10.3	10.3	11.1	11.1	11.7	11.7	10.2	10.2	14.91	14.91
17	Carpets	8.5	8.5	7.8	7.9	7.8	7.9	7.9	7.9	7.3	7.3	8.0	7.7	9.02	9.02
18	Textiles	1.2	1.9	3.7	4.9	3.3	4.6	3.9	5.2	4.5	5.7	3.2	4.4	4.57	3.30
19	Garments	[illegible]	8.0	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.76	7.76
20	Jute Goods	8.4	8.4	7.6	7.6	7.7	7.7	7.8	7.8	7.8	7.9	7.9	7.9	8.05	8.05
21	Footwear & Leather Goods	5.0	5.0	5.0	5.0	4.9	4.9	5.1	5.1	5.1	5.1	5.0	5.0	5.71	5.71
22	Cement	4.7	4.7	3.8	3.8	3.6	3.6	4.1	4.1	4.5	4.5	4.1	4.1	6.60	6.60
23	Mineral & Stone Product	5.3	5.3	3.8	3.8	3.5	3.5	4.0	4.0	4.4	4.4	4.3	4.3	6.66	6.66
24	Pharmaceuticals	7.0	7.0	10.3	10.3	10.2	10.2	11.3	11.3	12.3	12.3	10.2	10.2	16.53	16.53
25	Chemicals	3.7	13.9	3.3	13.5	3.2	12.4	3.4	11.9	3.6	11.5	3.2	12.7	4.94	9.21
26	Wood & Furniture	3.4	3.4	7.2	7.3	7.3	7.3	7.8	7.9	9.2	9.2	9.0	9.3	9.70	9.70
27	Paper & Printing	3.2	6.3	3.7	7.3	3.7	7.1	4.1	7.4	4.4	7.6	3.8	7.3	6.14	7.75
28	Plastic & Rubber Products	2.7	2.7	4.3	4.3	4.4	4.4	4.9	4.3	5.2	5.2	4.2	4.3	7.03	7.03
29	Basic & Fabricated Metals	16.6	26.0	6.7	6.7	7.2	12.6	9.7	14.3	11.3	17.0	10.4	15.4	18.66	21.59
30	Electrical & Electronic Goods	3.8	3.8	2.9	2.9	2.7	2.7	3.3	3.3	4.0	4.0	3.3	3.3	6.90	6.97
31	N.E.C. Industries	5.0	5.0	1.2	1.2	.9	.8	1.7	1.7	2.6	2.6	2.2	2.2	7.79	7.79
32	Construction	12.0	7.7	8.6	7.3	8.5	6.0	9.0	6.6	3.3	6.4	3.5	6.3	17.49	3.53
33	Gas, Electricity & Water	3.8	3.8	4.7	4.7	4.3	4.9	5.3	5.3	5.6	5.6	4.3	4.3	7.36	7.36
34	Hotels & Restaurants	7.3	7.3	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.93	7.93
35	Transport & Communication	6.3	5.6	6.6	5.2	6.7	5.3	7.0	5.6	7.2	5.9	6.9	5.5	9.11	4.97
36	Wholesale & Retail Trade	5.6	2.9	5.3	2.5	5.3	2.4	5.4	2.5	5.4	2.4	5.4	2.5	5.63	2.33
37	Banking Real Estate & Dwelling	4.9	3.3	4.9	3.6	5.1	3.7	5.5	4.1	5.9	4.4	5.1	3.8	7.37	5.47
38	Government Services	6.3	4.2	6.0	4.1	6.0	2.2	6.0	2.7	6.0	5.1	6.0	3.7	6.00	4.39
39	Other Services	5.4	3.2	5.7	3.3	5.8	3.5	6.1	3.6	6.4	4.0	5.9	3.5	7.76	5.01
		5.0	3.8	5.4	4.5	5.5	4.4	5.9	4.8	6.2	5.2	5.6	4.5	7.82	6.92

Table [illegible]: Reference Run Results on Employment

Sectors	Emp. 1990	Emp. 1991	Emp. 1992	Emp. 1993	Emp. 1994	Emp. 1995	Emp. 2000
Food Crops							
Jute							
Tobacco							
Sugarcane							
Other Cash Crops							
Livestocks & Fisheries							
Forestry							
Agriculture Subtotal	7564653	7795064	8136120	8508178	8937935	9419765	13357672
Mining & Quarrying	1992	2100	2168	2235	2338	2445	3551
Dairy Products	1820	1950	2130	2330	2564	2835	5300
Canning	295	325	365	410	465	529	1162
Other Food Products	4376	4639	4933	5251	5604	5969	6695
Grain Mill Products	14369	14801	15459	16171	16984	17889	25103
Tobacco Manufacture	9841	10121	10565	11046	11603	12223	17274
Beverages	1505	1657	1937	2022	2130	[illegible]	3108
Tea	784	856	950	1055	1180	1327	3692
Sugar & Confectionery	6001	6467	7126	7861	8732	9757	19464
Carpets	11157	12105	13046	14064	15170	16362	24066
Textiles	10274	10394	10775	11134	11573	12097	18245
Garments	10910	11750	12648	13585	14603	15699	22613
Jute Goods	7956	8606	9287	9999	10774	11612	17098
Footwear & Leather Goods	1365	1455	1527	1602	1655	1770	2336
Cement	3245	3397	3526	3653	3802	3973	5467
Mineral & Fuel Products	47052	49526	51736	53544	55693	58166	80275
Pharmaceuticals	1340	1434	1582	1744	1941	2180	4696
Chemicals	4604	4729	4865	5040	5213	5400	6840
Wood & Furniture	6626	7252	7779	8346	8997	9732	15461
Paper & Printing	4380	4519	4656	4862	5061	5263	7116
Plastic & Rubber Products	1936	1988	2073	2164	2270	2368	3353
Basic & Fabricated Metals	7892	9199	9817	10529	11555	12932	30417
Electric & Electronic Goods	1046	1087	1119	1149	1187	1234	1715
N.E.C. Industries	1015	1066	1079	1086	1106	1134	1659
Construction	128604	144039	156474	169641	185989	202216	331597
Gas, Electricity & Water	4993	5164	5430	5694	5996	6333	9034
Transport & Communication	25756	27509	29335	31295	33477	35872	52975
Hotel & Restaurant							
Wholesale & Retail Trade							
Subtotal	588670	626045	663592	703407	746590	792579	1084891
Banking, Real Estate & Dwelling	20942	21774	22846	24007	25325	26796	33336
Government Services							
Other Services							
Subtotal	808429	855773	906387	960246	1019107	1080343	1477101
	9304153	9647575	10101383	10593554	[illegible]	[illegible]	[illegible]

Table [illegible]: Reference Run Results on Investment

Sectors	Invest. 1991	Invest. 1992	Invest. 1993	Invest. 1994	Invest. 1995	Invest. 1995-2000
Food Crops						
Jute						
Tobacco						
Sugarcane						
Other Cash Crops						
Livestocks & Fisheries						
Forestry						
Agriculture Subtotal	2429002	3765977	4104059	4705001	5339218	43972559
Mining & Quarrying	17911	11220	11269	15305	19500	233275
Dairy Products	12409	17354	19176	22466	26047	236679
Canning	621	836	945	1133	1350	13206
Other Food Products	25175	28159	30530	33820	36894	259271
Grain Mill Products	56891	66546	93675	107013	119042	949030
Tobacco Manufacture	6608	10484	11393	13113	14651	119271
Beverages	613	945	1018	1166	1298	10473
Tea	878	1146	1290	1526	1791	16669
Sugar & Confectionery	29831	42187	46999	55752	65552	621106
Carpets	51534	51121	55291	60115	64777	418740
Textiles	14435	39037	37977	44987	52592	542751
Garments	67954	67890	73192	79557	85713	555933
Jute Goods	18700	18359	19796	21583	23310	152546
Footwear & Leather Goods	6713	6977	7199	7785	8295	54416
Cement	66757	56387	55404	65302	74465	654090
Mineral & Fuel Products	31827	21908	20743	24650	28369	253663
Pharmaceuticals	16580	25976	25453	34683	41955	442206
Chemicals	20348	22431	23455	25340	27241	129932
Wood & Furniture	18867	15936	17165	19703	22014	173326
Paper & Printing	13204	15057	15640	17652	19452	124093
Plastic & Rubber Products	5534	8599	9638	11102	12407	101516
Basic & Fabricated Metals	171551	55930	111735	149364	195145	2226342
Electric & Electronic Goods	8924	6974	6815	8556	10525	107796
N.S.E. Industries	3614	900	620	1315	2006	36626
Construction	598314	664851	544839	639115	656916	6342616
Gas. Elect.. Water. Trans. & Com.	4669223	4805636	5163742	5742834	6254758	33576492
Hotel & Restaurant						
Wholesale & Retail Trade						
Subtotal	305004	292080	302282	323676	337285	2041010
Banking. Real Estate & Dwelling	3349764	3786432	4077777	4680039	5186327	40551709
Government Services						
Other Services						
Subtotal	682174	710665	462565	545944	955547	5075506
	12720962	14638181	15354879	17459816	19688972	140595670

Finally, a scenario was also developed to investigate the likely consequences on sectoral investment planning arising from poverty alleviation programmes leading to an enlarged consumption basket for some essential goods and services. The various alternative assumptions made, in this connection are presented in table 7.3.

7.2.1 Import Substitution Strategy and Industrial Development

In this sensitivity analysis, two types of substitution strategies were considered.

In Alternate I, the substitution of final import (both consumption and investment) by locally produced goods was assumed to grow rather slowly among the thirteen import substitution industrial products considered. Inter se among these products, import substitution was assumed to take place at a higher level in cement industry followed by paper and printing. A lower level of substitution was assumed in basic and fabricated industrial products. In view of the limited scope for promoting capital goods industries in the country in the immediate future, this assumption may not be unrealistic.

The results of the sensitivity analysis under Alternative I are presented in table 7.4. It is interesting to note from table 7.4 that in spite of a substantial measure of import substitution, the overall gain in output and value added is not significant. For example, in comparison to the "reference run", only a 0.2 percent additional growth in aggregate value added could be achieved for the period of 1990 to 1995. This is because the income (value added) multiplier for import substituting industries is seen to be only around 1.2 to 1.3. A similar trend is also observed for the period 1995 to 2000 also.

To examine the implications of pursuing a more aggressive import substitution strategy, another scenario, Alternative II, was developed by assuming the attainment of 100 percent self sufficiency by the year 2000 in certain commodities like sugar,

Table 7.3: Basic Assumptions

I. Import Substitution Strategy

		Annual Additional Percentage Reduction in Import Demand 1990-2000 Alternate (I)	Annual Additional Percentage Reduction in Import Demand 1990-2000 Alternate (II)
1.	Tobacco	4	4
2.	Dairy Products	3	0
3.	Canning	3	3
4.	Sugar	4	100
5.	Textile	3	100
6.	Footwear	4	100
7.	Cement	6	100
8.	Mineral & Fuel	3	3
9.	Pharmaceuticals	4	75
10.	Chemicals	3	3
11.	Paper and Print	5	100
12.	Basic and Fabricated	1	1
13.	Electric & Electronic	3	50
14.	Plastic and Rubber	0	50

II. Export Promotion Strategy

		Annual Additional Percentage Increase in Exports 1990-2000 Alternate (I)	Annual Additional Percentage Increase in Exports 1990-2000 Alternate (II)
1.	Other Cash Crop	4	15
2.	Livestock	2	10
3.	Tea	3	10
4.	Carpets	8	20
5.	Garments	6	10
6.	Jute Goods	4	0
7.	Footwear	3	8
8.	Hotel and Restaurant	4	10
9.	Transport and Communication	3	10
10.	Other Services	0	10

III. Combination of I & II

Table 7.3: Basic Assumptions (continued)

IV. Essential Goods Strategy

		Annual Additional Percentage Increase Rate
1.	Food Crops	1
2.	Textile	4
3.	Leather & Goods	2
4.	Real Estate and Dwelling	2
5.	Other Services	3

textiles, footwear, cement and paper and printing, 75 percent self sufficiency in pharmaceuticals and 50 percent in electric and electronic goods as well as plastic and rubber products. This scenario gave the average value added growth rate of 4.9 percent for the period of 1990 to 1995 and 7.29 percent for 1995 to 2000 (table 7.5).

Even under a vigorous import substitution policy, the gains are not very impressive. But more importantly, this scenario is not considered feasible in view of the possible supply constraints and the nature of non-competitive import substitution.

7.2.2 Export Led Strategy and Industrial Development

As in the case of import substitution strategy, two alternative possibilities were considered under the export oriented development strategy.

To begin with, ten exportable items which prima facie seem to hold considerable potential were identified. These include other cash crops, livestock, tea, carpets, garments, jute goods, footwear, hotel and restaurant, transport and communication and other services. The last three items have been included as export items in the sense that these contribute greatly to foreign

exchange earnings from the growth of tourism. Thus they indirectly suggest greater emphasis on tourism development as a major source of foreign exchange earnings just as commodity exports are. Livestock and cash crops were considered in view of their strong linkage with other sectors and also due to their prospects for augmenting exports.

Table 7.4: Growth Rate Implication of Import Substitution Strategy I

S/N	Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	[illegible] 91-95 Output	[illegible] 91-95 Value Added	[illegible]
1	[illegible]	2.5	2.5	3.3	3.3	4.1	4.1	4.6	4.6	4.3	4.3	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	7.8	7.8	7.9	7.9	7.9	7.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	5.4	5.4	8.5	8.5	8.5	8.5	9.4	9.4	[illegible]	[illegible]	8.4	8.4	[illegible]
4	[illegible]	11.5	9.8	12.6	11.3	13.6	11.9	14.2	12.4	14.5	12.7	13.5	11.7	[illegible]
5	[illegible]	.4	3.4	4.9	4.9	5.0	5.0	5.4	5.4	5.7	5.7	4.4	4.4	[illegible]
6	[illegible]	[illegible]	3.3	4.7	3.4	5.0	3.6	5.5	3.3	[illegible]	4.4	4.3	3.5	[illegible]
7	Forestry	.5	2.1	4.8	3.3	5.0	3.4	5.5	3.3	[illegible]	4.2	[illegible]	3.4	[illegible]
8	Mining & Quarrying	[illegible]	[illegible]	5.9	5.9	6.0	6.0	7.2	7.2	8.1	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible] Products	[illegible]	[illegible]	11.1	11.1	11.2	11.2	11.8	11.8	12.3	12.3	11.1	11.1	[illegible]
10	[illegible]	[illegible]	13.6	15.6	15.6	15.4	15.4	15.9	15.9	16.3	16.3	15.4	15.4	[illegible]
11	[illegible]	[illegible]	6.0	6.3	6.3	6.5	6.5	6.7	6.7	[illegible]	[illegible]	6.5	6.5	[illegible]
12	[illegible]	[illegible]	3.0	4.4	4.4	4.6	4.7	5.0	5.3	5.3	5.3	4.5	4.5	[illegible]
13	[illegible] Manufacture	[illegible]	2.8	4.4	4.4	4.5	4.6	5.0	5.0	5.3	5.3	4.4	4.4	[illegible]
14	[illegible]	2.3	2.3	4.3	4.3	4.4	4.4	4.8	4.8	5.1	5.1	4.3	4.3	[illegible]
15	[illegible]	[illegible]	9.3	11.1	11.1	11.2	11.2	11.9	11.9	12.5	12.5	11.2	11.2	15.2
16	Sugar & Confectionery	11.2	11.2	13.5	13.5	13.4	13.4	14.0	14.0	14.4	14.4	13.3	13.3	[illegible]
17	[illegible]	8.5	8.5	7.8	7.8	7.8	7.8	7.9	7.9	[illegible]	7.9	8.0	8.0	[illegible]
18	Textiles	5.6	6.3	9.4	9.7	9.4	9.7	9.2	10.5	10.0	11.2	9.3	9.5	[illegible]
19	[illegible]	[illegible]	9.0	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.6	7.6	[illegible]
20	[illegible]	9.6	9.6	7.8	7.8	7.9	7.9	7.9	7.9	8.0	[illegible]	[illegible]	[illegible]	[illegible]
21	Footwear & Leather Goods	[illegible]	6.8	6.9	6.9	6.9	6.9	7.1	7.1	7.3	[illegible]	7.0	7.0	[illegible]
22	[illegible]	[illegible]	9.3	7.5	7.5	7.4	7.4	8.0	8.0	8.5	8.5	7.2	7.2	[illegible]
23	Mineral & Fuel Product	9.4	9.4	6.5	6.5	6.3	6.3	7.0	7.0	7.6	7.6	7.2	7.2	[illegible]
24	Pharmaceuticals	14.9	14.9	17.6	17.6	16.3	16.3	17.2	17.2	17.4	17.4	16.8	16.8	[illegible]
25	Chemicals	[illegible]	15.7	5.1	15.4	5.1	14.6	5.6	14.2	5.3	13.3	5.2	14.6	[illegible]
26	Wood & Furniture	3.5	3.5	7.3	7.3	7.3	7.3	7.9	7.9	8.2	8.2	[illegible]	[illegible]	[illegible]
27	Paper & Printing	[illegible]	9.7	6.7	9.3	6.9	9.3	6.3	9.7	6.7	[illegible]	[illegible]	9.4	[illegible]
28	[illegible] & Rubber Products	3.7	3.7	4.3	4.3	4.4	4.4	4.3	4.3	5.2	5.2	4.3	4.3	[illegible]
29	Basic & Fabricated Metals	[illegible]	25.9	3.7	14.9	[illegible]	15.3	12.7	17.6	14.6	13.4	13.4	[illegible]	[illegible]
30	[illegible] & Electrical Goods	7.3	7.8	7.1	7.1	[illegible]	7.3	8.2	8.2	9.0	9.0	7.8	7.8	[illegible]
31	[illegible] Industries	[illegible]	5.1	1.2	1.2	.9	.9	1.8	1.8	2.7	2.7	2.4	2.4	[illegible]
32	Construction	[illegible]	7.7	9.6	7.3	9.5	6.0	9.0	6.6	9.3	6.4	9.5	6.3	[illegible]
33	[illegible] & Water	[illegible]	4.1	5.0	5.0	5.2	5.2	5.6	5.6	6.0	[illegible]	5.2	5.2	[illegible]
34	[illegible]	[illegible]	7.3	7.4	7.4	7.4	7.4	7.5	7.5	7.6	7.6	7.6	7.6	[illegible]
35	Transport & Communication	[illegible]	5.6	6.6	5.3	6.7	5.4	7.0	5.7	7.2	[illegible]	6.3	5.6	[illegible]
36	[illegible] Trade	[illegible]	2.3	5.4	2.5	5.5	2.4	5.5	2.5	5.5	2.4	5.4	2.5	[illegible]
37	[illegible] & Consulting	[illegible]	3.4	[illegible]	3.7	5.2	3.9	5.6	4.2	[illegible]	4.5	5.2	3.9	[illegible]
38	[illegible]	[illegible]	4.2	6.0	4.1	[illegible]	2.2	6.0	2.7	[illegible]	5.1	[illegible]	[illegible]	[illegible]
39	[illegible]	[illegible]	3.4	[illegible]	3.5	[illegible]	3.7	[illegible]	3.9	[illegible]	4.3	[illegible]	3.7	[illegible]
	[illegible]	5.2	4.0	5.6	4.7	5.8	4.5	6.2	5.0	6.5	5.4	5.2	4.7	[illegible]

Table 7.5: Growth Rate Impliction of Import Substitution Strategy II

(Percent)

S.N	Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Avr 90-95 Output	Grth Rt. 90-95 Val Add	Avr. 95-2000 Output
1	Food Crops	2.5	2.5	3.3	3.9	4.1	4.1	4.6	4.6	4.9	4.9	4.0	4.0	6.77
2	Jute	8.7	8.7	7.9	7.9	7.9	7.9	8.0	8.0	8.1	8.1	8.1	8.1	8.31
X 3	Tobacco	5.6	5.6	8.5	8.5	8.5	8.5	9.4	9.4	10.1	10.1	8.4	8.4	11.15
4	Sugarcane	14.3	13.2	16.9	15.1	16.8	14.9	17.1	15.3	17.3	15.4	16.5	14.8	18.52
5	Other Cash Crops	4.0	4.0	5.6	5.6	5.9	5.9	6.5	6.5	7.0	7.0	5.8	5.6	9.38
6	Livestocks and Fisheries	4.2	3.0	5.6	4.3	6.0	4.7	6.7	5.2	7.3	5.9	6.0	4.6	9.22
7	Forestry	3.7	2.2	4.9	3.3	5.1	3.5	5.6	3.9	5.9	4.3	5.0	3.4	7.43
8	Mining and Quarrying	9.1	9.1	7.1	7.1	7.4	7.4	8.7	8.7	9.8	9.8	8.4	8.4	13.63
X 9	Dairy Products	13.3	13.3	15.4	15.4	15.3	15.3	15.8	15.8	16.0	16.0	15.2	15.2	17.40
X 10	Canning	13.6	13.6	15.6	15.6	15.4	15.4	16.0	16.0	16.3	16.3	15.4	15.4	17.11
11	Other Food Products	6.0	6.0	6.3	6.3	6.5	6.5	6.7	6.7	6.9	6.9	6.5	6.5	7.76
12	Grain Mill Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01
13	Tobacco Manufacture	2.8	2.8	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16
14	Beverages	2.9	2.9	4.3	4.3	4.4	4.4	4.8	4.8	5.1	5.1	4.3	4.3	6.43
15	Tea	9.3	9.3	11.1	11.1	11.3	11.3	12.0	12.0	12.6	12.6	11.3	11.3	15.38
X 16	Sugar and Confectionery	16.0	16.0	18.1	18.1	17.7	17.7	18.0	18.0	18.1	18.1	17.6	17.6	13.05
17	Carpets	8.5	8.5	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.9	8.0	8.0	8.04
X 18	Textiles	15.3	16.7	18.5	20.0	18.2	19.6	18.8	20.0	18.7	20.1	18.0	19.3	13.53
19	Garments	8.0	8.0	7.4	7.4	7.4	7.4	7.5	7.5	7.6	7.6	7.6	7.6	7.84
20	Jute Goods	8.8	8.8	8.0	8.0	8.0	8.0	8.1	8.1	8.2	8.2	8.2	8.2	8.56
X 21	Footwear and Leather Goods	9.5	9.5	9.7	9.7	10.0	10.0	10.4	10.4	10.7	10.7	10.1	10.1	11.99
X 22	Cement	10.7	10.7	10.1	10.1	10.4	10.4	11.3	11.3	11.3	11.9	10.9	10.9	14.92
X 23	Mineral & Fuel Products	8.5	8.5	6.6	6.6	6.5	6.5	7.2	7.2	7.9	7.9	7.3	7.3	9.45
X 24	Pharmaceuticals	21.8	21.8	23.7	23.7	22.3	22.3	22.1	22.1	21.7	21.7	22.3	22.3	21.72
X 25	Chemicals	4.4	15.8	5.1	15.5	5.2	14.6	5.6	14.3	5.9	14.0	5.2	14.8	3.93
26	Wood & Furniture	9.5	9.5	7.4	7.4	7.4	7.4	7.9	7.9	8.3	8.3	8.1	8.1	8.81
X 27	Paper and Printing	6.7	10.5	7.6	11.3	8.0	11.5	8.7	12.2	9.3	12.7	8.0	11.6	11.44
X 28	Plastic & Rubber Products	2.7	2.7	4.3	4.3	4.4	4.4	4.9	4.9	5.2	5.2	4.3	4.3	7.03
X 29	Basic Fabricated Metals	13.5	15.9	9.8	15.0	10.4	15.4	12.8	17.7	14.7	19.4	13.5	20.7	13.34
X 30	Electric & Electronic Good	10.4	10.4	9.9	9.9	10.4	10.4	11.4	11.4	12.3	12.3	10.9	10.9	14.82
31	N.S.P Industries	5.2	5.2	1.4	1.4	1.1	1.1	2.0	2.0	2.9	2.9	2.5	2.5	8.13
32	Construction	12.0	7.7	8.6	7.9	8.5	6.0	9.0	6.6	9.3	6.4	9.5	6.9	10.47
33	Gas, Electricity & Water	4.4	4.4	5.4	5.4	5.5	5.5	6.0	6.0	6.4	6.4	5.5	5.5	8.26
34	Hotel & Restaurants	7.9	7.9	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.6	7.6	7.6	7.91
35	Transport & Communication	7.0	5.7	6.7	5.3	6.8	5.5	7.1	5.7	7.3	5.9	7.0	5.6	9.27
36	Wholesale & Retail Trade	5.6	2.9	5.4	2.6	5.4	2.5	5.5	2.5	5.5	2.4	5.5	2.6	5.73
37	Banking Real Estate & Dwel	4.3	3.4	5.1	3.8	5.3	3.9	5.7	4.4	6.1	4.6	5.3	4.0	7.66
38	Government Services	6.0	4.2	6.0	4.2	6.0	2.2	6.0	2.7	6.0	5.1	6.0	3.7	6.01
39	Other Services	5.5	3.5	6.0	3.7	6.2	3.9	6.6	4.0	6.[illegible]	4.4	6.3	3.9	8.23
	Note: X = Import Substitution	5.6	4.3	6.0	5.0	6.2	4.9	6.7	5.5	7.1	6.0	6.3	5.1	8.75

Under Alternative I, the export growth of these ten commodities was exogenously increased by minimum 2 percent to maximum 8 percent above the reference run growth. The results of the sensitivity analysis as presented in table 7.6 indicate a respectable growth rate of 5 percent of GDP during 1990-95. Also in this context it is seen that the income multiplier in the case of export led strategy is around 2.0, much higher than the case of import substitution strategy.

