

### 5. Modifications of Program Attendant upon Connection with Sub-Data Bank

The development of a sub-data bank capable of storing macro-energy data at the national level enabled simultaneous calculations of data of individual balance tables covering multiple years. Results of these calculations can be stored in the sub-data bank. Data can be called out when necessary. This means that it is possible to output data covering a certain period in a form of table corresponding to a required balance table.

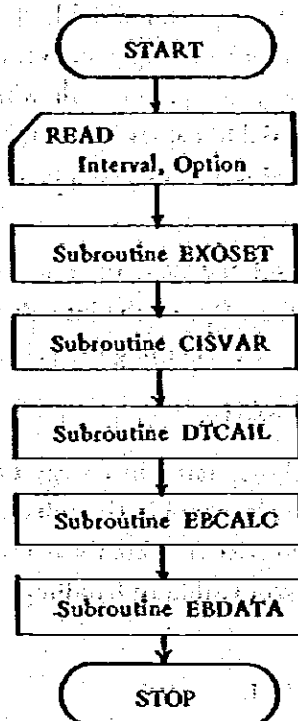
To realize such a possibility, a new calculation system for balance tables was prepared by comprehensively modifying the original calculation system.

#### A. Program to calculate balance data for multiple years and register the results in sub-data bank

In accordance with a review jointly made with Indonesian staff, data to be stored in the sub-data bank in the future will be only those on a quarterly basis which will be obtained by adding up data contained in the energy supply-demand data bank. Accordingly, results of calculations made by using the energy balance system are to be registered in the sub-data bank four times a year in principle. On the other hand, the data stored in the sub-data bank will be called out to print out individual balance tables as many times as required. In addition, it is uncertain when printing out of balance tables become necessary. Taking these points into consideration, the original program to prepare an energy balance table, whereby all the processes up to the process of printing out were integrated, was divided into two different programs; one to calculate balance data covering multiple years and register the calculation results in the sub-data bank, and the other to call out balance data stored in the sub-data bank and print out required tables.

The program, designed to calculate balance data covering multiple years and register the calculation results in the sub-data bank, functions by causing subroutines to work out in order as shown in Fig. 12.

**Fig. 12 Program to Calculate Balance Data Covering Multiple Years and Register Calculation Results in Sub-Data Bank**



#### (1) Preparation of subroutine EXOSET

Names of variables to be registered in the sub-data bank should be, in principle, decided based on the codes given to individual categories and individual types of energy or those prepared specifically for classification which were carefully decided during the first stage of the implementation of the data bank program. However, due to a strong request made by Indonesian staff, names of variables to be registered in the sub-data bank were decided based on a different rule. This results in discrepancy between variable names of the basic energy statistics stated