The implications of adopting a strategy of placing even greater emphasis on exports were examined in Alternative II. Under this Alternative, except assuming a zero increase in the growth rate of jute goods, the growth rate in other goods and services (Table 7.2) were increased by 8 to 20 percent. The highest annual growth rate was assumed for carpets (20 percent) followed by cash crops and livestock, tea, garments etc. In this scenario the export of services plays a crucial role in export promotion, and reflects a faster growth of tourism sector in Nepal's development. In table 7.7 the results of this Alternative are presented. This scenario gives very high growth rate of both value added (5.9 percent and 8.69 percent) and output (7.2 percent and 9.99 percent) for the period of 1990-95 and 1995-2000.

From the foregoing analysis, it is evident that if a choice were to be made between import substitution and export led strategies, the latter is clearly more beneficial for the economic development of Nepal. This underlines the validity of promoting an outward looking economy in Nepal. It also brings out clearly the importance of tourism provided, however, its multiplier effects are fully harnessed through its linkage effect with other sectors of the economy.

Table 7.6: Growth Rate Implication of Export Promotion Strategy I

S.N	Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Avr. 90-95 Output	Grth Rt. 90-95 Val Add	Avr. 95-2000 Output	[illegible]
	1 Food Crops	2.5	2.5	3.9	3.9	4.1	4.1	4.6	4.6	5.0	5.0	4.0	4.0	5.79	[illegible]
	2 Jute	10.5	10.5	9.8	9.8	9.9	9.9	10.0	10.0	10.1	10.1	10.1	10.1	3.19	[illegible]
	3 [illegible]	.2	.2	2.7	2.7	2.3	2.3	2.9	2.3	3.5	3.5	2.3	2.3	7.52	[illegible]
	4 Sugarcane	3.1	7.4	11.3	9.6	11.5	9.8	12.2	10.4	12.8	11.0	11.4	9.6	15.72	[illegible]
x	5 Other Cash Crops	3.5	3.5	4.9	4.9	5.1	5.1	5.6	5.6	5.9	5.9	5.0	5.0	7.66	[illegible]
x	6 Livestock & Fisheries	3.7	2.5	5.0	3.7	5.2	3.9	5.7	4.2	6.1	4.7	5.1	3.9	7.30	[illegible]
	7 Forestry	3.5	2.0	4.7	3.1	4.8	3.2	5.3	3.7	5.6	4.0	4.9	3.2	7.41	[illegible]
	8 Mining & Quarrying	5.5	5.5	3.3	3.3	3.2	3.2	4.2	4.2	5.1	5.1	4.2	4.2	9.55	[illegible]
	9 Dairy Products	7.1	7.1	9.3	9.3	9.4	9.4	10.0	10.0	10.6	10.6	9.3	9.3	17.33	[illegible]
	10 [illegible]	10.6	10.6	12.8	12.8	12.3	12.9	13.7	13.7	14.3	14.3	12.8	12.8	17.11	[illegible]
	11 Other Food Products	6.0	6.0	6.4	6.4	6.5	6.5	6.7	6.7	6.9	6.9	6.5	6.5	7.78	[illegible]
	12 Grain Mill Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01	[illegible]
	13 Tobacco Manufacture	2.8	2.8	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16	[illegible]
	14 Beverages	3.1	3.1	4.6	4.6	4.7	4.7	5.2	5.2	5.5	5.5	4.6	4.6	7.03	[illegible]
x	15 [illegible]	9.4	9.4	11.2	11.2	11.3	11.3	12.0	12.0	12.6	12.6	11.3	11.3	15.34	[illegible]
	16 Sugar & Confectionery	7.4	7.8	10.2	10.2	10.3	10.3	11.1	11.1	11.8	11.8	10.3	10.3	14.92	[illegible]
x	17 Carpets	16.2	16.2	15.6	15.6	15.7	15.7	15.8	15.8	15.9	15.9	15.9	15.9	13.57	[illegible]
	18 Textiles	1.6	2.3	4.2	5.5	4.0	5.2	4.6	5.9	5.3	6.5	3.9	5.1	9.15	[illegible]
x	19 Garments	13.0	13.0	12.5	12.5	12.6	12.6	12.8	12.8	12.9	12.9	12.8	12.8	12.48	[illegible]
x	20 Jute Goods	12.2	12.2	11.4	11.4	11.5	11.5	11.6	11.6	11.7	11.7	11.7	11.7	3.35	[illegible]
x	21 Footwear & Leather Goods	7.7	7.7	7.9	7.8	7.9	7.9	8.2	8.2	8.4	8.4	8.0	8.0	8.19	[illegible]
	22 Cement	4.7	4.7	3.8	3.8	3.6	3.6	4.1	4.1	4.5	4.5	4.2	4.2	5.55	[illegible]
	23 Mineral & Fuel Product	5.9	5.9	3.3	3.9	3.6	3.6	4.1	4.1	4.5	4.5	4.4	4.4	5.71	[illegible]
	24 [illegible]	7.1	7.1	10.4	10.4	10.3	10.3	11.4	11.4	12.3	12.3	10.3	10.3	16.60	[illegible]
	25 Handicrafts	2.8	14.0	3.4	13.6	3.3	12.6	3.5	12.1	3.7	11.6	3.3	12.8	4.38	[illegible]
	26 Wood & Furniture	3.1	9.4	7.3	7.3	7.3	7.3	7.8	7.8	8.2	8.2	8.0	8.0	3.72	[illegible]
	27 Paper & Printing	2.3	7.6	4.6	8.2	4.7	8.1	5.1	8.5	5.5	8.8	4.8	8.2	6.31	[illegible]
	28 Plastic & Rubber Products	2.7	2.7	4.3	4.3	4.4	4.4	4.9	4.9	5.2	5.2	4.3	4.3	7.08	[illegible]
	29 Basic & Fabricated Metals	16.7	26.0	6.9	6.9	7.3	12.7	9.8	15.0	12.0	17.1	10.5	15.5	18.67	[illegible]
	30 Electrical & Electronic Goods	4.1	4.1	3.2	3.2	3.1	3.1	3.7	3.7	4.4	4.4	3.7	3.7	7.03	[illegible]
	31 N.E.C. Industries	5.2	5.2	1.4	1.4	1.1	1.1	2.0	2.0	2.9	2.3	2.5	2.5	8.04	[illegible]
	32 Construction	12.0	7.7	9.6	7.3	8.5	6.0	9.0	5.6	9.2	6.4	9.5	6.9	10.40	[illegible]
	33 Gas, Electricity & Water	4.3	4.3	5.2	5.2	5.4	5.4	5.9	5.9	6.3	6.3	5.4	5.4	7.75	[illegible]
x	34 Hotel & Restaurants	11.0	11.0	10.5	10.5	10.6	10.6	10.8	10.8	10.9	10.9	10.8	10.8	9.59	[illegible]
x	35 Transport & Communication	9.4	7.1	9.1	6.8	9.2	6.9	8.7	7.3	8.9	7.5	8.5	7.1	9.24	[illegible]
	36 Wholesale & Retail Trade	5.9	3.1	5.6	2.8	5.6	2.7	5.7	2.8	5.8	2.7	5.7	2.8	5.39	[illegible]
	37 [illegible] Real Estate & Dwelling	4.2	3.6	5.3	3.9	5.5	4.1	5.9	4.5	6.3	4.8	5.5	4.2	7.74	[illegible]
	38 Government Services	6.0	4.2	6.0	4.1	6.0	2.2	6.0	2.7	6.0	5.1	6.0	3.7	6.01	[illegible]
	39 Other Services	5.9	3.5	6.0	3.7	6.2	3.9	6.6	4.0	6.3	4.4	6.2	3.9	9.05	[illegible]
	[illegible] Export Promotion	5.4	4.2	5.8	4.9	6.0	4.8	6.5	5.3	6.8	5.8	6.1	5.0	8.24	[illegible]

Table 7.7: Growth Rate Implication of Export Promotion Strategy II

(Percent)

S.N. Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Avr. 90-95 Output	Grth Rt. 90-95 Val Add	Avr. 95-20.. Output
1 Food Crops	2.5	2.6	4.0	4.0	4.2	4.2	4.7	4.7	5.1	5.1	4.1	4.1	6.32
2 Jute	8.6	8.6	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.9	8.0	8.0	4.15
3 [illegible]	.2	.2	2.7	2.7	2.3	2.3	2.9	2.9	3.5	3.5	2.3	2.3	7.53
4 Sugarcane	9.1	7.5	11.4	9.7	11.5	9.8	12.3	10.5	12.8	11.0	11.4	9.7	15.57
x 5 Other Cash Crops	4.0	4.0	5.6	5.6	5.9	5.9	6.5	6.5	7.0	7.0	5.8	5.8	8.82
x 6 Livestocks & Fisheries	4.2	3.0	5.6	4.3	6.0	4.7	6.7	5.2	7.3	5.9	6.0	4.6	3.72
7 Forestry	3.5	2.0	4.7	3.2	4.3	3.3	5.4	3.8	5.7	4.1	4.8	3.3	7.54
8 Mining & Quarrying	5.5	5.5	3.4	3.4	3.3	3.3	4.3	4.3	5.3	5.3	4.4	4.4	3.79
9 Dairy Products	7.1	7.1	9.3	9.3	9.4	9.4	10.1	10.1	10.6	10.5	9.3	9.3	13.34
10 Canning	11.7	11.7	14.0	14.0	14.1	14.1	14.9	14.9	15.6	15.6	14.1	14.1	17.38
11 Other Food Products	6.0	6.0	6.4	6.4	6.5	6.5	6.8	6.8	7.0	7.0	6.5	6.5	7.84
12 Grain Mill Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01
13 Tobacco Manufacture	2.9	2.9	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16
14 Beverages	3.5	3.5	5.0	5.0	5.3	5.3	5.9	5.9	6.3	6.3	5.2	5.2	8.17
x 15 Tea	9.7	9.7	11.6	11.6	11.7	11.7	12.5	12.5	13.1	13.1	11.7	11.7	15.64
16 Sugar & Confectionery	7.9	7.9	10.3	10.3	10.4	10.4	11.2	11.2	11.9	11.9	10.3	10.3	14.3
x 17 Carpets	27.9	27.9	27.5	27.5	27.9	27.9	28.3	28.3	28.5	28.5	28.0	28.0	27.64
18 Textiles	3.1	2.8	4.3	6.1	4.8	6.1	5.8	7.0	6.7	7.9	4.9	6.0	10.74
x 19 Garments	16.4	16.4	16.0	16.0	16.3	16.3	16.7	16.7	16.9	16.9	16.5	16.5	16.02
x 20 [illegible]	8.5	8.5	7.7	7.7	7.8	7.8	7.9	7.9	7.9	7.9	8.0	8.0	8.14
x 21 Footwear & Leather Goods	12.1	12.1	12.5	12.5	12.9	12.9	13.5	13.5	14.0	14.0	13.0	13.0	14.14
22 [illegible]	4.8	4.8	3.9	3.9	3.7	3.7	4.3	4.3	4.7	4.7	4.3	4.3	6.45
23 Mineral & Fuel Product	6.0	6.0	4.0	4.0	3.7	3.7	4.2	4.2	4.7	4.7	4.5	4.5	6.31
24 Pharmaceuticals	7.2	7.2	10.5	10.5	10.4	10.4	11.5	11.5	12.5	12.5	10.4	10.4	16.63
25 Chemicals	3.3	14.2	3.6	13.8	3.6	12.9	3.9	12.4	4.1	12.0	3.6	13.1	5.52
26 Wood & Furniture	9.5	9.5	7.3	7.3	7.4	7.4	7.9	7.9	8.3	8.3	8.1	8.1	9.45
27 Paper & Printing	5.3	9.3	6.1	9.7	6.5	10.0	7.2	10.7	7.9	11.3	6.6	10.1	9.38
28 Plastic & Rubber Products	2.8	2.8	4.3	4.3	4.5	4.5	4.9	4.9	5.3	5.3	4.3	4.3	7.16
29 Basic & Fabricated Metals	16.9	26.2	7.0	7.0	7.6	12.9	10.1	15.3	12.2	17.3	10.7	15.7	15.43
30 Electrical & Electronic Goods	4.6	4.6	3.8	3.8	3.9	3.9	4.7	4.7	5.5	5.5	4.5	4.5	8.43
31 Misc. Industries	5.7	5.7	2.0	2.0	1.8	1.8	2.9	2.9	3.9	3.9	3.2	3.2	9.14
32 Construction	12.0	7.7	8.6	7.9	8.5	6.0	9.0	6.6	9.3	6.4	9.5	6.9	10.43
33 Electricity Gas & Water	5.0	5.0	6.1	6.1	6.4	6.4	7.1	7.1	7.6	7.6	6.4	6.4	9.15
x 34 Hotel & Restaurants	15.8	15.8	15.5	15.5	15.9	15.9	16.2	16.2	16.5	16.5	16.0	16.0	15.74
x 35 Transport & Communication	11.4	10.4	11.3	10.5	12.4	11.0	13.1	11.6	13.6	12.1	12.5	11.1	13.24
36 Wholesale & Retail Trade	6.4	3.7	6.3	3.4	6.4	3.5	6.7	3.7	6.3	3.8	6.5	3.6	7.41
37 Banking Real Estate & Dwelling	5.0	4.3	6.2	4.8	6.5	5.1	7.1	5.7	7.6	6.2	6.5	5.2	9.20
38 Government Services	6.0	4.2	6.0	4.2	6.0	2.2	6.0	2.7	6.0	5.1	6.0	3.7	6.01
x 39 Other Services	6.6	4.3	7.0	4.6	7.2	4.9	7.8	5.2	8.2	5.8	7.4	5.0	9.64
Nation with Export Promotion	6.2	4.8	6.7	5.7	7.1	5.7	7.8	6.4	8.3	7.0	7.2	5.9	9.33

7.2.3 Combined Strategy of Export Promotion and Import Substitution on the Basis of Comparative Advantage and Industrial Development

Indeed a country like Nepal cannot follow exclusively either an export led or import substitution development strategy. In a more fundamental sense, these are not mutually exclusive. Several industries which export also meet growing domestic demand. In a practical sense, there is no reason not to promote import substitution of products which can be competitively manufactured in the country while pursuing exports exclusively or substantially in certain other products. In the real world, both import substitution and export possibilities are simultaneously explored, no doubt with a greater emphasis on one or the other, depending on the resource endowments and comparative advantages enjoyed by a country. And this applies to Nepal too.

There are, of course, other valid reasons why an exclusive attention to one or the other strategy would not be advantageous to Nepals' growth prospects. Given the low per capita income and relatively small population, the aggregate domestic demand for manufactured products is modest and can be expected grow only at a slow pace. As such, industrial development based on domestic demand can only have a limited scope. It will soon exhaust itself and will be hardly sufficient to maintain the momentum of growth of the national economy. This apart, the lack of natural resources and the diseconomies of scale and the consequent high cost of production will rule out import substitution of several products. On the other hand, exports cannot be stretched to ad infinitum. The changes in the global economic situation, fluctuations in demand and trade restrictions of various kinds adopted by importing countries set limits to the quantum of exports which a country may aspire to, even assuming that it enjoys distinct comparative advantages in factor costs. Undoubtedly the export led strategy exhibits several distinct advantages. It has a larger value added multiplier (i.e. more favourable effect on GDP growth), and lesser need for investments, compared to import substitution strategy. Also the

value added for labour is high in export oriented industries. Thus from all accounts export orientation to industrial development seems to give better economic reward. For these reasons, industrial strategy must have a pronounced export orientation, but, as earlier mentioned, it does not exclude import substitution where it is economically advantageous to do so.

The basic principle underlying such an approach is to promote all such industries in which Nepal enjoys a comparative advantage irrespective of the markets for which these are intended, whether they be domestic or foreign. Viewed in this light, it would be more appropriate to designate this alternative as the Strategy of Comparative Advantage rather than merely as a combined strategy of Export Promotion and Import Substitution.

The results of the sensitivity analysis under this combined strategy on the basis of the assumptions set out in table 7.3 are presented in tables 7.8 and 7.9. It suggests that a GDP growth rate of 5.2 percent is achievable over the next five years even under moderate assumptions of import substitution and export promotion. The rates of import substitution and exports assumed are reasonable and attainable. Hence the results validate the general hypothesis that the strategy of comparative advantage maximizes the growth prospects and offers perhaps the best approach to Nepals' economic development.

Viewed from this angle, the Study Team considers this an acceptable target (or plan) scenario. As noted above, this scenario is suitable from a number of other considerations also. It has a comparatively low ICOR, thus enabling the attainment of a reasonably high growth rate within available investment resources. Also this alternative has high income, employment and export multiplier in comparison with other scenarios.

Table 7.8: Growth Rate Implication of Export Promotion & Import Substitution Strategy I

Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Ave. 91-95 Output	Grth Rt. 91-95 Val Add	Ave. 95-2000 Output	Grth Rt. 95-2000 Val Add
[illegible]	2.6	2.6	[illegible]	[illegible]	4.1	4.1	4.6	4.6	5.0	5.0	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	10.6	[illegible]	[illegible]	[illegible]	10.0	10.1	[illegible]	10.1	10.1	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	5.6	5.6	6.5	8.5	[illegible]	9.5	9.4	9.4	10.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	11.5	9.3	[illegible]	[illegible]	[illegible]	11.3	14.2	12.4	14.6	12.7	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	2.5	5.0		5.2	5.2	3.7	5.7	6.0	[illegible]	5.1	5.1	[illegible]	[illegible]
[illegible]	[illegible]	3.5	[illegible]		[illegible]	4.0	5.4	4.2	6.2	[illegible]	[illegible]	3.3	[illegible]	[illegible]
[illegible]	[illegible]	2.2	4.2	[illegible]	[illegible]	3.5	5.5	3.3	[illegible]	4.2	5.2	3.4	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	5.3	[illegible]	[illegible]	6.1	7.2	7.2	[illegible]	[illegible]	7.1	7.1	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	11.1	11.1	[illegible]	11.2	11.8	11.8	[illegible]	[illegible]	[illegible]	11.1	[illegible]	[illegible]
[illegible]	14.1	[illegible]	16.1	16.1	[illegible]	15.8	16.3	16.3	[illegible]	16.6	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	6.4	6.4	6.5	6.5	6.7	6.7	6.3	6.3	6.5	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	4.4	4.4	4.6	4.6	5.0	5.0	5.3	[illegible]	4.5	4.5	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	4.4	4.4	4.6	4.6	5.0	5.0	[illegible]	[illegible]	4.4	4.4	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	4.6	4.7	4.7	5.2	5.2	5.5	5.5	4.6	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	9.5	11.2	11.2	11.4	11.4	12.1	12.1	[illegible]	[illegible]	11.4	11.4	[illegible]	[illegible]
[illegible]	[illegible]	11.3	13.5	13.5	13.5	13.5	14.0	[illegible]	14.4	14.4	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	16.3	16.3	15.6	15.6	15.7	15.7	15.3	15.3	15.3	[illegible]	15.3	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	6.3	[illegible]	10.2	[illegible]	10.2	9.8	11.1	10.5	11.6	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	13.0	12.5	12.5	12.9	12.6	12.9	12.5	[illegible]	[illegible]	12.9	[illegible]	[illegible]	[illegible]
[illegible]	12.4	12.4	11.6	11.5	11.7	11.7	11.9	11.9	11.6	11.6	11.3	11.3	[illegible]	[illegible]
[illegible] Footwear & Leather Goods	9.5	9.5	9.6	[illegible]	[illegible]	9.7	10.0	[illegible]	10.2	10.2	9.6	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	4.4	7.5	7.5	7.5	7.5	8.1	8.1	8.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	8.5	6.5	6.5	6.4	6.4	7.1	7.1	[illegible]	[illegible]	7.2	7.2	[illegible]	[illegible]
[illegible]	[illegible]	15.0	17.6	17.6	16.3	16.9	17.3	17.3	17.5	17.5	16.3	[illegible]	[illegible]	[illegible]
[illegible]	4.4	15.9	5.2	15.6	[illegible]	14.7	5.7	14.4	[illegible]	[illegible]	5.3	14.5	[illegible]	[illegible]
[illegible]	3.5	3.5	[illegible]	[illegible]	7.4	7.4	7.9	7.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	5.7	9.5	6.5	10.1	[illegible]	10.2	7.2	10.6	[illegible]	[illegible]	6.7	[illegible]	[illegible]	[illegible]
[illegible]	2.7	2.7	4.3	4.3	[illegible]	4.4	4.9	4.3	[illegible]	5.2	4.3	4.3	[illegible]	[illegible]
[illegible] Metals	[illegible]	23.5	9.4	9.4	[illegible]	15.9	12.8	18.1	14.7	13.9	12.5	18.5	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	7.4	7.4	[illegible]	7.6	8.5	8.5	9.3	[illegible]	[illegible]	9.1	[illegible]	[illegible]
[illegible]	[illegible]	5.2	1.5	1.5	[illegible]	1.2	2.2	2.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	7.7	8.6	6.3	[illegible]	7.5	9.0	5.5	[illegible]	6.4	[illegible]	6.3	[illegible]	[illegible]
[illegible] & Water	4.6	4.5	5.5	5.5	5.7	5.7	6.2	6.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	11.0	10.5	[illegible]	[illegible]	[illegible]	10.8	10.8	[illegible]	[illegible]	[illegible]	10.8	[illegible]	[illegible]
[illegible]	[illegible]	7.1	[illegible]	[illegible]	8.4	7.0	8.7	7.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	5.6	[illegible]	[illegible]	2.7	5.9	2.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	3.7	[illegible]	[illegible]	5.5	4.2	6.1	4.7	[illegible]	[illegible]	[illegible]	4.3	[illegible]	[illegible]
[illegible]	6.0	4.2	[illegible]	4.2	6.0	2.2	6.0	2.7	6.0	5.1	[illegible]	3.7	[illegible]	[illegible]
[illegible]	[illegible]	3.7	6.2	[illegible]	[illegible]	4.1	6.9	4.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Export Promotion [illegible] Import Substitution	[illegible]	4.3	6.1	4.3	[illegible]	5.2	6.5	5.5	7.1	[illegible]	6.4	5.2	[illegible]	[illegible]

Table 7.9: Growth Rate Implication of Export Promotion and Import Substitution Strategy II

(Percent)

S.N	Sectors	1991		1992		1993		1994		1995		Avg. Grth Rt. 91-95		Avg. Grth Rt. 95-2011	
		Total Output	Value Added	Total Output	Value Added	Total Output	Value Added	Total Output	Value Added	Tota. Output	Value Added	Output	Val Add	Output	Val Add
	1 Food Crops	2.5	2.5	3.9	3.9	4.1	4.1	4.6	4.6	4.9	4.9	4.1	4.1	5.77	5.77
	2 Cash	6.7	6.7	7.3	7.3	7.3	7.9	8.0	8.3	8.1	8.1	8.1	8.1	8.21	8.21
X	3 Tobacco	5.6	5.6	8.5	8.5	8.5	8.5	9.4	9.4	10.1	10.1	8.4	8.4	11.25	11.25
	4 Sugarcane	14.3	13.2	16.9	15.1	19.8	14.9	17.1	15.3	17.3	15.4	16.5	14.8	19.57	19.57
x	5 Other Food Crops	4..	4.0	5.6	5.6	5.9	5.9	6.5	6.5	7.0	7.0	5.8	5.8	8.32	8.32
x	6 Livestocks & Fisheries	4.8	3.8	5.6	4.3	6.6	4.7	6.7	5.2	7.1	5.5	6.0	4.6	8.21	7.9
	7 Forestry	3.7	2.2	4.9	3.3	5.1	3.5	5.6	3.9	5.9	4.3	5.0	3.4	7.49	5.74
	8 Mining & Quarrying	9.1	9.1	7.1	7.1	7.4	7.4	8.7	8.7	8.8	8.8	8.4	8.4	11.49	11.69
X	9 Dairy Products	13.3	13.3	15.4	15.4	15.3	15.3	15.8	15.8	16.0	16.0	15.2	15.2	17.47	17.47
X	10 Textiles	13.6	13.6	15.6	15.6	15.4	15.4	16.0	16.0	16.2	16.2	15.4	15.4	17.11	17.11
	11 Other Food Products	6.0	6.0	6.3	6.3	6.5	6.5	6.7	6.7	6.9	6.9	6.5	6.5	7.76	7.76
	12 Drink & Oil Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01	7.01
	13 Tobacco Manufacture	2.8	2.8	4.4	4.4	4.5	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16	7.16
	14 Beverages	2.9	2.9	4.2	4.3	4.4	4.4	4.8	4.8	5.1	5.1	4.3	4.3	6.88	6.88
x	15 Tea	9.7	9.7	11.6	11.6	11.7	11.7	12.5	12.5	13.1	13.1	11.7	11.7	15.63	15.63
X	16 Sugar & Confectionery	16.0	16.0	18.1	18.1	17.7	17.7	18.0	18.0	18.1	18.1	17.6	17.6	18.05	18.05
x	17 Carpets	27.9	27.9	27.5	27.5	27.9	27.9	28.3	28.3	28.5	28.5	28.0	28.0	23.66	23.66
x	18 Cotton	15.9	16.7	18.5	20.0	18.2	19.6	18.6	20.0	18.7	20.1	18.0	19.3	19.53	21.34
x	19 Jute	16.4	16.4	16.0	16.0	16.3	16.3	16.7	16.7	16.9	16.9	16.5	16.5	16.02	16.02
x	20 Silk Cloth	8.5	8.5	7.7	7.7	7.8	7.8	7.9	7.9	7.9	7.9	8.0	8.0	8.19	8.19
xX	21 Footwear & Leather Goods	12.1	12.1	12.5	12.5	12.9	12.9	13.5	13.5	14.0	14.0	13.0	13.0	14.14	14.14
X	22 Paper	10.7	10.7	10.1	10.1	10.4	10.4	11.3	11.3	11.9	11.9	10.9	10.9	14.72	14.02
X	23 Mineral & Fuel Product	8.5	8.5	6.6	6.6	6.5	6.5	7.2	7.2	7.9	7.8	7.3	7.3	9.45	9.45
X	24 Pharmaceuticals	21.8	21.8	23.7	23.7	22.3	22.3	22.1	22.1	21.7	21.7	22.3	22.3	21.72	21.72
X	25 Chemicals	4.4	15.8	5.1	15.5	5.2	14.6	5.6	14.3	5.9	14.0	5.2	14.8	8.03	8.44
	26 Wood & Furniture	9.5	9.5	7.4	7.4	7.4	7.4	7.9	7.9	8.3	8.3	8.1	8.1	8.81	8.81
X	27 Paper & Printing	8.7	10.5	7.6	11.3	8.0	11.5	8.7	12.2	9.3	12.7	8.0	11.6	11.44	13.13
	28 Plastic & Rubber Products	2.7	2.7	4.2	4.3	4.4	4.4	4.9	4.9	5.2	5.2	4.3	4.3	7.03	7.03
X	29 Basic & Fabricated Metals	13.9	35.9	9.8	15.0	10.4	15.4	12.8	17.7	14.7	19.4	13.5	29.7	19.94	24.37
X	30 Electrical & Electronic Goods	10.4	10.4	9.9	9.9	10.4	10.4	11.4	11.4	12.3	12.3	10.9	10.9	14.62	14.92
	31 Motor Industries	5.2	5.2	1.4	1.4	1.1	1.1	2.0	2.0	2.9	2.9	2.5	2.5	9.13	9.13
	32 Construction	13.3	7.7	8.6	7.3	8.5	6.0	9.0	6.6	9.3	6.4	9.5	6.9	10.49	9.59
	33 Gas, Electricity & Water	4.4	4.4	5.4	5.4	5.9	5.5	6.0	6.0	6.4	6.4	5.5	5.5	8.25	8.25
x	34 Hotel & Restaurants	15.8	15.8	15.5	15.5	15.9	15.9	16.2	16.2	16.5	16.5	16.0	16.0	15.79	15.79
x	35 Transport & Communication	11.4	10.4	11.3	10.5	12.4	11.0	13.1	11.6	13.6	12.1	12.5	11.1	13.99	10.54
	36 Wholesale & Retail Trade	5.4	2.9	5.4	2.6	5.4	2.5	5.5	2.5	5.5	2.4	5.5	2.6	5.79	3.43
	37 Banking Ins. Estate & Dwelling	4.2	3.4	5.1	3.9	5.3	3.9	5.7	4.4	6.1	4.6	5.3	4.0	7.66	6.16
	38 Government Services	4..	4.2	6.0	4.2	6.0	2.2	6.0	2.7	6.0	5.1	6.0	3.7	8.01	4.33
	39 Other Services	4.6	4.3	7.0	4.6	7.2	4.3	7.8	5.2	8.3	5.6	7.4	5.0	9.69	6.44
Note:	X = Export Promotion	6.4	4.9	7.0	5.8	7.2	5.8	8.0	6.5	8.5	7.1	7.5	6.0	10.21	8.60
	x = Import Substitution														

One more scenario was developed by extending import substitution and export promotion to higher levels (Table 7.9). As is expected, the growth rate is even better under these assumptions. However, it may be difficult to realize these assumptions in practice. The purpose of developing this scenario was merely to show that the strategy was basically sound and that the more intensely it can be followed the more rewarding the outcome.

7.2.4 Poverty Alleviation Strategy and Its Implications

A sensitivity analysis was also carried out to examine in a very broad way the implications on the overall economy of putting more emphasis on expanding the production of some essential consumer goods and services for the benefit of the poor. But it should be noted that in such an analysis the essential prerequisite is to identify the share of population living below the subsistence level, to examine the set of measures to be taken to increase their income and to relate the incremental demands generated from the altered income pattern to additional production of goods and services to meet them. Such a detailed analysis will require a separate study. Here, an attempt has been made to derive broad implications at the aggregate level, by increasing in an ad hoc manner the availability of some of the essential consumer goods.

In this exercise, consumption of food crops, textile goods, real estate, dwelling and services (which include education and health) was increased arbitrarily above the reference run level by one to four percent (table 7.3). This gives the output and value added growth rate of 6.1 and 5.1 percent for 1990-95 and 8.07 and 7.17 percent for 1995-2000 (table 7.10). A further implication is that it necessitates a sizable investment.

7.3 Intersectoral Linkages and Investment Planning

One advantage of input/output modelling exercise is that it provides the broad dimension of intersectoral linkages in output generation in terms of both forward and backward linkages by

which it is possible to identify the sectors demanding higher priority for generating growth momentum. Although such analysis is based on prevailing technological considerations, it also can be made to examine the likely effect of technological changes on the listing of priorities. Such an examination can be carried out by introducing new technology coefficients in the model, depending on the technology proposed to be adopted.

First of all with the help of inverted matrix both backward and forward linkages coefficients in 39 sectors were calculated and then totals were obtained by simply adding these two. In the table 7.12 the industries ranked on these lines are presented. From the table it can be observed that in general the forward linkage co-efficients are higher than the backward ones. Among the industries, the grain milling industry has the highest backward linkage effect followed by tea, footwear, sugar, dairy, wood & furniture, other food, cement and chemical industries, in that order. On the other hand, only few industries such as paper, electric and electronic goods industries show a high level of forward linkage effect, followed by cement, jute and canning industries. These results are to be anticipated in view of low industrial base on the one hand and almost total absence of intermediate industries on the other. When total linkage coefficients are closely examined, only two industries paper and electronics show relatively high values followed by tea and cement.

This backward and forward linkage analysis, thus, clearly highlights the fact that in designing long term investment planning it is necessary to give adequate attention to industrial diversification and overall restructuring.

Table 7.20: Growth Rate Implication of Poverty Alleviating Strategy

Percent

S N	Sectors	1991 Total Output	1991 Value Added	1992 Total Output	1992 Value Added	1993 Total Output	1993 Value Added	1994 Total Output	1994 Value Added	1995 Total Output	1995 Value Added	Avr. 90-95 Output	Grth Rt. 90-95 Va. Add	Avr. 95-2000 Output	Grth Rt. 95-2000 Va. Add
X	1 Food Crops	4.0	4.0	5.4	5.4	5.6	5.6	6.1	6.1	6.4	6.4	5.5	5.5	7.55	7.55
	2 Jute	6.5	6.5	7.7	7.7	7.6	7.6	7.9	7.9	7.9	7.9	6.0	6.0	6.07	6.07
	3 Cotton	[illegible]	.2	2.7	2.7	2.3	2.3	2.9	2.9	3.5	3.5	2.3	2.3	7.52	7.52
	4 Sugarcane	6.2	7.4	11.3	9.6	11.5	9.7	12.2	10.4	12.8	11.0	11.4	9.6	15.51	13.57
	5 Other Cash Crops	3.3	3.3	4.6	4.6	4.3	4.9	5.4	5.4	5.7	5.7	4.6	4.6	7.35	7.35
	6 Livestocks & Fisheries	3.9	2.6	5.1	3.6	5.3	4.0	5.8	4.2	6.1	4.7	5.2	3.9	7.55	6.44
	7 Forestry	3.8	2.0	4.7	3.1	4.8	3.2	5.3	3.7	5.6	4.0	4.6	3.2	7.39	5.64
	8 Mining & Quarrying	5.5	5.5	3.3	3.3	3.2	3.2	4.2	4.2	5.2	5.2	4.3	4.3	5.55	5.55
	9 Dairy Products	7.1	7.1	9.3	9.3	9.4	9.4	10.0	10.0	10.6	10.6	9.3	9.3	13.33	13.33
	10 Tanning	10.2	10.2	12.4	12.4	12.5	12.5	13.3	13.3	14.0	14.0	12.4	12.4	17.04	17.04
	11 Other Food Products	6.0	6.0	6.4	6.4	6.5	6.5	6.7	6.7	6.9	6.9	6.5	6.5	7.76	7.76
	12 Grain Mill Products	3.0	3.0	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.5	4.5	7.01	7.01
	13 Tobacco Manufacture	2.8	2.8	4.4	4.4	4.6	4.6	5.0	5.0	5.3	5.3	4.4	4.4	7.16	7.16
	14 Beverages	2.9	2.9	4.3	4.3	4.4	4.4	4.9	4.9	5.2	5.2	4.3	4.3	6.83	6.83
	15 Tea	9.2	9.2	11.0	11.0	11.2	11.2	11.9	11.9	12.5	12.5	11.1	11.1	15.19	15.19
	16 Sugar & Confectionery	7.6	7.6	10.2	10.2	10.3	10.3	11.1	11.1	11.7	11.7	10.2	10.2	14.51	14.51
	17 Carpets	6.5	6.5	7.6	7.5	7.5	7.6	7.9	7.9	7.9	7.9	6.0	6.0	[illegible]	[illegible]
X	18 Textiles	3.4	3.4	6.1	6.1	6.0	6.0	7.5	7.5	7.5	7.5	6.1	6.1	8.85	8.85
	19 Garments	6.0	6.0	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.77	7.77
	20 Jute Goods	6.5	6.5	7.7	7.7	7.7	7.7	7.8	7.8	7.8	7.8	7.9	7.9	8.05	8.05
X	21 Footwear & Leather Goods	6.3	6.3	6.2	6.2	6.1	6.1	6.3	6.3	6.4	6.4	6.3	6.3	6.49	6.49
	22 Cement	4.6	4.6	3.9	3.9	3.7	3.7	4.2	4.2	4.6	4.6	4.2	4.2	6.64	6.64
	23 Mineral & Fuel Product	6.0	6.0	3.9	3.9	3.6	3.6	4.1	4.1	4.6	4.6	4.4	4.4	6.71	6.71
	24 Pharmaceuticals	7.1	7.1	10.4	10.4	10.3	10.3	11.4	11.4	12.4	12.4	10.3	10.3	16.57	16.57
	25 Chemicals	2.7	14.0	3.3	13.5	3.2	12.5	3.5	12.0	3.6	11.6	3.3	12.7	4.56	5.33
	26 Wood & Furniture	9.4	9.4	7.3	7.3	7.3	7.3	7.6	7.6	8.2	8.2	8.0	8.0	8.71	8.71
	27 Paper & Printing	3.6	7.2	4.1	7.7	4.1	7.5	4.5	7.6	4.3	8.0	4.2	7.7	6.02	7.34
	28 Plastic & Rubber Products	2.7	2.7	4.3	4.3	4.4	4.4	4.9	4.9	5.2	5.2	4.3	4.3	7.03	7.03
	29 Basic & Fabricated Metals	16.[illegible]	26.2	6.9	6.9	7.4	10.8	9.9	15.1	12.1	17.1	10.6	15.6	16.65	21.65
	30 Electric & Electronic Goods	4.0	4.0	3.0	3.0	2.9	2.9	3.5	3.5	4.2	4.2	3.5	3.5	6.63	5.59
	31 S.S.E. Industries	5.3	5.3	1.5	1.5	1.2	1.2	2.1	2.1	3.0	3.0	2.6	2.6	7.91	7.91
	32 Construction	12.[illegible]	7.7	8.6	7.9	8.5	6.0	9.0	6.6	9.3	5.4	9.5	5.9	10.49	8.59
	33 Gas, Electricity & Water	3.9	3.9	4.6	4.6	5.0	5.0	5.4	5.4	5.7	5.7	5.0	5.0	7.34	7.34
	34 Hotel & Restaurants	6.9	6.9	7.5	7.5	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.93	7.93
	35 Transport & Communication	7.1	5.6	6.7	5.4	6.9	5.5	7.1	5.6	7.3	5.9	7.0	5.7	9.01	4.97
	36 Wholesale & Retail Trade	5.[illegible]	3.0	5.5	2.7	5.5	2.6	5.6	2.6	5.6	2.5	5.6	2.7	5.63	2.45
X	37 Banking Real Estate & Dwelling	6.2	4.4	6.0	4.7	6.2	4.6	6.5	5.2	6.9	5.5	6.2	4.9	7.85	6.47
	38 Government Services	6.[illegible]	4.2	6.0	4.1	6.0	2.2	6.0	2.7	6.0	3.1	6.0	3.7	6.02	4.85
X	39 Other Services	6.[illegible]	4.4	6.9	4.6	7.[illegible]	4.7	7.4	4.6	7.7	5.2	7.2	4.3	8.26	6.42
	Note: X = Basic Needs	6.5	4.4	5.9	5.1	6.0	4.9	6.4	5.4	6.7	5.5	6.1	5.1	6.07	7.07

Table 7.11: Investment Implications of Alternative Strategies

Sector	Export-Import Invest. 1990/95	Export-Import Invest. 1995/2000	Export Promotion Invest. 1990/95	Export Promotion Invest. 1995/2000	Import Substitution Invest. 1990/95	Import Substitution Invest. 1995/2000
Food Crops						
Jute						
Tobacco						
Sugarcane						
Other Cash Crops						
Livestock & Fisheries						
Forestry						
Agriculture Subtotal	21564297	46004239	21189241	45473750	20788314	44504065
Mining & Quarrying	134200	338662	76254	234957	133350	326380
Dairy Products	112749	265625	97537	236800	120671	265563
Canning	6551	15463	5107	13553	6428	15116
Other Food Products	155176	260366	155060	260163	154693	259474
Grain Mill Products	463345	949325	463224	949293	463209	949264
Tobacco Manufacture	56249	119271	56249	119271	56249	119271
Beverages	5451	11019	5446	11015	5043	10477
Tea	6830	16993	6760	16670	6700	16702
Sugar & Confectionery	[illegible]	770495	241432	622629	333459	768971
Carpets	663476	1122038	659113	1121409	283199	419369
Textiles	476333	940342	316524	601762	446536	881330
Garments	703606	1192711	702215	1190916	375718	557727
Jute Goods	166173	237170	163302	233384	104596	156434
Footwear & Leather Goods	74159	131245	62536	94178	53592	91465
Cement	665338	1073256	322916	661554	661259	1065791
Mineral & Fuel Products	225171	423941	129272	256537	223497	421065
Pharmaceuticals	277546	730699	143546	443580	276645	729326
Chemicals	146036	107927	130247	132780	144865	105070
Wood & Furniture	95011	175130	94309	174016	94566	174441
Paper & Printing	110135	168084	93955	145382	109365	166835
Plastic & Rubber Products	47742	101766	47735	101758	47586	101524
Basic & Fabricated Metals	681018	2777366	688950	2238279	1009535	3094031
Electric & Electronic Goods	112301	230411	46367	114866	107715	[illegible]
N.E.C. Industries	9115	39079	3625	36376	6946	37323
Construction	3106035	6342618	3106035	6342618	3106035	6342618
Gas, Elect., Water, Trans. & Com.	36313666	44392604	34742325	43671173	27227423	34533124
Hotel & Restaurant						
Wholesale & Retail Trade						
Subtotal	2115134	2765449	2102436	2750641	1573275	2056613
Banking, Real Estate & Dwelling	24168775	45075243	23501787	44223006	21744346	417[illegible]346
Government Services						
Other Services						
Subtotal	[illegible]	5226010	[illegible]	5176542	3398429	[illegible]
	95768[illegible]	162015446	92693506	157652060	83065157	145456357

Table 5.11: Investment Implications of Alternative Strategies (contd.)

Sectors	Alt. Empl.-Import Invest. 1990-95	Alt. Empl.-Import Invest. 1995-2000	Alt. Export Promot. Invest. 1990-95	Alt. Export Promot. Invest. 1995-2000	Alt. Import Subst. Invest. 1990-95	Alt. Import Subst. Invest. 1995-2000
Food Crops						
Jute						
Tobacco						
Sugarcane						
Other Cash Crops						
Livestock & Fisheries						
Forestry						
Agriculture Subtotal	23646569	51953010	23493055	53010665	23646569	51953010
Mining & Quarrying	[illegible]	445563	75540	241617	164997	445563
Dairy Products	[illegible]	438424	97632	237128	179249	438424
Canning	[illegible]	15143	5708	15255	6437	15143
Other Food Products	[illegible]	260066	155301	263976	154906	260066
Grain Mill Products	[illegible]	949309	463311	949545	463029	949309
Tobacco Manufacture	56249	119271	56249	119271	56249	119271
Beverages	[illegible]	10456	6013	13335	5046	10456
Tea	[illegible]	17774	7063	17774	6751	16945
Sugar & Confectionery	[illegible]	1200119	243420	628633	478616	1200119
Carpets	[illegible]	3939729	1476065	3939729	283474	420207
Textiles	[illegible]	2667160	260291	753553	1101295	2667160
Garments	[illegible]	2013635	974061	2013635	376616	560437
Jute Goods	[illegible]	156224	103179	156224	107069	166314
Footwear & Leather Goods	[illegible]	330003	110305	330003	81954	163617
Cement	[illegible]	2207274	331664	687949	960030	2207274
Mineral & Fuel Products	[illegible]	433659	130681	256727	225700	433659
Pharmaceuticals	[illegible]	1078065	150463	449159	409388	1078065
Chemicals	[illegible]	106719	133935	145559	145307	106719
Wood & Furniture	[illegible]	176467	35114	176425	95372	176467
Paper & Printing	[illegible]	285394	119710	229733	141506	285394
Plastic & Rubber Products	[illegible]	101543	48165	100949	47592	101543
Basic & Fabricated Metals	[illegible]	3303447	700123	2281588	1013380	3303447
Electric & Electronic Goods	[illegible]	392091	57906	147258	158913	392091
N.E.C. Industries	[illegible]	39017	12406	46319	9456	39017
Construction	[illegible]	6342616	3106035	6342618	3106035	6342616
Gas, Elect., Water, Trans. & Com.	[illegible]	31344452	56786916	93367261	27651161	35334757
Hotel & Restaurant						
Wholesale & Retail Trade						
Subtotal	[illegible]	5066650	3200306	5672290	1556454	[illegible]
Banking, Insurance & Dwelling	[illegible]	48577002	29776443	60169667	22400557	[illegible]
Government Services						
Other Services						
Subtotal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	66710035	[illegible]

Table 7.12: Ranking of Industries in Terms of Backward & Forward Linkages

		Forward Linkage		Total
[illegible]	[illegible]	2.5[illegible]946	Mining and Quarring	4.[illegible]41
Tea	[illegible]	2.476475	Paper and Printing	3.[illegible]35
[illegible]	[illegible]	2.197553	Electric & Electronic Goods	3.[illegible]34
[illegible]	[illegible]	2.061453	Sugarcane	3.[illegible]44
[illegible]	[illegible]	2.044156	Gas,Electricity & Water	3.[illegible]46
[illegible]	[illegible]	1.957402	Mineral & Fuel Products	3.[illegible]37
[illegible]	[illegible]	1.907321	Tea	3.[illegible]22
[illegible]	[illegible]	1.864226	Cement	3.[illegible]32
[illegible]	[illegible]	1.800022	Wood & Furniture	3.[illegible]13
[illegible]	[illegible]	1.[illegible]81	Banking Real Est. & Dwel.	3.[illegible]67
[illegible]	[illegible]	1.691908	Grain Mill Products	3.[illegible]35
[illegible]	[illegible]	1.641246	Jute	3.[illegible]43
[illegible]	[illegible]	1.636977	Basic &Fabricated Metals	3.[illegible]03
[illegible]	[illegible]	1.593338	Transport & Communication	3.[illegible]42
[illegible]	[illegible]	1.591733	Sugar and Confectionery	3.[illegible]08
[illegible]	[illegible]	1.573018	Tobacco	3.[illegible]49
[illegible]	[illegible]	1.559161	Canning	3.[illegible]77
[illegible]	[illegible]	1.541739	Wholesale & Retail Trade	3.[illegible]03
[illegible]	[illegible]	1.[illegible]79	Other Services	3.[illegible]38
[illegible]	[illegible]	1.367664	Footwear and Leather Goods	2.[illegible]44
[illegible]	[illegible]	1.339027	Hotel & Resturants	3.[illegible]19
[illegible]	[illegible]	1.315473	Forestry	2.[illegible]30
[illegible]	[illegible]	1.307[illegible]26	Livestocks and Fisheries	2.763[illegible]30
[illegible]	[illegible]	1.275446	Dairy Prducts	2.761646
[illegible]	[illegible]	1.225129	Food Crops	2.742729
[illegible]	[illegible]	1.174347	Other Food Products	2.741[illegible]84
[illegible]	[illegible]	1.146342	Chemicals	2.709[illegible]45
[illegible]	[illegible]	1.111929	Jute Goods	2.[illegible]93
[illegible]	[illegible]	1.096504	Beverages	2.[illegible]58
[illegible]	[illegible]	1.[illegible]23	Pharmaceuticals	2.[illegible]26
[illegible]	[illegible]	1.091807	Other Cash Crops	2.[illegible]32
[illegible]	[illegible]	1.065221	Carpets	2.[illegible]37
[illegible]	[illegible]	1.022483	Garments	2.[illegible]29
[illegible]	[illegible]	1.011137	Government Services	2.[illegible]87
[illegible]	[illegible]	1.001755	Textiles	2.[illegible]79
[illegible]	[illegible]	1.000000	Construction	2.[illegible]56
[illegible]	[illegible]	1.000000	Tobacco Manufacture	2.[illegible]94
[illegible]	[illegible]	1.000000	Plastic & Rubber Products	3.[illegible]75

7.4 Employment Effect of Alternative Strategies

Various alternative scenarios covering 1990-95 and 1995-2000 is given in the table 7.13. From all alternative scenarios it seems that the increase in employment in the economy will be substantially higher than population growth. Although the combined employment effect of export promotion with import substitution strategy is much more pronounced, the effect of the export promotion strategy is almost as strong as that of import substitution strategy. Since this sensitivity analysis provides only an overall picture, it is necessary to undertake a more in-depth analysis of the working labour force classified on the basis of occupational pattern to prepare a detailed manpower plan.

[illegible] Employment Implication of Alternative Scenarios

[illegible] Scenario	1990	1995	Av. Grt. Rate 1990-95	2000	Av. Grt. Rate 1995-2000
[illegible]	9304153	11779087	4.8	1667[illegible]	7.[illegible]
[illegible]	9304153	11920991	5.1	1705708[illegible]	7.4[illegible]
[illegible] I	9304153	11840100	4.9	16825[illegible]	7.[illegible]
[illegible] Import [illegible]	9304153	1[illegible]65628	5.7	18[illegible]	[illegible]

Chapter 8

CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The purpose of the present exercise was two fold:

a. Developing an industrial planning model as a tool for industrial planning; and

b. To initiate a debate on specific industrial development scenarios, which are consistent, feasible, and at the same time confirm to the goals of development chosen by the society, and provide corresponding suitable policy recommendations.

The first purpose has been reasonably fulfilled. An integrated macro-econometric and input/output model has been formulated. The macro-econometric model has been designed to ensure the feasibility of a selected development program within the country's macro-economic constraints and the input/output model to provide the test of detailed sectoral consistency and the demand needs of the economy in conformity with its multiple goals of development.

Given the small size of the industrial sector in the Nepalese economy and its heavy interdependence on the growth of other sectors, setting up of a suitable macro-economic scenario was regarded as a prerequisite for formulating any detailed industrial development strategy.

Setting up of a development strategy needs proper identification of the development objectives and a realistic assessment of the resources base and factor endowment of the economy, not necessarily in a static but in a dynamic sense, taking into consideration a long-term view of changes in technology and international environment. For a small and poor economy like Nepal, with skewed resource distribution, a proper choice of industrial structure conforming to her comparative

advantage and making her fully internationally price competitive is a must. Indeed this asked for an exercise combining pragmatism with imagination.

8.1.1 The Macro Economic Scenario

The present model simulation warns that if no positive and prudent policy packages are introduced in near term, the economy in its past tempo will not grow beyond 3 to 3.5 percent per annum. This growth rate may not even absorb the growing labour force, not to talk of absorbing back log of unemployment or under employment. The per capita consumption growth will be almost stagnant. There will be mounting trade imbalance. All these may prove to be socially and politically unacceptable and throw the country into complete disequillibrium.

The major policy instrument identified for accelerating this low growth is increase in aggregate investments and their more efficient use by choosing both better technology and appropriate sectoral allocations. In the macro scenario emphasis has been given to the aggregate increase in the investible resources. In the sectoral scenario (input/output approach), their allocation and efficiency considerations have been mainly explored.

The investible resource base of the country has been divided into two: foreign and domestic. Any attempt to increase these resources has a price (i.e. a sacrifice) to pay. The external resources can be increased either by more aid (borrowing or grant), or by more exports (and in some way less imports). Although grant has no economic price to pay (it may have some political price), borrowing has to be paid back in principal and interest. Besides, in many cases it has explicit or implicit conditionality. The availability of external grant is not infinite and the present prospect of more grants are not very rosy. The debt service ratio in Nepal is now not very high; at the same time it ca..not be stretched very much. Taking all these factors an upper limit to growth of grants and borrowings have been placed at 12 and 14 percent per annum, respectively.

Similarly a growth in exports both in goods and services (net) will give additional foreign saving. But more exports will need (i) generating more export surplus in the domestic market, and (ii) more export demand abroad, mainly by improving on the price competitiveness. In this context, it has been assumed that an export growth maximum of around 8 percent will be possible, raised from the long-term trend of 6 percent, over the next five year horizon.

Coming to domestic resources, two areas are located (i) private sector and (ii) government sector. In the private sector by better operations of financial intermediaries, the credit availability could be raised from a trend growth of 9.89 percent to a growth of 12 percent. This will entail an increase in savings propensity by more than two to three points: given the structure of the Nepalese society, and low per capita income, and the stickiness of private savings behaviour, this proposed increase of savings can be regarded as already on the high side.

The public sector increase in financial resources arise primarily from government's tax and non-tax revenue (net of expenditures) and deficit financing. Deficit financing indeed adds to the resource base as long as it is non-inflationary. In less developing countries, with large unused physical resources, deficit finance has indeed acted as one of the powerful tools for resource mobilization.

In the present exercise a deficit of upto 2.4 percent of GDP has been found acceptable containing the rate of inflation below 10 to 11 percent. The growth of public saving has been stipulated to come mainly from (i) economizing subsidies (ii) improving tax collection, and (iii) increasing efficiency in budgetary management.

The resultant increase in public sector investment came to 10 percent per annum as compared to a trend growth of 7.5 percent given in the base run.

Against this policy inputs, a growth rate of as high as 4.5 percent value added over the next five years and a long term growth of nearly 6 percent have been seen feasible by the simulation of the macro-model. This will give an employment growth of 2.8 percent and consumption growth of 4.6 percent during the period 1990 to 1995. On the other hand the current account deficit will reach almost 14.7 percent of GDP by the end of 1994/95. This scenario has been regarded as a minimum, given the compulsions of development objectives of the country. In the input/output scenario, a further exploration has been made in order to enhance the growth potential of the country by a restructuring of industry by intersectoral investment adjustments.

8.1.2 The Inter-Sectoral Scenario

While the macro-economic scenario has shown the need for increasing investment resources in aggregate, the sectoral (input-output) analysis has attempted to deal with the issue of sectoral allocation as well as efficiency considerations.

Within the limits set by the availability of resources (given through the macro-model), areas of thrust for future growth as well as restructuration requirements have therefore been assessed in the input-output model. Particular attention has been given to identify an optimal allocation of resources within the manufacturing sector, in line with the country's comparative advantages. Main criteria which have been kept in view in the analysis include: growth of value added, employment growth, social returns (direct and indirect), elasticity of resource base, demand level and economies of scale.

In designing the future industrial development strategy, it must be kept in mind that Nepal is still at a very early stage of industrial development, with the manufacturing sector having a share of only slightly more than 6 percent in the overall GDP. In addition, the major part of the overall manufacturing value added is produced by cottage and small industries. Therefore, significant changes in the existing industrial structure are required to accelerate growth and development of the industrial sector. A basic precondition is to promote improved linkages with the agricultural resource base and sectors producing intermediate goods. A rapid development of the tourism sector and of the hydro-power base will put industrial development on a sustainable basis and enhance Nepal's comparative advantages, while at the same time, industrial growth will have a significant impact in accelerating the development of other sectors.

The input-output model very clearly shows, first of all, that in order to attain a modest minimum level of growth the pattern of investment needs to be changed considerably, with a much greater emphasis on the manufacturing industry. This is also essential to increase the consumption standards of the people, to meet the wide range of requirements of other sectors, and to improve the situation of the balance of payments.

Secondly, different industrial development strategies have been considered and evaluated. Major development alternatives for the industrial sector in Nepal exist between a reliance on capital- or employment-intensive industrialization, and an outward-looking strategy versus focus on import substitution.

As shown by the sensitivity analysis, the highest impact in terms of overall growth of income and employment could be achieved by concentrating on those industries which contribute to an overall increase in capital productivity, and at the same time generate a significant level of employment. An export promotion strategy was found to have better results in terms of growth than an inward-looking approach. In actual practice, however, growth

has to go on in a parallel manner on the external and internal market based on the principle of comparative advantage. Import-substituting industries should be developed only if they are economically viable, and they can be made more viable if they produce simultaneously for the internal and the external market. Also, given the poor level of linkages of light industries with the local resource base, Nepal should focus on industries which produce intermediate products, thus contributing to a substitution of imports.

Therefore, in analyzing three scenarios, i.e. reliance on export promotion, focus on import substitution, and lastly a combined one, it was the last scenario which was most in line with Nepal's comparative advantages. Only in the last scenario, a GDP growth rate of 5.2 percent could be achieved.

On this overall basis, thirdly, the main areas which should receive major emphasis in the future industrial development strategy have been identified as follows:

(1) Export industries, where Nepal, due to its cheap labour, possesses significant comparative advantages. This includes sectors like carpets production, fruit and vegetable canning, jute, tea and footwear manufacture. These industries will also create significant employment opportunities.

(2) Industries which possess important backward and forward linkages; in particular paper and printing industries, electric and electronic goods, tea, cement. Except for tea, these are all import substitution sectors.

(3) "Wage goods" sectors, i.e. industries which are important from the point of view of increasing internal consumption levels. These are in particular textile, sugar, drugs and pharmaceuticals, food crops, grain milling.

As concerns heavy and basic industry sectors, production within Nepal cannot be recommended in the immediate future in view of high capital requirements implied, management expertise

required, as well as the need for significant economies of scale.

8.2 Recommendations

The above analysis shows the importance of the criterion of efficiency and the principle of comparative advantage for increasing productivity and reducing costs in the industrial sector. In how far the future growth potential can be realized will largely depend on whether the external market can be captured on the basis of price competitiveness. Any major price distortions through inappropriate taxes or subsidies should be avoided. At the same time, attention must be given to fulfilling the demands in the national economy.

The rapid industrial development of Nepal will depend on how far it succeeds in evolving and implementing an appropriate industrial policy in a speedy manner and at restructuring its industrial sector in the above sense. Only then can the modest anticipated growth level of 5.2 percent be achieved.

A detailed layout of the proposed sectoral investment pattern, including anticipated levels of output and employment is provided in a tabular form in Table 8.1.

The specific policy instruments in terms of taxes, subsidies, licensing, tariff rates etc. for achieving the recommended resource allocation can be worked out only by more detailed micro study which we understand is now in progress in a separate sector study initiated by UNIDO.

Before concluding, it is necessary to point out that the models developed are based on weak data base and therefore need continuous revision and updating. First of all, it is necessary to broaden the coverage of national accounts and improve the quality of existing data. Separate estimation of government and private savings is essential for examining either the crowding out phenomenon or the growing inefficiency in government. Likewise, Central bureau of Statistics should devote immediate

attention to computing sectoral savings and consumption figures, apart from providing reliable estimates of sectoral investment figures by both origin and destination for facilitating the researchers and policy planners in analyzing the flow of funds between sectors as also deriving capital flow matrix necessary for developing detailed resource plans and policy oriented dynamic models. Besides, the existing information and data are not sufficient to construct a reliable input/output table. Specially, the sectors like forestry, livestock, construction and private services have poor data base pertaining to their cost composition and detailed input structure, both domestic and imported. No reliable information on employment by sector is also available. Therefore, a system for undertaking periodic mini surveys in areas where data gaps are severe has to be developed so that continuous updating of cost structure of various sectors could be made as and when necessary.

Table [illegible] Export Promotion Scenario (5.2% Growth Rate)
[illegible] Diversification Plus Export Promotion

Sectors	Emp. 1990	Emp. 1995	Growth Rate	Emp. 2000	Growth Rate
Food [illegible]					
Jute					
Tobacco					
Sugarcane					
Other [illegible]					
Livestock [illegible]					
Forestry					
Agriculture & Allied	7564653	9683037	5.06	14294874	8.10
Mining & Quarrying	1992	2986	8.44	5671	13.69
Dairy Products	1820	3687	15.16	8231	17.40
Canning	295	604	15.39	1330	17.11
Other Food Products	4376	5993	6.49	8707	7.76
Grain Mill Products	14369	17889	4.48	25104	7.01
Tobacco Manufacture	9841	12223	4.43	17274	7.16
Beverages	1806	2229	4.30	3110	6.85
Tea	784	1364	11.71	2819	15.63
Sugar & Confectionery	6001	13481	17.57	32238	19.05
Carpets	11157	38321	27.99	110832	33.66
Textiles	10274	23485	17.98	57307	19.53
Garments	10910	23375	16.46	49137	16.02
Jute Goods	7956	11664	7.95	17279	8.18
Footwear & Leather Goods	1385	2554	13.02	4949	14.14
Cement	3245	5438	10.88	10482	14.02
Mineral & Fuel Products	47052	66990	7.32	105231	9.45
Pharmaceuticals	1340	3669	22.31	9802	21.72
Chemicals	4604	5940	5.23	6897	5.03
Wood & Furniture	6628	9778	8.09	15611	9.81
Paper & Printing	4380	6448	8.04	11082	11.44
Plastic & Rubber Products	1936	2388	4.29	3354	7.03
Basic & Fabricated Metals	7892	14820	13.43	36787	19.94
Electrical & Electronic Goods	1048	1757	10.89	3506	14.83
N.E.S. Industries	1015	1149	2.50	1698	8.13
Construction	128604	202216	9.47	331597	10.40
Gas, Electricity & Water	4993	6540	5.54	9723	8.36
Transport & Communication	25756	46499	12.54	89488	13.99
Hotel & Restaurant					
Wholesale & Retail Trade					
Subtotal	588679	922086	9.39	1528744	10.64
Banking, [illegible] & Insurance	20942	27081	5.28	39175	7.66
Government [illegible]					
Other Services					
Subtotal	806439	1099936	6.35	1544678	7.03
[illegible]	[illegible]	12265628	5.68	18386848	[illegible]

Table [illegible].1: Investment Plan: Plan Targetted Scenario (5.2% Growth)
Import Substitution Plus Export Promotion

Sectors	Invest. 1991	Invest. 1992	Invest. 1993	Invest. 1994	Invest. 1995	Invest. 1990-95	SHARE IN TOTAL	Invest. 1995-2000	SHARE IN TOTAL
Food Crops									
Jute									
Tobacco									
Sugarcane									
Other Cash Crops									
Livestock & Fisheries									
Forestry									
Agriculture Subtotal	3610660	3960447	4356778	5000968	5685444	21634297	22.59	46004239	28.39
Mining & Quarrying	16526	21330	22952	28919	35273	134900	0.14	326662	0.20
Dairy Products	15694	21214	23727	27817	32297	120749	0.13	265625	0.16
Canning	570	1128	1290	1539	1825	6651	0.01	15463	0.01
Other Food Products	25154	26255	30647	33959	37061	155176	0.16	260366	0.16
Grain Mill Products	56899	86556	93667	107047	119058	463246	0.48	949325	0.59
Tobacco Manufacture	[illegible]	10464	11393	13113	14651	56249	0.06	119271	0.07
Beverages	669	1012	1098	1262	1411	5451	0.01	11019	0.01
Tea	[illegible]	1179	1329	1571	1845	6830	0.01	16993	0.01
Sugar & Confectionery	43034	57797	65250	77047	90243	333570	0.35	770495	0.48
Carpets	[illegible]	109513	127921	149425	173755	659476	0.69	1122038	0.69
Textiles	51709	65243	93766	112047	132568	476333	0.50	940342	0.58
Garments	[illegible]	120398	137075	156840	178527	703626	0.73	1192711	0.74
Jute Goods	[illegible]	25858	32366	36531	40969	166173	0.17	237170	0.15
Footwear & Leather Goods	10631	13972	15451	17464	19621	79159	0.08	131245	0.08
Cement	113674	115700	123631	143729	164173	665838	0.70	1073356	0.66
Mineral & Fuel Products	[illegible]	38115	39645	47104	54588	225271	0.24	423941	0.26
Pharmaceuticals	35155	47724	53878	64345	76344	277546	0.29	730699	0.45
Chemicals	[illegible]	26090	26660	32183	36040	146296	0.15	107927	0.07
Wood & Furniture	[illegible]	16133	17384	19962	22516	95011	0.10	175130	0.11
Paper & Printing	[illegible]	21447	23748	27358	31245	122135	0.13	168084	0.10
Plastic & Rubber Products	[illegible]	8425	9669	11140	12450	47742	0.05	101766	0.06
Basic & Fabricated Metals	194935	83316	149494	197603	255870	881818	0.92	2777666	1.71
Electric & Electronic Goods	15548	16651	20569	24756	29456	112301	0.12	230411	0.14
N.F.E. Industries	[illegible]	1173	944	1698	2457	10115	0.01	39079	0.02
SUB TOTAL	851914.7	965003.61	1125791.	1334479.	1564246.	5951660.	6.21	12206563.	7.54
Construction	[illegible]	526152	683507	639115	658916	3106035	3.24	6342618	3.91
Electricity & TRANS.& COMMN.	5938950	6267427	6864664	7714660	8526634	35313556	36.87	44392804	27.40
Hotel & Restaurant									
Wholesale & Retail Trade									
Subtotal	[illegible]	398647	410731	451777	487168	2115184	2.21	2765443	1.71
Banking, Real Estate & Dwelling	[illegible]	4366690	4683353	5360078	5992765	24163775	25.23	45075243	27.82
Government Services									
Other Services									
Subtotal	[illegible]	732693	457723	574397	988219	3484392	3.64	5226210	3.23
	[illegible]	17164174	15612596	21995674	23903392	95768699	100.00	162015446	100.00

Table [illegible]: Plan Targetted Scenario (5.2% Growth)
Import Substitution Plus Export Promotion

Sectors	1990 Value Added	1995 Value Added	Growth Rate	Share in Total	2000 Val. Add.	Growth Rate	Share in Total
Food Crops	14910482	18173703	4.04	22.97	25231639	6.76	22.38
Jute	68296	110726	10.15	0.14	172123	9.22	0.15
Tobacco	65104	97547	8.38	0.12	165174	11.15	0.15
Sugarcane	199977	348479	11.75	0.44	674401	14.12	0.60
Other Cash Crops	6334712	8097333	5.07	10.23	11725199	7.69	10.40
Livestock & Fisheries	9410863	11369607	3.85	14.37	15616940	6.55	13.85
Forestry	3135882	3651321	3.42	4.62	4811215	5.67	4.27
Agriculture Subtotal	34156085	41646406	4.20	52.69	58396634	6.89	51.80
Mining & Quarrying	116901	167426	7.08	0.21	285650	11.28	0.25
Dairy Products	68560	115913	11.07	0.15	220079	13.65	0.20
Canning	3440	7155	15.76	0.01	15793	17.16	0.01
Other Food Products	224241	320462	6.60	0.41	466357	7.76	0.41
Grain Mill Products	913840	1137131	4.45	1.44	1595742	7.01	1.42
Tobacco Manufacture	223470	277856	4.45	0.35	392240	7.16	0.35
Beverages	7651	9541	4.62	0.01	13662	7.09	0.01
Tea	9117	15603	11.37	0.02	31805	15.28	0.03
Sugar & Confectionery	131459	227659	13.32	0.29	470656	15.71	0.42
Carpets	459235	958901	15.56	1.21	1606930	13.53	1.60
Textiles	190591	310274	10.00	0.39	542367	11.82	0.48
Garments	646057	1179163	12.79	1.49	2082677	12.05	1.85
Jute Goods	206912	362015	11.85	0.46	583669	10.02	0.52
Footwear & Leather Goods	72294	115315	9.79	0.15	186644	10.11	0.17
Cement	222200	326400	7.99	0.41	494358	8.66	0.44
Mineral & Fuel Products	329120	466461	7.22	0.59	724961	9.22	0.64
Pharmaceuticals	89917	195551	16.95	0.25	474743	19.37	0.42
Chemicals	116635	237575	14.90	0.30	325321	6.49	0.29
Wood & Furniture	169924	250441	8.07	0.32	396656	9.75	0.35
Paper & Printing	86977	140259	10.35	0.18	223852	9.80	0.20
Plastic & Rubber Products	52672	65272	4.30	0.08	91705	7.04	0.08
Basic & Fabricated Metals	223292	521303	18.46	0.66	1459672	22.87	1.29
Electric & Electronic Goods	79335	117275	8.13	0.15	195117	10.72	0.17
N.E.C. Industries	34623	39703	2.65	0.05	58588	8.09	0.05
Subtotal:	4658668	7564843	10.06	9.56	13144144	11.68	11.66
Construction	5744341	8028191	6.92	10.15	12691680	9.59	11.26
Electricity & Trans. Commun.	4117794	5775333	7.00	7.30	7809284	6.22	6.93
Hotel & Restaurant	758603	1266109	10.78	1.60	2001383	9.59	1.78
Wholesale & Retail Trade	1960267	2245900	2.84	2.84	2557795	2.63	2.27
Subtotal	12578205	17316533	6.61	21.89	25060342	7.67	22.23
Banking, Real Estate & Dwelling	4737014	5914225	4.32	7.48	8016931	6.27	7.11
Government Services	4246332	5064932	3.67	6.43	6302293	4.39	5.59
Other Services	1137002	1390390	4.11	1.76	1610893	5.43	1.61
Subtotal	5383334	6475322	3.76	8.18	8113186	4.61	7.20
	61493605	79118303	5.17	100.00	112731397	7.34	100.00

Bibliography

1. Abraham, W. I. (1975), Accounting for the Public Sector in Development Planning, Review of Income and Wealth, Series 21(4), P. 371-390

2. Barkay, R. M. (1982), National Accounting with limited Data: Lessons from Nepal, Review of Income and Wealth, Series 28(3), P. 305-323

3. Blitzer, C. R., Clark P. B. Taylor L., (1975), Economy-wide Models and Development Planning (Oxford University Press)

4. Central Bureau of Statistics (1984), Manual on National Accounts of Nepal 1976/77), HMG. Nepal.

5. Chenery, H. B. and Msyrqvim (edited) 1986, Industrialization and Growth - A Comparative Analysis (Oxford University Press).

6. Dervis, K., Melo J. D., Robinson S., (1982) General Equilibrium Models for Development Policy (Cambridge University Press)

7. Desai, M. J. (1973), Macro Economic Models for India : A survey, Sankhya (Series B), P. 169-206.

8. ESCAP (1982), Macro-economic Modelling in the ESCAP Region (Proceedings of the Regional Seminar on an Interlinked Country Model System).

9. Gupta, S. P. (1977), Alternative Growth Strategies for Korea (1975-1990), IBRD Staff Working Paper No. 250.

10. Gupta, S. P. (1989), Planning and Development in India : A critique (Applied Publishers Pvt. Ltd., New Delhi).

11. Islam, R. (ed 1985), Strategies for Alleviating Poverty in Rural Asia, ARTEP/ILO

12. Islam, R. (ed) (1987), Rural Industrialization and Employment in Asia (ILO/ARTEP, New Delhi).

13. Islam, R., Khan, A. R. and Lee E. (1982), Employment and Development in Nepal (ILO/ARTEP, Bangkok).

14. Johson, L., (1960), A Multi-sectoral Study of Economic Growth, North Holland.

15. Khanal, D. R. (1988), Public Expenditure in Nepal: Growth pattern and Impact (Sterling Publishers, New Delhi).

16. Khanal, D. R. and Sharma, G. N. (1989), **Economic Modelling of Trade in South Asia : Nepal Country Model, Mimeo** (APDC, Kuala Lumpur).

17. Khanal, D. R., Bade, J. Elbers, C., (1989), **Analysis of Sectoral Consistency and Growth Projection for Nepal's Eighth Plan** (A Report Submitted to ESCAP)

18. Khanal, D. R., Thapa, P. J.. Elbers, C., (1988), **A Regionally Disaggregated Planning Model for Nepal** (ESCAP/NPC).

19. Killick, T., (1989), **A Reaction Too Far : Economic Theory and the Role of the State in Developing Countries** (Overseas Development Institute)

20. National Planning Commission, **Sixth Plan (1980-85)**, HMG, Nepal.

21. National Planning Commission, **Seventh Plan (1985-90)**, HMG, Nepal.

22. Nepal Rastra Bank (1989), **Multi Purpose Household Budget Survey : A Study on Income Distributioin, Employment and Consumption Patterns in Nepal** (Kathmandu, Nepal).

23. Panchamukhi. V. R., (1986), **Capital Formation and Output in the Third World** (RIS, New Delhi)

24. Pindyck, R. S., Rubinfeld, D. L., (1976), **Econometric Models and Economic Forecasts** (McGraw Hill Ltd.)

25. Sutchiffe, R.B. (1971), **Industry and Underdevelopment**, (Edition-cresely Publishing Company, Manila).

26. Taylor, Lance (1979), **Macro Models for Developing Countries** (McGraw Hill Book Company).

27. Todaro, Michael P., (1971), **Development Planning Models and Methods** (Oxford University Press).

28. UNECWA (1980), **A Macro-economic Planning Model of the Syrian Arab Republic, Lebanon.**

29. UNIDO (1988), **Nepal - Industrialization, International Linkages and Basic Needs**, Vienna.

30. UNIDO (1985), **Input Output Tables for Developing Countries** (Vol. I), (United Nations, New York).

Time Series Data Used in the Estimation of Macro Model

obs	[illegible]	[illegible]	[illegible]	[illegible]	VASS	[illegible]	[illegible]	[illegible]	VATE	GDPCA	[illegible]
1975	[illegible]	[illegible]	[illegible]	[illegible]	2263.165	2335.675	1511.369	31033.01	1399.896	48.35324	35.57430
1976	[illegible]	[illegible]	[illegible]	[illegible]	2565.799	2384.363	[illegible]	31962.94	1536.785	48.34373	39.23777
1977	[illegible]	[illegible]	2279.444	94.71763	2327.604	3610.036	[illegible]	32065.54	1626.163	45.60182	39.11048
1978	[illegible]	[illegible]	[illegible]	73.42370	2953.516	3479.212	[illegible]	33755.12	1576.499	45.84256	41.88426
1979	[illegible]	[illegible]	[illegible]	93.40409	3061.890	3570.299	3394.702	34559.02	1689.458	54.31430	48.83605
1980	[illegible]	[illegible]	[illegible]	[illegible]	3124.321	3661.702	[illegible]	[illegible]	1786.024	64.95483	66.25260
1981	[illegible]	[illegible]	[illegible]	[illegible]	3369.373	3761.099	[illegible]	37163.61	1874.839	72.67544	77.01536
1982	[illegible]	[illegible]	[illegible]	177.3072	3562.763	3860.662	3671.696	39321.19	2013.503	76.29944	72.43021
1983	[illegible]	[illegible]	[illegible]	219.4676	3934.966	3971.194	[illegible]	39755.75	2092.617	78.20425	67.64251
1984	[illegible]	[illegible]	[illegible]	241.9053	4109.647	4053.254	[illegible]	41036.82	2162.595	81.74152	74.79176
1985	[illegible]	[illegible]	[illegible]	253.0607	4335.244	4190.249	[illegible]	[illegible]	2243.302	85.82958	81.92710
1986	[illegible]	[illegible]	[illegible]	297.1594	4577.920	4307.113	[illegible]	44444.53	2334.446	91.06010	85.99498
1987	[illegible]	[illegible]	2474.072	321.3329	4782.602	4426.610	4746.572	45592.24	2440.666	96.27953	85.74407
1988	[illegible]	[illegible]	3645.674	407.0934	4930.869	4563.333	[illegible]	45752.57	2560.323	105.6610	107.8076

obs	[illegible]	[illegible]	LA	LMM	LC	[illegible]	LTR	LEG	LFRD	LSS	MFS
1975	[illegible]	[illegible]	[illegible]	0.059857	0.010455	[illegible]	0.075993	0.002058	0.005263	0.191428	565.2050
1976	[illegible]	[illegible]	[illegible]	0.062043	[illegible]	[illegible]	0.083405	0.002193	0.005543	0.207639	714.0000
1977	[illegible]	[illegible]	5.535952	0.064325	0.015160	[illegible]	0.088063	0.002337	0.006486	0.225657	520.0000
1978	[illegible]	[illegible]	[illegible]	0.067034	[illegible]	[illegible]	0.095207	0.002431	0.008373	0.257404	627.2343
1979	[illegible]	[illegible]	[illegible]	0.070679	0.033762	[illegible]	0.101558	0.002532	0.009166	0.276353	689.9728
1980	[illegible]	[illegible]	[illegible]	0.073478	[illegible]	[illegible]	0.106988	0.002635	0.009971	0.293701	749.4475
1981	[illegible]	[illegible]	[illegible]	0.075933	0.045131	[illegible]	0.111982	0.002942	0.010828	0.311937	811.7660
1982	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.119778	0.003143	0.011712	0.339064	877.0297
1983	[illegible]	[illegible]	[illegible]	0.092118	[illegible]	[illegible]	0.124036	0.003379	0.012657	0.375552	957.2715
1984	[illegible]	[illegible]	[illegible]	0.104943	[illegible]	[illegible]	0.129161	0.003615	0.013533	0.412366	1045.963
1985	[illegible]	[illegible]	[illegible]	0.112170	[illegible]	[illegible]	[illegible]	0.003760	0.014582	0.442604	[illegible]
1986	[illegible]	[illegible]	[illegible]	0.121446	0.071639	[illegible]	0.137823	0.003936	0.015582	0.475011	1226.400
1987	[illegible]	[illegible]	[illegible]	0.136131	0.078706	[illegible]	0.143795	0.004183	0.016640	0.502566	1339.714
1988	[illegible]	[illegible]	[illegible]	0.149920	[illegible]	[illegible]	0.150523	0.004503	0.017813	0.529407	1440.995

obs	[illegible]	[illegible]	[illegible]	IT	[illegible]	[illegible]	[illegible]	TAF	NTR	GDP	GNP
1975	[illegible]	[illegible]	[illegible]	154.9566	339.7660	[illegible]	307.2455	876.3176	382.0531	37674.68	38568.02
1976	[illegible]	[illegible]	[illegible]	274.4897	369.1076	[illegible]	312.1648	963.4051	495.1579	39542.20	40287.63
1977	[illegible]	[illegible]	[illegible]	[illegible]	356.3664	[illegible]	316.5799	1011.452	534.5496	40733.46	41569.36
1978	[illegible]	[illegible]	[illegible]	[illegible]	359.4702	[illegible]	[illegible]	1126.915	488.7415	41654.95	42576.72
1979	[illegible]	[illegible]	[illegible]	[illegible]	376.3436	[illegible]	317.2823	1153.371	539.7310	43171.27	44059.94
1980	[illegible]	[illegible]	[illegible]	241.1369	390.1874	[illegible]	311.0907	1190.055	588.0678	44608.70	45634.20
1981	[illegible]	[illegible]	[illegible]	[illegible]	401.8846	[illegible]	311.0907	1227.936	636.7339	46115.39	47190.00
1982	[illegible]	[illegible]	[illegible]	[illegible]	436.7539	[illegible]	311.0907	1287.484	691.7576	47630.20	48711.74
1983	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1360.336	756.2727	49631.54	[illegible]
1984	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	311.0907	1407.464	829.0548	51775.09	[illegible]
1985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1477.413	[illegible]	53361.95	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1557.928	1060.451	58657.16	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1634.028	1150.110	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	GE	TVA	[illegible]	GFD	INDT	CAB	PRVS	NS
[illegible]	[illegible]	[illegible]	[illegible]	NA	41301.49	[illegible]	317.9323	2156.062	-1517.288	7335.010	NA
[illegible]	[illegible]	[illegible]	[illegible]	NA	40075.14	[illegible]	735.7941	2233.593	-1070.205	8324.690	NA
[illegible]	[illegible]	[illegible]	[illegible]	NA	41561.75	[illegible]	1161.774	2526.009	-613.3199	9300.513	NA
[illegible]	[illegible]	[illegible]	[illegible]	5306.184	38555.44	[illegible]	1133.483	2739.523	-1706.607	5963.311	[illegible]
[illegible]	[illegible]	[illegible]	3745.455	6381.473	[illegible]	[illegible]	1694.682	2882.189	-2061.709	6404.918	5499.035
[illegible]	[illegible]	[illegible]	[illegible]	7105.434	[illegible]	[illegible]	1743.526	2973.520	-2465.613	7366.135	6753.337
[illegible]	[illegible]	[illegible]	[illegible]	7491.155	43097.55	[illegible]	1612.797	3107.837	-2151.479	7067.506	6755.420
[illegible]	[illegible]	[illegible]	[illegible]	8337.431	[illegible]	[illegible]	1468.040	3256.496	-2717.350	7943.141	6320.195
[illegible]	[illegible]	[illegible]	[illegible]	10130.23	45171.63	[illegible]	2977.347	3460.207	-4114.021	7559.627	6193.459
[illegible]	[illegible]	[illegible]	[illegible]	11163.39	45194.30	[illegible]	2115.793	3650.773	-4213.539	7756.101	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	11931.53	[illegible]	[illegible]	2402.631	3867.805	-4750.756	8002.344	6614.704
[illegible]	[illegible]	[illegible]	[illegible]	11997.06	[illegible]	[illegible]	1349.643	4029.575	-5220.030	8004.232	6781.043
[illegible]	[illegible]	[illegible]	[illegible]	11313.00	54417.45	[illegible]	1706.795	4239.679	-4666.239	8749.711	7540.317
[illegible]	[illegible]	[illegible]	[illegible]	11705.67	[illegible]	[illegible]	555.9763	4591.105	-4919.604	8883.892	7497.313

[illegible]	[illegible]	[illegible]	[illegible]	AGDP	[illegible]	[illegible]	CS	IMPI	PSCR	TCA	NFI
[illegible]	[illegible]	[illegible]	[illegible]	23334.24	5690.012	[illegible]	409.1224	46.34994	2091.941	2326.000	713.3439
[illegible]	[illegible]	[illegible]	16524.81	24917.59	6030.935	[illegible]	419.6582	46.78100	1926.810	2326.000	745.4250
[illegible]	[illegible]	[illegible]	17694.81	23038.55	6764.175	[illegible]	443.1650	51.76825	2363.975	2326.000	835.6839
[illegible]	[illegible]	[illegible]	[illegible]	23883.31	7170.702	[illegible]	1337.599	55.89339	2524.631	2326.000	921.7685
[illegible]	[illegible]	[illegible]	[illegible]	24146.58	[illegible]	[illegible]	1553.986	66.62109	3035.142	2326.000	885.6575
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2195.195	85.99305	3977.449	2464.000	1025.501
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1619.635	88.14368	4573.048	2464.000	1074.611
[illegible]	[illegible]	[illegible]	[illegible]	25114.76	[illegible]	[illegible]	1780.340	81.17729	4373.259	2464.000	1019.542
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2575.229	81.95133	3917.700	2464.000	1011.722
[illegible]	[illegible]	[illegible]	[illegible]	27743.55	[illegible]	[illegible]	2129.547	82.03476	4337.553	2464.000	854.1240
[illegible]	[illegible]	[illegible]	[illegible]	25767.67	[illegible]	[illegible]	2356.236	78.76709	5300.075	2653.000	857.9102
[illegible]	[illegible]	[illegible]	[illegible]	29907.27	[illegible]	[illegible]	1660.522	80.57474	5853.795	2653.000	803.0645
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2010.244	100.0000	6280.000	2653.000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	32193.04	[illegible]	[illegible]	514.9543	105.9143	7494.795	2653.000	1418.759

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	EXPS	IMPS	GFB	GFG	CTA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	863.0000	224.3800	611.0000	299.2304
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1065.000	949.0000	312.0925	770.0000	312.1648
[illegible]	[illegible]	[illegible]	[illegible]	1511.094	[illegible]	[illegible]	1024.000	829.0000	316.7965	759.0000	317.0613
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1195.000	961.0000	663.4439	836.0000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1079.000	925.0000	563.3384	673.0000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1515.451	[illegible]	[illegible]	1464.000	936.0000	622.1433	937.0000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1172.266	[illegible]	[illegible]	1958.000	1037.000	786.2163	986.0000	164.7616
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1084.000	899.2663	1223.000	117.7033
[illegible]	[illegible]	[illegible]	[illegible]	1394.900	370.1401	[illegible]	2665.000	1053.000	1203.153	1330.000	85.64072
[illegible]	[illegible]	[illegible]	[illegible]	1234.365	[illegible]	[illegible]	2985.000	1374.000	[illegible]	1069.000	158.5264
[illegible]	[illegible]	[illegible]	[illegible]	1094.073	451.6089	[illegible]	[illegible]	1965.000	2225.549	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	446.5493	[illegible]	3676.000	2391.000	3103.950	1456.000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4550.000	2021.000	2706.000	1285.000	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1183.349	[illegible]	[illegible]	4590.000	2313.000	3602.915	1961.000	140.5257

[illegible] Simulated Data Series

obs	[illegible]	[illegible]	VATC	VAEG	VASS	[illegible]	VAC	PRVCE	VATR	GDPDA	[illegible]
1978	[illegible]	[illegible]	[illegible]	79.40972	2953.516	[illegible]	2936.351	33755.12	1576.499	48.64256	[illegible]
1979	[illegible]	[illegible]	[illegible]	93.40408	3094.590	[illegible]	3094.722	34859.02	1689.456	54.31430	[illegible]
1980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3266.076	36030.69	1786.024	64.05433	[illegible]
1981	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3512.397	37186.61	1874.839	72.67544	[illegible]
1982	[illegible]	[illegible]	3117.667	177.9072	3562.763	[illegible]	3671.695	38321.19	2013.503	76.29944	[illegible]
1983	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3564.568	39756.75	2092.617	78.20425	[illegible]
1984	[illegible]	[illegible]	[illegible]	[illegible]	4109.647	[illegible]	4112.038	41236.82	2162.595	81.74152	74.79176
1985	[illegible]	[illegible]	[illegible]	[illegible]	4335.244	[illegible]	4288.567	42800.18	2243.302	85.82958	81.92710
1986	[illegible]	[illegible]	3407.780	[illegible]	4577.020	[illegible]	4486.258	44444.53	2334.446	91.06010	88.99498
1987	[illegible]	[illegible]	3474.272	[illegible]	[illegible]	[illegible]	4746.572	46593.24	2440.666	96.27953	85.74407
1988	[illegible]	[illegible]	3545.674	407.0984	[illegible]	[illegible]	5026.557	48762.87	2560.323	105.6610	[illegible]

obs	[illegible]	[illegible]	LA	LMM	LC	LTC	LTR	LEG	LFRD	LSS	MFS
1978	[illegible]	[illegible]	5.754035	0.067034	0.029451	[illegible]	0.095207	0.002431	0.008373	0.257404	627.2343
1979	[illegible]	[illegible]	[illegible]	0.070679	[illegible]	[illegible]	0.101558	0.002532	0.009166	0.276353	689.9728
1980	[illegible]	[illegible]	[illegible]	0.073478	0.038970	[illegible]	0.106988	0.002635	0.009971	0.293701	749.4475
1981	[illegible]	[illegible]	[illegible]	0.075933	0.045131	0.104344	0.111982	0.002942	0.010528	0.311937	811.7680
1982	[illegible]	[illegible]	[illegible]	[illegible]	0.049467	[illegible]	0.119778	0.003143	0.011712	0.339064	877.0297
1983	[illegible]	[illegible]	[illegible]	[illegible]	0.054717	[illegible]	0.124226	0.003379	0.012657	0.375552	957.2715
1984	[illegible]	[illegible]	6.370840	[illegible]	0.061453	0.118135	0.128161	0.003615	0.013633	0.412366	1045.963
1985	[illegible]	[illegible]	[illegible]	0.112170	0.066258	0.126111	0.132699	0.003760	0.014582	0.442604	1132.308
1986	[illegible]	[illegible]	6.675184	[illegible]	0.071639	0.134154	0.137823	0.003936	0.015582	0.475011	1226.400
1987	[illegible]	[illegible]	[illegible]	0.136131	0.078725	0.140079	0.143795	0.004183	0.016640	0.502566	1330.714
1988	[illegible]	[illegible]	[illegible]	0.149920	0.086348	[illegible]	0.150523	0.004803	0.017813	0.529407	1440.995

obs	[illegible]	[illegible]	MMG	DT	EXD	ST	AGT	TAF	NTR	GDP	GNP
1978	[illegible]	[illegible]	[illegible]	304.9825	359.4702	708.2470	317.2823	1126.915	488.7415	41654.96	42576.72
1979	137.9366	[illegible]	[illegible]	[illegible]	376.8436	[illegible]	317.2823	1153.371	539.7310	43171.27	44059.94
1980	175.9129	[illegible]	[illegible]	341.1369	390.1874	[illegible]	311.0907	1190.055	588.0678	44608.70	[illegible]
1981	[illegible]	[illegible]	[illegible]	359.5740	401.8846	[illegible]	311.0907	1227.996	638.7339	46115.39	[illegible]
1982	[illegible]	[illegible]	[illegible]	[illegible]	436.7539	[illegible]	311.0907	1287.484	691.7578	[illegible]	48711.74
1983	[illegible]	[illegible]	[illegible]	[illegible]	479.0294	[illegible]	311.0907	1360.836	756.9727	49631.54	50643.26
1984	[illegible]	[illegible]	[illegible]	[illegible]	540.1577	[illegible]	311.0907	1407.464	829.0548	51775.09	[illegible]
1985	[illegible]	[illegible]	[illegible]	[illegible]	574.6050	[illegible]	302.6109	1477.413	899.2304	53861.95	54729.75
1986	[illegible]	[illegible]	[illegible]	[illegible]	618.8162	[illegible]	302.6109	1532.234	975.7018	56136.03	56939.12
1987	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	302.6109	1557.923	1060.481	58657.16	[illegible]
1988	[illegible]	[illegible]	[illegible]	545.6612	754.5346	1277.474	302.6109	1634.028	1150.110	61322.52	[illegible]

obs	[illegible]	[illegible]	GR	GE	[illegible]	[illegible]	GFD	INDT	CAB	PRVS	NS
1978	[illegible]	[illegible]	3583.257	6306.184	[illegible]55.44	-3[illegible].9226	1193.493	2799.523	-1706.607	5963.311	5651.[illegible]
1979	[illegible]	[illegible]	3745.453	6881.479	[illegible]	-[illegible]5.8803	1694.682	2862.180	-2081.709	6404.916	5499.038
1980	[illegible]	5346.[illegible]	3902.825	7205.494	41635.07	-[illegible].7971	1743.526	2973.620	-2468.613	7386.135	6753.337
1981	[illegible]	[illegible]	4106.145	7491.155	43087.55	-309.0877	1612.797	3107.837	-2151.479	7067.508	67[illegible].420
1982	[illegible]	[illegible]	4327.125	9887.431	44435.70	-7[illegible].9425	2438.040	3256.496	-2717.360	7043.141	6320.193
1983	[illegible]	[illegible]	4619.780	10130.28	46171.33	-1459.167	2977.347	3460.207	-4114.021	7659.627	6190.460
1984	[illegible]	[illegible]	4338.658	10163.39	48[illegible]94.32	-110[illegible].801	2118.793	3680.773	-4213.839	7798.101	6695.300
1985	[illegible]	[illegible]9.73	5221.4[illegible]3	11021.58	49994.14	-1337.539	2402.631	3867.805	-4750.756	8002.244	6614.704
1986	7.634774	[illegible]4.47	5487.472	11097.06	52106.46	-1243.250	1049.643	4029.575	-5220.032	8004.292	6761.043
1987	7.86[illegible]	11343.34	5813.265	11513.00	54417.48	-1[illegible]08.795	1708.795	4239.679	-4666.239	8749.711	7540.917
1988	[illegible]	[illegible]	6286.876	12705.87	56731.41	-1[illegible]2.579	855.0753	4591.105	-4819.604	8889.892	7497.313

obs	ISGR	FA	NAGDP	AGDP	TIR	PRVGFIR	CS
1978	1519.444	1519.444	18296.65	23358.31	7170.732	4769.828	1337.599
1979	1441.33[illegible]	1441.338	19024.69	24146.58	6940.376	4710.235	1683.986
1980	1559.143	1559.143	19758.63	24850.07	8312.481	5642.608	2105.195
1981	1772.217	1772.216	20586.66	25528.72	8530.637	5454.711	1618.635
1982	[illegible].267	[illegible].266	21577.43	26114.76	8442.465	4605.101	1732.340
1983	[illegible].153	[illegible].153	22724.19	26907.35	87[illegible].613	4682.280	2678.229
1984	3105.941	3105.941	24031.51	27743.58	9791.241	5669.308	2120.547
1985	3397.554	3397.549	25094.27	28767.67	100[illegible].36	5599.617	2356.236
1986	455[illegible].949	455[illegible].950	26[illegible].76	29907.27	11[illegible].99	6954.648	1662.522
1987	3990.995	3991.000	27569.94	31057.22	11631.91	7040.913	2010.244
1988	5563.917	5563.915	29139.47	32193.04	13061.23	8034.815	814.9844

[illegible]

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	VAC	VATR	PRVCR	GDPFA
1985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2243.302	42300.18	85.82956
1986	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2334.446	44444.53	91.06010
1987	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2440.666	46593.24	96.27953
1988	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2560.323	48762.87	105.66100
1989	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2678.756	50926.64	113.74110
1990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2730.559	52519.85	122.68920
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2780.691	54078.23	132.68010
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2827.615	55736.97	143.74540
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2864.375	57327.97	155.93010
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2922.569	59091.75	169.31660
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2994.635	60947.56	183.96300

obs	[illegible]	[illegible]	[illegible]	[illegible]	LMM	[illegible]	[illegible]	LIE	LEG	LEED	LSS
1985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.132639	0.003760	0.014582	0.442604
1986	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.137938	0.003936	0.015582	0.475011
1987	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.143795	0.004188	0.016640	0.502566
1988	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.150523	0.004803	0.017813	0.529407
1989	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.157182	0.005056	0.019063	0.559324
1990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.160095	0.005315	0.019911	0.579520
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.162913	0.005581	0.020786	0.598525
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.165553	0.005925	0.021598	0.617097
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.167618	0.006264	0.022376	0.640563
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.170897	0.006620	0.023499	0.667378
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.171912	0.006790	0.024033	0.694934

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	AGT	IAF	NTR	TVA
1985	[illegible]	[illegible]	[illegible]	[illegible]	454.3674	[illegible]	[illegible]	302.6109	1477.413	899.2304	49994.14
1986	[illegible]	[illegible]	[illegible]	[illegible]	482.1950	[illegible]	[illegible]	302.6109	1532.234	975.7018	52106.46
1987	[illegible]	[illegible]	[illegible]	[illegible]	513.0457	[illegible]	[illegible]	302.6109	1557.923	1060.4810	54417.45
1988	[illegible]	[illegible]	[illegible]	[illegible]	545.6610	[illegible]	[illegible]	302.6109	1634.028	1150.1100	56731.41
1989	[illegible]	[illegible]	[illegible]	[illegible]	580.7481	[illegible]	[illegible]	301.1590	1714.565	1246.6300	59322.91
1990	[illegible]	[illegible]	[illegible]	[illegible]	606.4037	[illegible]	[illegible]	299.6694	1788.337	1317.0560	61163.63
1991	[illegible]	[illegible]	[illegible]	[illegible]	631.5464	[illegible]	[illegible]	298.2019	1861.755	1386.1030	62995.51
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	296.6962	1938.287	1459.6080	64927.60
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	295.1722	2017.305	1539.9910	66763.15
1994	[illegible]	[illegible]	[illegible]	[illegible]	710.3356	[illegible]	[illegible]	293.6296	2102.133	1606.1390	[illegible]
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	292.0662	2192.730	1690.4150	70954.33

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	GFWTS	GED	IMPT	CAB
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1857.539	2402.634	3967.805	-4759.756
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1843.350	1019.643	4029.575	-5220.032
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1208.795	1708.795	4239.679	-4666.239
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1382.579	855.0353	4591.105	-4819.604
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1451.981	934.3596	4666.912	-5585.564
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1678.019	1121.614	5104.396	-9196.691
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1997.519	1344.239	5345.185	-6755.357
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2157.253	1588.315	5598.662	-7313.240
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2448.950	1874.845	5856.154	-7855.856
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2716.079	2173.315	6136.774	-8432.754
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-3067.576	2497.041	6435.55	-9038.106

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TIE	PEVGPIE	TS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10913.26	5599.647	2356.236
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11809.39	6954.618	1662.522
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11631.91	7040.913	2010.244
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10961.03	8034.815	814.9844
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10980.95	6399.559	1233.395
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14451.87	8513.333	1472.187
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14938.82	8549.321	1630.031
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15474.08	8764.464	1757.696
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16036.45	8520.383	1836.336
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16663.98	8906.709	1919.261
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17329.73	8990.663	1992.265

[illegible]

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	PRVCR	VATE	GDPDA	GDPCNP
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54051.32	2780.691	132.0525	134.1013
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	56136.30	2826.781	142.0371	145.2902
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	58306.07	2866.919	152.5226	156.6143
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	60731.03	2934.049	163.6516	168.6352
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63346.29	3016.597	175.5111	182.0193

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	LEG	LFRD	LSS	MFS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.111306	[illegible]	[illegible]	0.005584	0.020786	0.598525	1731.563
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.005923	0.021145	0.617392	1844.120
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.006264	0.021472	0.641965	1962.765
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.006623	0.021851	0.670613	2095.696
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.006805	0.022250	0.701193	2239.244

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TAF	NTE	TVA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1865.764	1386.263	62995.51
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1959.809	1477.741	55338.96
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2064.447	1574.184	67803.76
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2180.081	1682.205	70574.33
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2306.026	1798.671	73567.18

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	INDT	CAB	NS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5349.616	-6620.693	8066.746
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5726.526	-7664.079	8330.438
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6129.739	-8624.405	8564.367
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6571.455	-9703.443	8597.235
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7016.005	-10665.03	9244.947

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	CS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1587.762
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1876.367
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2234.243
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2649.566
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3110.597

[illegible] recasts ALt 2

obs	[illegible]	[illegible]	[illegible]	.AES	[illegible]	[illegible]	VAC	VATR	PAVCR	GDPDA
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5943.519	2760.691	54079.23	132.7693
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6202.976	2827.542	56258.13	143.3615
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6535.319	2866.741	58599.86	154.7137
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6869.846	2933.474	61256.38	166.9631
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7204.700	3020.326	64170.94	180.1843
1996	[illegible]	[illegible]	[illegible]	705.8104	[illegible]	[illegible]	7649.082	3071.526	67340.41	194.4773
1997	[illegible]	[illegible]	[illegible]	771.5855	[illegible]	[illegible]	8106.666	3198.219	70925.90	209.9875
1998	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8647.020	3351.833	74837.53	226.6877
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9324.226	3515.023	79277.10	244.7453
2000	[illegible]	[illegible]	[illegible]	367.7451	[illegible]	[illegible]	10057.61	3690.456	84091.09	264.2153

obs	[illegible]	[illegible]	MS	LA	[illegible]	[illegible]	LTC	LTR	LEG	LPRD	LSS
1991	[illegible]	[illegible]	11337.36	7.418121	[illegible]	[illegible]	0.165650	0.162913	0.005584	0.020766	0.593625
1992	[illegible]	[illegible]	13171.26	7.557601	[illegible]	[illegible]	0.170531	0.165548	0.005923	0.020965	0.617035
1993	[illegible]	[illegible]	13564.34	7.701735	[illegible]	[illegible]	0.175058	0.167752	0.006264	0.021146	0.641379
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.179532	0.171504	0.006619	0.021365	0.670480
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.184744	0.176387	0.006795	0.021609	[illegible]
1996	[illegible]	[illegible]	14841.71	[illegible]	[illegible]	[illegible]	0.190720	0.179266	0.007118	0.021915	0.729106
1997	[illegible]	[illegible]	[illegible]	5.543349	0.453171	[illegible]	0.196596	0.186369	0.007443	0.021957	0.751132
1998	[illegible]	[illegible]	[illegible]	5.500327	[illegible]	[illegible]	0.203182	0.195026	0.007814	0.022053	0.777991
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.207749	0.204201	0.008325	0.022274	0.817145
2000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.213332	0.214065	0.008863	0.022552	[illegible]

obs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ST	AGT	TAF	NTR	TVA
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1460.640	298.2019	1677.445	1366.165	[illegible]
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1564.113	296.6962	1863.999	1463.147	[illegible]
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1653.852	295.1722	2102.104	1587.446	[illegible]
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1755.857	293.6296	2233.045	1705.929	71134.09
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1867.828	292.0652	2376.758	1836.026	[illegible]
1996	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1989.674	290.4878	2531.951	1977.594	[illegible]
1997	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2127.553	288.8860	2707.390	2137.913	[illegible]
1998	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2278.282	287.2686	2899.963	2312.920	[illegible]
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2449.338	285.6296	3115.327	2511.734	[illegible]
2000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2635.028	283.9708	3351.661	2727.412	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	GOVTS	GPD	INDT	CAB
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1906.573	924.8028	5346.699	-6574.[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1956.505	775.3169	5767.311	-7864.[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2006.266	593.5994	6218.449	-8979.477
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2032.260	351.3113	6717.215	-10[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2043.672	52.39622	7260.656	-11627.[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2067.420	-282.2816	7825.895	-13125.20
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1990.955	-772.1250	8518.405	-14864.66
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1904.992	-1334.308	9256.967	-16791.51
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1737.382	-2049.549	10105.07	-18[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1541.634	-2674.455	11022.94	-21410.39

[illegible]	[illegible]	[illegible]	[illegible]	FA	[illegible]	AGDP	TIR	PRVGFIR	CG
[illegible]	[illegible]	[illegible]	7671.301	7671.908	37146.56	35196.65	15756.02	9067.861	885.[illegible]
[illegible]	[illegible]	[illegible]	8540.301	8540.355	[illegible]	36189.15	16912.00	9552.827	1049.697
[illegible]	[illegible]	[illegible]	9607.722	9607.775	37113.46	37214.51	18193.13	10098.05	124[illegible]
[illegible]	[illegible]	[illegible]	10635.56	10635.54	[illegible]	38451.37	19663.29	10758.70	1467.[illegible]
[illegible]	[illegible]	[illegible]	11766.30	11766.33	[illegible]	39866.80	21313.94	11518.68	1705.[illegible]
[illegible]	[illegible]	[illegible]	13104.23	13104.29	[illegible]	41544.16	23156.21	12361.65	1913.7[illegible]
[illegible]	[illegible]	[illegible]	14518.03	[illegible]	[illegible]	43205.13	25259.28	13407.26	[illegible]
[illegible]	[illegible]	[illegible]	16276.36	16276.43	[illegible]	45034.61	27607.71	14570.49	[illegible]
[illegible]	[illegible]	[illegible]	19107.80	[illegible]	[illegible]	46909.98	30256.24	15947.30	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	48946.88	33267.65	17492.62	[illegible]

[illegible]	WAC	WATR	PRVCR	GDPDA
[illegible]	5943.519	2760.691	54085.91	134.3830
[illegible]	6202.976	2629.966	56526.90	147.0469
[illegible]	6546.648	2873.246	59190.77	160.1312
[illegible]	6692.211	2946.973	62251.23	174.3043
[illegible]	7251.067	3044.335	65669.36	189.7384
[illegible]	9069.330	3110.364	70514.45	206.5762
[illegible]	11092.70	3257.129	76056.34	224.3639
[illegible]	11707.70	3440.676	81036.71	244.6696
[illegible]	12499.21	3645.415	86661.47	266.4125
[illegible]	13391.43	3872.036	93346.66	290.1691

[illegible]	LTC	LTR	LEG	LFED	LSS
[illegible]	0.165650	0.162913	0.005564	0.020766	[illegible]
[illegible]	0.170531	0.165684	0.005923	0.020816	[illegible]
[illegible]	0.175058	0.168117	0.006274	0.020805	[illegible]
[illegible]	0.179660	0.172263	0.006627	0.020853	[illegible]
[illegible]	0.185141	0.177737	0.006819	0.020926	[illegible]
[illegible]	0.191543	0.181449	0.007161	0.021069	[illegible]
[illegible]	0.198059	0.189701	0.007519	0.020903	[illegible]
[illegible]	0.205549	0.200021	0.007936	0.020842	[illegible]
[illegible]	0.211339	0.211533	0.008513	0.020901	[illegible]
[illegible]	0.218747	0.224275	0.009147	0.021024	[illegible]

[illegible]	ST	AGT	TAF	NTR	IVA
[illegible]	1450.900	298.2019	1666.160	1386.465	[illegible]
[illegible]	1574.843	296.6962	2000.326	1436.352	[illegible]
[illegible]	1676.361	295.1722	2131.636	1614.147	[illegible]
[illegible]	1784.544	293.6296	2280.181	1760.873	[illegible]
[illegible]	1936.116	292.0682	2445.656	1903.780	[illegible]
[illegible]	2113.104	290.4878	2636.353	2121.004	[illegible]
[illegible]	2327.167	288.8880	2860.236	2369.717	[illegible]
[illegible]	2519.352	287.2688	3095.787	2593.012	[illegible]
[illegible]	2744.333	285.6296	3361.875	2854.411	[illegible]
[illegible]	2995.030	283.9706	3658.400	3145.685	[illegible]

						GOVTS	GPD	INDT	
						-1897.186	494.4090	5355.673	
						-1857.926	46.24455	5849.203	
						-1801.360	-496.6121	6336.363	
						-1699.093	-1175.230	6969.079	
						-1557.468	-1998.065	7654.699	
						-1282.078	-3076.356	8415.654	
						-847.1748	-4455.309	9346.933	
						-468.3767	-5941.779	10411.59	
						65.33973	-7770.592	11438.41	
						689.9080	-9913.393	12664.21	

						AGDP	TIE	PAVGPIR	
						35196.65	16181.33	9491.179	
						36218.06	17635.51	10276.54	
						37290.15	19281.43	11166.34	
						38612.41	21198.56	12293.96	
						40153.16	23393.22	13596.16	
						42007.45	26255.59	15481.03	
						43907.91	29561.56	17709.54	
						46094.47	32908.77	19871.55	
						48465.50	36814.61	22473.67	
						51115.03	41255.86	25430.83	

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	VAC	VATR	PRVCR	GDPDA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5943.519	2780.691	54100.97	134.4283
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6208.976	2834.514	56865.67	146.0837
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6619.796	2885.666	59997.54	158.3022
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7055.065	2972.513	63682.78	171.0393
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7539.068	3089.670	67954.89	184.9779
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8156.995	3184.627	72794.53	199.5897
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8655.389	3371.156	78498.94	215.1702
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9622.220	3604.836	85042.63	231.6304
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10695.14	3872.947	92811.40	249.6183
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11739.34	4183.757	101802.8	267.1817

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	LTC	LTR	LEG	LFRD	LSS
1981	[illegible]	[illegible]	[illegible]	7.418101	[illegible]	[illegible]	0.165650	0.162913	0.005584	0.020786	[illegible]
1982	[illegible]	[illegible]	[illegible]	7.589193	[illegible]	[illegible]	0.170531	0.165940	0.005923	0.020617	[illegible]
1983	[illegible]	[illegible]	[illegible]	7.783421	[illegible]	[illegible]	0.175058	0.168816	0.006264	0.020404	[illegible]
1984	[illegible]	[illegible]	[illegible]	7.940894	[illegible]	[illegible]	0.179957	0.173699	0.006642	0.020247	[illegible]
1985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.185897	0.180297	0.006859	0.020119	[illegible]
1986	[illegible]	[illegible]	[illegible]	8.499875	[illegible]	[illegible]	0.193099	0.185625	0.007243	0.020986	[illegible]
1987	[illegible]	[illegible]	[illegible]	8.682980	[illegible]	[illegible]	0.200834	0.196112	0.007665	0.019636	[illegible]
1988	[illegible]	[illegible]	[illegible]	9.033906	[illegible]	[illegible]	0.210075	0.209251	0.008175	0.019677	[illegible]
1989	[illegible]	[illegible]	[illegible]	9.882387	[illegible]	[illegible]	0.218288	0.224326	0.008877	0.019668	[illegible]
1990	[illegible]	[illegible]	[illegible]	10.17601	[illegible]	[illegible]	0.228751	0.241801	0.009671	0.019749	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ST	AGT	TAF	NTR	TVA
1981	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1481.436	298.2019	1905.784	1387.148	[illegible]
1982	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1587.747	296.6962	2038.364	1510.607	[illegible]
1983	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1708.235	295.1722	2196.483	1650.536	[illegible]
1984	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1850.213	293.6296	2379.975	1815.559	[illegible]
1985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2013.809	292.0682	2589.595	2005.637	[illegible]
1986	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2201.770	290.4878	2826.149	2224.023	[illegible]
1987	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2422.152	288.8880	3100.019	2490.078	[illegible]
1988	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2675.139	287.2688	3412.510	2774.017	[illegible]
1989	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2975.710	285.6296	3774.452	3123.241	[illegible]
1990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3323.788	283.9708	4189.840	3527.663	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	GOVTS	GFD	INDT	CAB
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1876.052	35.65842	5375.883	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1724.771	-781.1245	5961.895	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1502.298	-1806.314	6616.311	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1234.313	-3106.617	7365.846	-11115.07
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-857.6079	-4723.831	8215.585	-13175.65
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-402.6397	-6693.734	9154.576	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	247.4343	-9187.901	10290.11	-18342.14
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1038.066	-12217.20	11571.09	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2077.491	-15967.52	13066.92	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3347.754	-20513.36	14521.06	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NAGDP	AGDP	TIR	PRVGFIR	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	35196.65	16995.68	9933.932	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	36272.31	18995.50	11086.34	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	37440.28	21352.46	12494.20	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	42194.35	38917.08	24173.66	14252.41	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	40696.40	27510.80	16399.00	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	42893.38	31447.64	19002.42	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	45266.18	36125.46	22186.61	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	48052.81	41628.38	26017.09	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	51179.83	48185.61	30700.97	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54833.70	55910.72	36327.91	[illegible]

Appendix Table [illegible]

[illegible]

S.N.	Sectors	Food Crop	Jute	Tobacco	Sugar cane	Other Cash Crops	Livestocks and Fisheries	Forestry	Mining and Quarring	Dairy Prducts	Canning	Other Food Products	Grain Mill Products
		1	2	3	4	5	6	7	8	9	10	11	12
1	Food Crops	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0344	0.0000	0.0000	0.0000	0.0009	0.0000	[illegible]
2	Jute	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
3	Tobacco	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
4	Sugarcane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0009	0.0000	[illegible]
5	Other Cash Crops	[illegible]	[illegible]	0.0000	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.2329	0.3354	[illegible]
6	Livestocks and Fisheries	[illegible]	[illegible]	0.1164	[illegible]	0.1454	0.0000	0.0000	0.0000	0.5226	0.0000	0.0000	[illegible]
7	Forestry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0041	0.1437	0.0000	0.0007	0.0025	0.0069	[illegible]
8	Mining and Quarring	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.1093	0.0000	0.0009	0.0000	[illegible]
9	Dairy Products	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0001	0.0009	0.0011	[illegible]
10	Canning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	Other Food Products	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	Grain Mill Products	[illegible]	[illegible]	[illegible]	0.0000	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	Tobacco Manufacture	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
14	Beverages	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
15	Tea	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0002	0.0015	0.0018	[illegible]
16	Sugar and Confectionery	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0002	0.0011	0.0013	[illegible]
17	Carpets	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0002	0.0014	0.0016	[illegible]
18	Textiles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
19	Garments	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0091	0.0000	0.0003	0.0023	0.0027	[illegible]
20	Jute Goods	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0004	0.0024	[illegible]	[illegible]
21	Footwear and Leather Good	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
22	Cement	[illegible]	[illegible]	0.0174	[illegible]	[illegible]	0.0000	0.0092	0.0436	0.0015	0.0017	0.0014	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.1023	0.0016	0.0025	[illegible]	[illegible]
24	Pharmaceuticals	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0005	0.0031	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0004	0.0005	0.0004	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0007	0.0009	0.0007	[illegible]
27	Paper and Printing	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0085	0.0105	0.0023	0.0032	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0063	0.0000	0.0009	0.0013	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0004	0.0005	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
32	Construction	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
33	Gas,Electricity & Water	[illegible]	[illegible]	0.0357	[illegible]	[illegible]	0.0000	0.0087	0.0027	0.0150	0.0036	[illegible]	[illegible]
34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0030	0.0043	0.0004	0.0026	[illegible]	[illegible]
35	Transport & Communications	[illegible]	[illegible]	0.0357	[illegible]	[illegible]	0.0346	0.0569	0.0254	0.0309	0.0207	[illegible]	[illegible]
36	Wholesale & Retail Trade	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0208	0.0168	0.0122	0.0016	0.0017	[illegible]	[illegible]
37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0221	0.1461	0.0051	0.0093	[illegible]	[illegible]
38	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0009	[illegible]	[illegible]
39	Other Services	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0093	0.1490	0.0042	0.0057	[illegible]	[illegible]

[illegible]

S.N.	Sectors	Tobacco Manufacture (13)	Beverages (14)	Tea (15)	Sugar & Confectionery (16)	Carpets (17)	Textiles (18)	Garments (19)	Jute Goods (20)	Footwear & Leather Goods (21)	Cement (22)	Mineral & Fuel Products (23)
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
2	Jute	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.1919	0.0000	[illegible]	[illegible]
3	Cotton	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
5	Other Crops [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0803	0.0000	0.0000	0.0000	[illegible]	[illegible]
6	[illegible] and Fisheries	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.6305	[illegible]	[illegible]
7	Forestry	[illegible]	[illegible]	[illegible]	[illegible]	0.0052	0.0038	0.0000	0.0000	0.0012	0.0001	[illegible]
8	Grinding and Husking	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.2064	[illegible]
9	Dairy Products	[illegible]	0.0014	[illegible]	[illegible]	[illegible]	0.0001	0.0000	0.0003	0.0005	0.0000	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	[illegible]	0.0000	[illegible]
11	Other Food Products	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
12	[illegible] Mill Products	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
13	Tobacco Manufacture	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
14	Beverages	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	[illegible]	[illegible]
15	Tea	[illegible]	0.0024	[illegible]	[illegible]	[illegible]	0.0001	0.0000	0.0005	0.0008	0.0001	[illegible]
16	Sugar and Confectionery	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0001	0.0000	0.0003	0.0006	[illegible]	[illegible]
17	Carpets	[illegible]	0.0022	[illegible]	[illegible]	[illegible]	0.0001	0.0000	0.0004	0.0007	0.0001	[illegible]
18	Textiles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0452	0.0000	[illegible]	0.0000	[illegible]
19	Garments	[illegible]	0.0026	[illegible]	[illegible]	[illegible]	0.0002	0.0001	0.0007	0.0012	0.0001	[illegible]
20	Jute Goods	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0002	0.0001	0.0007	0.0013	[illegible]	[illegible]
21	Footwear and Leather Good	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
22	Cement	[illegible]	0.0024	[illegible]	[illegible]	[illegible]	0.0018	0.0005	0.0022	0.0014	0.0005	[illegible]
23	[illegible] Clay	[illegible]	0.0017	[illegible]	[illegible]	[illegible]	0.0019	0.0006	0.0022	0.0016	0.0006	[illegible]
24	Pharmaceuticals	[illegible]	0.0049	[illegible]	[illegible]	0.0091	0.0003	0.0001	0.0009	0.0017	0.0001	[illegible]
25	Chemicals	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0005	0.0001	0.0004	0.0005	0.0001	[illegible]
26	[illegible] Furniture	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0009	0.0003	0.0011	0.0007	[illegible]	[illegible]
27	Paper and Printing	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0022	0.0016	0.0062	0.0014	0.0034	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
29	[illegible] Metals	[illegible]	0.0009	[illegible]	[illegible]	[illegible]	0.0009	0.0003	0.0011	0.0008	[illegible]	[illegible]
30	Electric & Electronic Goo	0.0001	0.0004	[illegible]	0.0014	[illegible]	0.0005	0.0002	0.0007	0.0004	[illegible]	[illegible]
31	[illegible] Industries	[illegible]	0.0000	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
32	Construction	[illegible]	0.0000	[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	[illegible]
33	Gas,Electricity & Water	[illegible]	0.0071	[illegible]	[illegible]	0.0014	0.0211	0.0029	0.0480	0.0105	0.0549	[illegible]
34	Hotel & Restaurants	[illegible]	0.0041	[illegible]	[illegible]	[illegible]	0.0002	0.0001	0.0008	0.0014	[illegible]	[illegible]
35	Transport & Communication	[illegible]	[illegible]	[illegible]	[illegible]	0.0082	0.0145	0.0129	0.0171	0.0173	[illegible]	[illegible]
36	Wholesale & Retail Trade	[illegible]	0.0007	[illegible]	[illegible]	0.0011	0.0014	0.0007	0.0006	0.0016	0.0007	[illegible]
37	Banking Real Estate & Ins	[illegible]	[illegible]	[illegible]	[illegible]	0.0033	0.0054	0.0053	0.0066	0.0023	0.0133	[illegible]
38	Government Services	[illegible]	[illegible]	[illegible]	[illegible]	0.0005	0.0003	0.0006	[illegible]	[illegible]	[illegible]	[illegible]
39	Other Services	[illegible]	[illegible]	[illegible]	[illegible]	0.0030	0.0222	0.0039	0.0052	[illegible]	[illegible]	[illegible]

					Plastic & Rubber Products	Basic & Fabricated Metals	Electric & Electronic Goods	N.S.E Industries	Construction	Gas Electricity and Water	
					28	29	30	31	32		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0054	0.0010	0.0001	0.0057	0.0000		
					0.0000	0.0457	0.0000	0.0000	0.0000		
					0.0019	0.0003	0.0006	0.0003	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0022	0.0004	0.0007	0.0010	0.0000		
					0.0029	0.0005	0.0009	0.0012	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0048	0.0009	0.0015	0.0021	0.0000		
					0.0051	0.0009	0.0016	0.0022	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0014	0.0014	0.0001	0.0011	0.0000		
					0.0015	0.0017	0.0019	0.0015	0.0000		
					0.0064	0.0010	0.0021	0.0029	0.0000		
					0.0004	0.0004	0.0006	0.0003	0.0000		
					0.0006	0.0009	0.0009	0.0009	0.0000		
					0.0016	0.0007	0.0044	0.0027	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0009	0.0009	0.0011	0.0006	0.0000		
					0.0004	0.0004	0.0009	0.0006	0.0000		
					0.0000	0.0000	0.0000	0.4570	0.0000		
					0.0000	0.0000	0.0000	0.0000	0.0000		
					0.0379	0.0143	0.0096	0.0115	0.0000		
					0.0054	0.0010	0.0017	0.0013	0.0000		
					0.0129	0.0170	0.0202	0.0159	0.0047		
					0.0016	0.0015	0.0015	0.0011	0.0000		
					0.0053	0.0007	0.0009	0.0007	0.0000		
					0.0001	0.0006	0.0005	0.0000	0.0000		
					0.0070	0.0100	0.0049	0.0056	0.0007		

Appendix Table 6: A(j)

(Base Year 1966/67)

S/S	Sectors	Hotel & Resturants 34	Transport & Communication 35	Wholesale & Retail Trade 36	Banking Real Estate & Dwelling 37	Government Services 38	Other Services 39
1	Food Crops	0.0007	0.0000	0.0000	0.0000	0.0000	0.0001
2	Jute	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	Tobacco	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	Sugarcane	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	Other Cash Crops	0.0000	0.0000	0.0000	0.0009	0.0000	0.0030
6	Livestocks and Fisheries	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	Forestry	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000
8	Mining and Quarring	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	Dairy Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	Canning	0.0000	0.0012	0.0000	0.0000	0.0000	0.0000
11	Other Food Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	Grain Mill Products	0.0000	0.0000	0.0000	0.0000	0.0558	0.0013
13	Tobacco Manufacture	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	Beverages	0.0121	0.0000	0.0000	0.0000	0.0000	0.0000
15	Tea	0.0000	0.0000	0.0004	0.0000	0.0006	0.0003
16	Sugar and Confectionery	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	Carpets	0.0000	0.0000	0.0000	0.0021	0.0051	0.0005
18	Textiles	0.0000	0.0000	0.0000	0.0010	0.0000	0.0005
19	Garments	0.0000	0.0043	0.0005	0.0000	0.0160	0.0056
20	Jute Goods	0.0000	0.0002	0.0005	0.0005	0.0009	0.0000
21	Footwear and Leather Good	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22	Cement	0.0000	0.0007	0.0000	0.0000	0.0031	0.0001
23	Structural Clay	0.0000	0.0004	0.0000	0.0016	0.0053	0.0030
24	Pharmaceuticals	0.0000	0.0000	0.0019	0.0000	0.0011	0.0065
25	Chemicals	0.0000	0.0032	0.0001	0.0000	0.0001	0.0034
26	Wood & Furniture	0.0000	0.0004	0.0000	0.0000	0.0010	0.0001
27	Paper and Printing	0.0134	0.0028	0.0023	0.0089	0.0013	0.0042
28	Plastic & Rubber Products	0.0000	0.0005	0.0009	0.0000	0.0000	0.0000
29	Basic &Fabricated Metals	0.0000	0.0002	0.0019	0.0082	0.0131	0.0002
30	Electric & Electronic Goo	0.0000	0.0009	0.0000	0.0040	0.0053	0.0016
31	M.C.E Industries	0.0000	0.0000	0.0023	0.0000	0.0012	0.0042
32	Construction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33	Gas,Electricity & Water	0.0414	0.0101	0.0005	0.0059	0.0042	0.0011
34	Hotel & Resturants	0.0142	0.0397	0.0019	0.0241	0.0344	0.0084
35	Transport & Communication	0.0403	0.0714	0.0895	0.0228	0.0531	0.0257
36	Wholesale & Retail Trade	0.0002	0.0780	0.0476	0.0027	0.0017	0.0019
37	Banking &Real Estate & Dwe	0.0000	0.1077	0.0619	0.0578	0.0120	0.0133
38	Government Services	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39	Other Services	0.0419	0.0283	0.0160	0.0330	0.0554	0.0015

Appendix Table 4: II-AI-1

(Base Year 1986/87)

S/N	Sectors	Food Crop	Jute	Tobacco	Sugarcane	Other Cash Crops	Livestocks and Fisheries	Forestry	Mining and Quarring	Dairy Prducts	Canning
		1	2	3	4	5	6	7	8	9	10
1	Food Crops	1.074726	0.014923	0.010036	0.005131537	0.01568567	0.101569633	0.00030016	0.000686	0.053188	0.003323
2	Jute	0.000015	1.027363	0.007109	0.000022696	0.00001158	0.000010403	0.00006992	0.000231	0.000092	0.000500
3	Tobacco	0	0	1.004066	0	0	0	0	0	0	0
4	Sugarcane	0.000011	0.000013	0.000032	1.093426701	0.00000355	0.000011258	0.00003042	0.000130	0.000129	0.000779
5	Other Cash Crops	0.000370	0.000580	0.000400	0.000320558	1.03466615	0.001803156	0.00022679	0.000933	0.001188	0.242148
6	Livestocks and Fisheries	0.146413	0.245635	0.115630	0.002279933	0.15568135	1.014110950	0.00013057	0.000468	0.530195	0.037456
7	Forestry	0.001270	0.001412	0.006612	0.000747037	0.00091641	0.005033928	1.16853162	0.023141	0.004528	0.004732
8	Mining and Quarring	0.000531	0.000172	0.006562	0.001722903	0.00011317	0.000099012	0.00307576	1.141374	0.000620	0.000713
9	Dairy Prducts	0.000004	0.000003	0.000021	0.000013215	0.00000257	0.000005922	0.00001495	0.000050	1.000144	0.000924
10	Canning	0.000056	0.000051	0.000061	0.000049137	0.00005158	0.00005455	0.00009366	0.000057	0.000071	1.000041
11	Other Food Products	0.000529	0.001059	0.000509	0.000345399	0.00066887	0.004357067	0.00000056	0.000002	0.002277	0.000160
12	Grain Mill Products	0.000007	0.000013	0.000014	0.000012401	0.00000498	0.000003734	0.00002240	0.000235	0.000010	0.000015
13	Tobacco Manufacture	0	0	0	0	0	0	0	0	0	0
14	Beverages	0.000041	0.000045	0.000051	0.000051033	0.00003655	0.000026839	0.00009733	0.000162	0.000042	0.000058
15	Tea	0.000043	0.000041	0.000102	0.000056527	0.00003792	0.000044413	0.00008782	0.000185	0.000290	0.001569
16	Sugar and Confectionery	0.000022	0.000025	0.000060	0.000040408	0.00001785	0.000021032	0.00005683	0.000243	0.000242	0.001456
17	Carpets	0.000136	0.000181	0.000197	0.000132353	0.00011112	0.000036758	0.00012715	0.000576	0.000271	0.001451
18	Textiles	0.000073	0.000102	0.000105	0.000120075	0.00006442	0.000027489	0.00056019	0.000368	0.000068	0.000191
19	Garments	0.000273	0.000278	0.000456	0.000253550	0.00023275	0.000281735	0.01114609	0.001579	0.000727	0.002579
20	Jute Goods	0.000090	0.000074	0.000551	0.000112004	0.00005547	0.000049296	0.00034874	0.001422	0.000464	0.002537
21	Footwear and Leather Good	0	0	0	0	0	0	0	0	0	0
22	Cement	0.001267	0.000034	0.018100	0.000185822	0.00007365	0.000208016	0.01102508	0.050790	0.001755	0.001680
23	Mineral & Fuel Products	0.001354	0.000244	0.016011	0.000467165	0.00015293	0.000182387	0.00057267	0.118150	0.001884	0.002765
24	Pharmaceuticals	0.000102	0.000132	0.000244	0.000156474	0.00008583	0.000090712	0.00022705	0.001401	0.000589	0.003184
25	Chemicals	0.000196	0.000194	0.000729	0.000260312	0.00017423	0.000169127	0.00047912	0.001012	0.000812	0.000737
26	Wood & Furniture	0.000224	0.000031	0.004455	0.000054442	0.00002699	0.000052303	0.00007590	0.000284	0.000722	0.000902
27	Paper and Printing	0.000943	0.001201	0.001807	0.001540807	0.00082604	0.000477049	0.01271984	0.017806	0.003423	0.004466
28	Plastic & Rubber Products	0.000010	0.000009	0.000011	0.000009146	0.00000959	0.000010138	0.00001743	0.000011	0.000013	0.000007
29	Basic &Fabricated Metals	0.003351	0.002426	0.025342	0.030238134	0.00160153	0.000743416	0.00895191	0.006101	0.001996	0.002259
30	Electric & Electronic Goo	0.000493	0.000619	0.001462	0.000813958	0.00044901	0.000255069	0.00082421	0.001865	0.001180	0.001101
31	N.S.E Industries	0.000187	0.000227	0.000787	0.000279537	0.00017823	0.000164684	0.00044061	0.001732	0.000376	0.000215
32	Construction	0	0	0	0	0	0	0	0	0	0
33	Gas,Electricity & Water	0.001559	0.001528	0.046228	0.007661291	0.00195806	0.001103423	0.01429176	0.011139	0.018158	0.005889
34	Hotel & Resturants	0.003403	0.002941	0.004239	0.004215401	0.00301969	0.002216948	0.00804021	0.013406	0.003502	0.004856
35	Transport & Communication	0.047950	0.042525	0.050746	0.040426548	0.04243840	0.044879627	0.07705839	0.047236	0.058432	0.034257
36	Wholesale & Retail Trade	0.027402	0.027137	0.031308	0.025319195	0.02762495	0.029339787	0.02872762	0.021106	0.020283	0.010674
37	Banking Real Estate & Dwe	0.055645	0.030725	0.075394	0.098456271	0.04972029	0.012269900	0.04506777	0.193605	0.023743	0.027489
38	Government Services	0.000007	0.000006	0.000047	0.000019536	0.00000425	0.000012082	0.00001752	0.000013	0.000015	0.000013
39	Other Services	0.005544	0.010435	0.009553	0.008752258	0.00367898	0.002369625	0.01659303	0.181802	0.007715	0.011523

Appendix Table 9: [I-A]-1
(Base Year 1986/87)

S/N Sectors	Other Food Products	Grain Mill Products	Tobacco Manufacture	Beverages	Tea	Sugar & Confectionery	Carpets	Textiles	Garments	Jute Goods
	11	12	13	14	15	16	17	18	19	20
1 Food Crops	0.008457	0.776344	0.010704	0.075051	0.011112	0.004163	0.023546	0.001371	0.000149	0.004903
2 Jute	0.000595	[illegible]	0.000939	0.000731	0.000183	0.000052	0.000018	0.000063	0.000021	0.197301
3 Tobacco	0	0	0.049358	0	0	0	0	0	0	0
4 Sugarcane	[illegible]	[illegible]	[illegible]	0.073897	0.000131	0.535327	0.000024	0.000090	0.000028	0.000149
5 Other Cash Crops	[illegible]	[illegible]	0.000150	0.001949	[illegible]	0.000318	0.002855	0.083369	0.003837	0.000559
6 Livestocks and Fisheries	0.061441	0.116194	0.005970	0.017349	[illegible]	0.039549	0.234577	0.012672	0.000628	0.047746
7 Forestry	[illegible]	[illegible]	0.001789	0.016065	0.053544	0.018647	0.007792	0.005861	0.000695	0.002076
8 Mining and Quarring	[illegible]	0.000345	0.000545	0.001016	[illegible]	0.002544	0.000234	0.000685	0.000232	0.000556
9 Dairy Products	0.001100	0.000101	0.000033	0.001465	0.000145	0.000030	0.000024	0.000092	0.000029	0.000265
10 Canning	0.000046	0.000054	0.000063	0.000061	0.000052	0.000058	0.000025	0.000026	0.000018	0.000035
11 Other Food Products	1.000163	0.000439	0.000025	0.000074	0.000471	0.000171	0.001007	0.000054	0.000002	0.000205
12 Grain Mill Products	0.000145	1.000010	0.000014	0.000019	0.000013	0.000040	0.000035	0.000046	0.000055	0.000015
13 Tobacco Manufacture	0	0	1	0	0	0	0	0	0	0
14 Beverages	0.000071	0.000146	0.000034	1.000065	0.000042	0.000051	0.000015	0.000023	0.000012	0.000040
15 Tea	0.001876	0.000214	0.000092	0.002437	1.000279	0.000103	0.000057	0.000189	0.000063	0.000527
16 Sugar and Confectionery	0.001733	0.000176	0.000067	0.136184	0.000245	1.000062	0.000045	0.000169	0.000053	0.000465
17 Carpets	0.001744	0.000065	0.000099	0.000265	0.000315	0.000195	1.000061	0.000200	0.000073	0.000534
18 Textiles	0.000233	0.000088	0.000046	0.000264	0.000108	0.000112	0.028991	1.000065	0.045178	0.000112
19 Garments	0.003139	0.000569	0.000399	0.004130	0.001156	0.000674	0.000265	0.000549	1.000201	0.000934
20 Jute Goods	0.003016	0.000373	0.000149	0.004010	0.000522	0.000262	0.000694	0.000319	0.000106	1.000868
21 Footwear and Leather Good	0	0	0	0	0	0	0	0	0	0
22 Cement	0.001673	0.000155	0.001479	0.000727	0.003944	0.005389	0.000672	0.002004	0.000653	0.002370
23 Mineral & Fuel Products	0.001855	0.000315	0.001527	0.002799	0.003799	0.005611	0.000671	0.002147	0.000771	0.002691
24 Pharmaceuticals	0.003734	0.000443	0.000203	0.005016	0.000593	0.000337	0.000134	0.000505	0.000149	0.001094
25 Chemicals	0.000317	[illegible]	0.000423	0.000895	0.000944	0.001563	0.000240	0.000876	0.000273	0.001162
26 Wood & Furniture	0.000796	0.000359	0.000439	0.001236	0.001600	0.002598	0.000266	0.000947	0.000349	0.001140
27 Paper and Printing	0.004526	0.001461	0.015674	0.015556	0.002685	0.004059	0.002045	0.003208	0.002175	0.006290
28 Plastic & Rubber Products	0.000019	[illegible]	0.000011	0.000011	0.000009	0.000012	0.000004	0.000004	0.000003	0.000006
29 Basic &Fabricated Metals	0.002212	0.000343	0.000157	0.004237	0.003649	0.017977	0.000759	0.001855	0.000700	0.002967
30 Electric & Electronic Good	[illegible]	[illegible]	0.000625	0.001380	0.001739	0.002565	0.000385	0.001288	0.000435	[illegible]
31 N.S.E Industries	0.000455	0.000026	[illegible]	0.000297	0.000247	0.000477	0.000119	0.000524	0.000120	0.000785
32 Construction	0	0	0	0	0	0	0	0	0	0
33 Gas,Electricity & Water	0.023053	[illegible]	[illegible]	0.011577	0.014951	0.013273	0.002937	0.024252	0.004763	0.054401
34 Hotel & Resturants	0.006877	0.010343	[illegible]	0.007353	0.003536	0.004273	0.001246	0.001978	0.001059	0.003383
35 Transport & Communication	[illegible]	0.052053	0.060536	0.059155	0.043133	0.056413	0.020846	0.021474	0.015622	0.029151
36 Wholesale & Retail Trade	0.016197	0.026535	0.006851	0.009370	0.023618	0.017385	0.009210	0.005834	0.002331	0.007932
37 Banking Real Estate & Dwe	0.096265	0.101654	[illegible]	0.026693	0.043387	0.063146	0.009384	0.032604	0.010117	0.048020
38 Government Services	0.000365	[illegible]	[illegible]	[illegible]	0.000019	0.000053	0.000525	0.000265	0.000849	0.000031
39 Other Services	0.010472	0.007619	0.010636	0.013947	0.009750	0.028757	0.005020	0.024528	0.006042	0.010346

Appendix Table 3: (I-A)-1

(Base Year 1996-97)

S/N	Sectors	Footwear & Leather Goods 21	Cement 22	Mineral & Fuel Products 23	Pharma-ceuticals 24	Chemical 25	Wood & Furniture 26	Paper & Printing 27	Plastic & Rubber Products 28	Basic & Fabricated Metals 29	Electric & Electronic Goods 30
1	Food Crops	0.000304	0.000354	0.000170	0.000515	0.000213	0.0006385	0.000297	0.000507	0.00019495	0.000401
2	Jute	0.000231	0.004613	0.000175	0.000333	0.000089	0.0004562	0.000488	0.001021	0.00021160	0.000429
3	Tobacco	0	0	0	0	0	0	0	0	0	0
4	Sugarcane	0.000433	0.000391	0.000226	0.000178	0.000107	0.0006744	0.000747	0.001606	0.00031030	0.000663
5	Other Cash Crops	0.001927	0.000463	0.000437	0.000107	0.000278	0.0011596	0.001221	0.002449	0.00056058	0.001049
6	Livestocks and Fisheries	0.000953	0.001324	0.000387	0.004537	0.000213	0.0011310	0.001173	0.002470	0.00050804	0.001053
7	Forestry	0.000027	0.005753	0.189539	0.043144	0.358424	0.5100696	0.027047	0.007907	0.00369342	0.001952
8	Mining and Quarring	0.000555	0.335557	0.058195	0.000615	0.001494	0.0019696	0.001406	0.000592	0.05615198	0.000921
9	Dairy Products	0.000505	0.000063	0.000155	0.000144	0.000113	0.0007908	0.000679	0.001914	0.00035787	0.000783
10	Canning	0.000062	0.000037	0.000125	0.000015	0.000053	0.0000619	0.000032	0.000029	0.00002723	0.000035
11	Other Food Products	0.000311	0.000005	0.000001	0.000010	0.000030	0.0000048	0.000005	0.000010	0.00000215	0.000004
12	Grain Mill Products	0.000015	0.000094	0.000024	0.000007	0.000070	0.0003697	0.000029	0.000018	0.00005605	0.000210
13	Tobacco Manufacture	0	0	0	0	0	0	0	0	0	0
14	Beverages	0.000050	0.000063	0.000040	0.000014	0.000049	0.0000873	0.000056	0.000089	0.00003617	0.000045
15	Tea	0.000590	0.000185	0.000455	0.000097	0.000223	0.0013697	0.001509	0.003232	0.00062661	0.001335
16	Sugar and Confectionery	0.000509	0.000171	0.000423	0.116160	0.000199	0.0012599	0.001396	0.003000	0.00057959	0.001233
17	Carpets	0.000907	0.000308	0.000461	0.000094	0.000235	0.0013049	0.001392	0.002935	0.00059926	0.001227
18	Textiles	0.000122	0.000163	0.000169	0.000043	0.000227	0.0004024	0.000203	0.000346	0.00010342	0.000154
19	Garments	0.001634	0.009824	0.006591	0.000579	0.004143	0.0070731	0.002729	0.005072	0.00117000	0.002226
20	Jute Goods	0.001425	0.023400	0.000895	0.000165	0.000450	0.0023104	0.002478	0.005179	0.00107171	0.002177
21	Footwear and Leather Good	1	0	0	0	0	0	0	0	0	0
22	Cement	0.001653	1.011179	0.007551	0.001667	0.005075	0.0066919	0.004239	0.001651	0.00402303	0.001552
23	Mineral & Fuel Products	0.001926	0.025349	1.003452	0.001450	0.001712	0.0021787	0.004290	0.001770	0.00769420	0.000563
24	Pharmaceuticals	0.001502	0.030764	0.001001	1.000195	0.002537	0.0023056	0.003125	0.006504	0.00135535	0.000698
25	Chemicals	0.000533	0.001122	0.001030	0.000393	1.000659	0.0009712	0.001532	0.000958	0.00278693	0.000924
26	Wood & Furniture	0.000782	0.003355	0.031640	0.000510	0.000709	1.0009930	0.001545	0.000705	0.00092369	0.001195
27	Paper and Printing	0.001345	0.003914	0.004345	0.001547	0.007097	0.0032143	1.156892	0.002889	0.00566530	0.006969
28	Plastic & Rubber Products	0.000011	0.000007	0.000004	0.000013	0.000009	0.0000115	0.000006	1.000005	0.00000519	0.000005
29	Basic &Fabricated Metals	0.001793	0.003076	0.003901	0.001034	0.004971	0.0054479	0.003406	0.002029	1.00179311	0.002043
30	Electric & Electronic Good	0.001034	0.000127	0.001535	0.000553	0.001000	0.0013654	0.002174	0.001507	0.00113009	1.255093
31	N.E.S Industries	0.000351	0.001416	0.000204	0.000127	0.000357	0.0004561	0.000648	0.000533	0.00049223	0.000279
32	Construction	0	0	0	0	0	0	0	0	0	0
33	Gas.Electricity & Water	0.013012	0.054957	0.010251	0.003570	0.012911	0.0157362	0.036425	0.043363	0.01713459	0.014551
34	Hotel & Resturants	0.004195	0.006059	0.003359	0.001003	0.004107	0.0072147	0.004669	0.007333	0.00239769	0.004133
35	Transport & Communication	0.051751	0.030717	0.001076	0.016549	0.042795	0.0609712	0.016657	0.013984	0.00240275	0.013669
36	Wholesale & Retail Trade	0.014000	0.007351	0.006494	0.003500	0.011564	0.0153824	0.014593	0.004295	0.00461096	0.004576
37	Banking Real Estate & Ins	0.019105	0.017865	0.001514	0.011515	0.024501	0.0367073	0.029177	0.027375	0.00303039	0.014262
38	Government Services	0.001015	0.000129	0.000121	0.000010	0.000972	0.0062247	0.000023	0.000091	0.00052548	0.000564
39	Other Services	0.011060	0.071645	0.015014	0.006511	0.016365	0.0174052	0.022034	0.010170	0.00658656	0.009657

Appendix Table 9: [I-A]-1

(Base Year 1986-87)

S/N	Sectors	S.S.E Industries 31	Construction 32	Gas Electricity and Water 33	Hotel & Resturants 34	Transport & Communication 35	Wholesale & Retail Trade 36	Banking Real Estate & Dwelling 37	Government Services 38	Other Services 39
1	Food Crops	0.000510	0.00012225	0.0025361666	0.034531042	0.0016957764	0.00032730	0.001053	0.04456615	0.001431
2	Jute	0.000573	0.00020568	0.0001566414	0.000125379	0.0000945349	0.00012172	0.000125	0.00021574	0.000015
3	Tobacco	0	0	0	0	0	0	0	0	0
4	Sugarcane	0.001334	0.00006542	[illegible]	0.000333557	0.0000323559	0.00015277	0.000062	0.00014355	0.000427
5	Other Cash Crops	0.002251	0.00002164	0.001179219	0.000232245	0.0010664195	0.00052957	0.001252	0.00470547	0.003373
6	Livestocks and Fisheries	0.002145	0.00016246	0.0005512662	0.004976391	0.0005582744	0.00021523	0.000311	0.03905515	0.005915
7	Forestry	0.015535	0.03197221	0.0056430915	0.001074955	0.0022243593	0.00063699	0.001572	0.00224559	0.001516
8	Mining and Quarring	0.001395	0.01460677	0.001650155	0.000157992	0.0006358567	0.00033247	0.001843	0.00191972	0.000259
9	Dairy Products	0.001627	0.00005622	0.0000451015	0.000033335	0.0000150967	0.00001098	0.000025	0.00002451	0.000014
10	Canning	0.000134	0.00001653	0.0000331451	0.000062357	0.0013254945	0.00012259	0.000037	0.00005353	0.000035
11	Other Food Products	0.000059	0.00000059	0.0000024157	0.000002951	0.0000021542	0.00000093	0.000003	0.00000473	0.000002
12	Grain Mill Products	0.000072	0.00006515	0.0000515015	0.000060365	0.0000524733	0.00002347	0.000051	0.00557200	0.001237
13	Tobacco Manufacture	0	0	0	0	0	0	0	0	0
14	Beverages	0.000055	0.00001569	0.0001556137	0.012321960	0.0005810351	0.00010366	0.000336	0.00047034	0.000125
15	Tea	0.010762	0.00011611	0.0007325556	0.000127134	0.0006319342	0.00048172	0.000075	0.00073036	0.000331
16	Sugar and Confectionery	0.002555	0.00010222	0.0012676555	0.001744345	0.0001536547	0.00025541	0.000115	0.00027509	0.000795
17	Carpets	0.001505	0.00010617	0.0010640394	0.000134555	0.0003564376	0.00021322	0.002310	0.00510939	0.000575
18	Textiles	0.000329	0.00006292	0.0015774111	0.000110167	0.0004977697	0.00015204	0.001146	0.00096743	0.000502
19	Garments	0.004674	0.00070520	0.0015212157	0.000635634	0.0050318526	0.00110145	0.000439	0.01674339	0.005574
20	Jute Goods	0.004409	0.00195756	0.000501643	0.000139947	0.0003948563	0.00060968	0.000632	0.00110451	0.000077
21	Footwear and Leather Good	0	0	0	0	0	0	0	0	0
22	Cement	0.001424	0.03907371	0.0015933793	0.000250121	0.0009269745	0.00019330	0.001243	0.00346134	0.000195
23	Mineral & Fuel Products	0.002470	0.06218215	0.0022363635	0.000430997	0.0009670234	0.00039049	0.002217	0.00595412	0.003164
24	Pharmaceuticals	0.005524	0.00046625	0.0015440177	0.000475271	0.0005035497	0.00022674	0.000366	0.00160313	0.005595
25	Chemicals	0.001033	0.00339443	0.0121971509	0.000563555	0.0036619341	0.00055962	0.000365	0.00062596	0.003577
26	Wood & Furniture	0.001570	0.03019155	0.0006272121	0.000100244	0.0004722042	0.00007960	0.000077	0.00111543	0.000101
27	Paper and Printing	0.007050	0.00139245	0.0102571051	0.017005777	0.0053646554	0.00453796	0.012053	0.00355503	0.005555
28	Plastic & Rubber Products	0.000006	0.00000523	[illegible]	0.000011795	0.0000466651	0.00002279	0.000006	0.00001511	[illegible]
29	Basic &Fabricated Metals	0.001197	0.03014109	[illegible]	0.001390145	0.0067149149	0.00457256	0.030407	0.01434022	[illegible]
30	Electric & Electronic Goods	[illegible]	0.00020170	[illegible]	0.000526069	0.0051469561	0.00101649	0.005714	0.00738705	[illegible]
31	S.S.E Industries	[illegible]	[illegible]	[illegible]	0.000999157	0.0009799697	0.00524426	0.006465	0.00266655	[illegible]
32	Construction	0	1	0	0	0	0	0	0	0
33	Gas,Electricity & Water	[illegible]	0.01484515	[illegible]	0.049149325	0.0166306392	0.00701572	0.009753	0.00901640	[illegible]
34	Hotel & Resturants	0.007135	0.00164309	0.0143151016	1.057794559	0.0479937771	0.00656066	0.007796	[illegible]	[illegible]
35	Transport & Communication	0.003174	0.01373031	[illegible]	0.051604553	1.0209951693	0.10076798	0.000550	0.05634337	[illegible]
36	Wholesale & Retail Trade	[illegible]	[illegible]	[illegible]	0.005779105	0.0951645669	1.11721465	0.006132	0.00503759	[illegible]
37	Banking Real Estate & Dwe	0.005021	0.01005336	[illegible]	0.015630066	0.1399206876	0.06631339	1.070530	0.03351717	0.012575
38	Government Services	[illegible]	0.00035094	[illegible]	[illegible]	0.0000259134	0.00000745	0.000034	[illegible]	0.000016
39	Other Services	0.066131	0.0361915	[illegible]	0.14463405	0.0336301593	0.01735434	0.038576	0.06121491	1.004152

Appendix Table [illegible]: Sectoral ICORs and Employment Coefficient

Sectors	Emp. Coeff.	ICOR
Food Crops		
Jute		
Tobacco		
Sugarcane		
Other Cash Crops		
Livestocks & Fisheries		
Forestry		
Agriculture Subtotal	.160687	2.760000
Mining & Quarrying	.006607	2.780000
Dairy Products	.007606	2.550000
Canning	.008963	1.790000
Other Food Products	.005098	1.790000
Grain Mill Products	.002402	2.070000
Tobacco Manufacture	.008222	1.040000
Beverages	.004984	2.740000
Tea	.010838	[illegible].050000
Sugar & Confectionery	.014931	3.160000
Carpets	.012536	1.520000
Textiles	.011031	4.050000
Garments	.011030	1.320000
Jute Goods	.026094	1.070000
Footwear & Leather Goods	.004683	1.840000
Cement	.005691	6.390000
Mineral & Fuel Products	.075385	1.640000
Pharmaceuticals	.005071	2.620000
Chemicals	.007095	1.230000
Wood & Furniture	.015984	1.180000
Paper & Printing	.014378	2.250000
Plastic & Rubber Products	.006691	3.850000
Basic & Fabricated Metals	.006585	[illegible]
Electric & Electronic Goods	.003582	[illegible]
N.E.C. Industries	.010512	[illegible]
Construction	.015346	[illegible]
Gas, Electricity & Water	.003892	[illegible]
Transport & Communication	.002871	[illegible]
Hotel & Restaurant		
Wholesale & Retail Trade		
Subtotal	.077805	[illegible]
Banking, Real Estate & Dwelling	.003408	[illegible]
Government Services		
Other Services		
Subtotal	[illegible]	[illegible]

Appendix II: Results on Import Substitution Strategy 2

Sectors	Value Added 1990	Value Added 1995	Investment 1990-95
Food Crops			
Jute			
Tobacco			
Sugarcane			
Other Cash Crops			
Livestocks & Fisheries			
Forestry			
Agriculture Subtotal	[illegible]	42572345	[illegible]
Mining & Quarring	[illegible]	178353	164947
Dairy Products	[illegible]	138654	179244
Canning	[illegible]	7036	5437
Other Food Products	[illegible]	330782	154906
Grain Mill Products	[illegible]	1137128	469229
Tobacco Manufacture	[illegible]	277556	66349
Beverages	[illegible]	9693	5046
Tea	[illegible]	15547	6751
Sugar & Confectionery	[illegible]	272960	478616
Carpets	[illegible]	674051	283474
Textiles	[illegible]	464515	1191306
Garments	[illegible]	931372	376616
Jute Goods	[illegible]	306921	167009
Footwear & Leather Goods	[illegible]	116851	[illegible]
Cement	[illegible]	373439	[illegible]
Mineral & Fuel Products	[illegible]	4685685	[illegible]
Pharmaceuticals	[illegible]	246172	[illegible]
Chemicals	[illegible]	536770	[illegible]
Wood & Furniture	[illegible]	250963	[illegible]
Paper & Printing	[illegible]	143002	[illegible]
Electrical Engineering	[illegible]	[illegible]	[illegible]
Basic Metal Industries	[illegible]	[illegible]	[illegible]
Electrical & Electronic Goods	[illegible]	[illegible]	[illegible]
N.E.S. Industries	[illegible]	[illegible]	[illegible]
Industrial Industries	[illegible]	[illegible]	[illegible]
Construction	[illegible]	[illegible]	[illegible]
Gas, Electr. & Water Distr.	[illegible]	[illegible]	[illegible]
Hotel & Restaurant			
Wholesale & Retail Trade			
Subtotal	[illegible]	3311739	[illegible]
Banking, Real Estate & Insurance	[illegible]	[illegible]	[illegible]
Government Services			
Other Services			
Subtotal	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Appendix Table 1.[illegible]: Results in Export Promotion Strategy [illegible]

Sectors	Value Added 1990	Value Added 1995	Investment 1990-95
Food Crops			
Jute			
Tobacco			
Sugarcane			
Other Cash Crops			
Livestocks & Fisheries			
Forestry			
Agriculture Subtotal	[illegible]	[illegible]	[illegible]
Mining & Quarring	118901	147153	[illegible]
Dairy Products	66560	106847	[illegible]
Canning	3440	6638	[illegible]
Other Food Products	[illegible]	321571	[illegible]
Grain Mill Products	[illegible]	1137162	[illegible]
Tobacco Manufacture	[illegible]	277556	[illegible]
Beverages	[illegible]	[illegible]	[illegible]
Tea	[illegible]	15865	[illegible]
Sugar & Confectionery	[illegible]	[illegible]	[illegible]
Carpets	[illegible]	1577546	[illegible]
Textiles	[illegible]	[illegible]	[illegible]
Garments	[illegible]	[illegible]	[illegible]
Jute Goods	[illegible]	305541	[illegible]
Footwear & Leather Goods	[illegible]	[illegible]	[illegible]
Cement	[illegible]	274103	[illegible]
Mineral & Fuel Products	[illegible]	410011	130661
Pharmaceuticals	[illegible]	147353	[illegible]
Chemicals	[illegible]	219385	[illegible]
Wood & Furniture	[illegible]	250529	[illegible]
Paper & Printing	[illegible]	139182	[illegible]
Plastic & Rubber Products	[illegible]	65333	[illegible]
Basic & Fabricated Metals	[illegible]	460496	[illegible]
Electric & Electronic Goods	[illegible]	[illegible]	[illegible]
N.S.E. Industries	[illegible]	40817	[illegible]
Subtotal Industries	[illegible]	[illegible]	[illegible]
Construction	[illegible]	[illegible]	[illegible]
Gas, Elect. & Water, Trans.	[illegible]	[illegible]	[illegible]
Hotel & Restaurant			
Wholesale & Retail Trade			
Subtotal	[illegible]	[illegible]	[illegible]
Banking, Real Estate & Dwelling	[illegible]	[illegible]	[illegible]
Government Services			
Other Services			
Subtotal	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Appendix Table 14: Results in Export Promotion and Import Substitution Strategy I

Sectors	Value Added		Investment
	[illegible]	[illegible]	[illegible]
Food Crops			
Jute			
Tobacco			
Sugarcane			
Other Commercial Crops			
Livestock & Fisheries			
Forestry			
Agriculture Sub-total	[illegible]	[illegible]	[illegible]
Mining & Quarrying	[illegible]	[illegible]	[illegible]
Dairy Products	[illegible]	[illegible]	[illegible]
Canning	[illegible]	[illegible]	[illegible]
Other Food Products	[illegible]	[illegible]	[illegible]
Grain Mill Products	[illegible]	[illegible]	[illegible]
Tobacco Manufactures	[illegible]	[illegible]	[illegible]
Beverages	[illegible]	[illegible]	[illegible]
Tea	[illegible]	[illegible]	[illegible]
Sugar & Confectionery	[illegible]	[illegible]	[illegible]
Carpets	[illegible]	[illegible]	[illegible]
Textiles	[illegible]	[illegible]	[illegible]
Garments	[illegible]	[illegible]	[illegible]
Jute Goods	[illegible]	[illegible]	[illegible]
Footwear & Leather Goods	[illegible]	[illegible]	[illegible]
Cement	[illegible]	[illegible]	[illegible]
Mineral & Fuel Products	[illegible]	[illegible]	[illegible]
Pharmaceuticals	[illegible]	[illegible]	[illegible]
Chemicals	[illegible]	[illegible]	[illegible]
Wood & Furniture	[illegible]	[illegible]	[illegible]
Paper & Printing	[illegible]	[illegible]	[illegible]
Plastic & Rubber Products	[illegible]	[illegible]	[illegible]
Basic & Fabricated Metals	[illegible]	[illegible]	[illegible]
Electric & Electronic Goods	[illegible]	[illegible]	[illegible]
M.S.E. Industries	[illegible]	[illegible]	[illegible]
Industrial Industries	[illegible]	[illegible]	[illegible]
Construction	[illegible]	[illegible]	[illegible]
Gas, Elect. & Water, Trans.	[illegible]	[illegible]	[illegible]
Hotel & Restaurant			
Wholesale & Retail Trade			
Sub-total	[illegible]	[illegible]	[illegible]
Banking, Real Estate & Insurance	[illegible]	[illegible]	[illegible]
Government Services			
Other Services			
Sub-total	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]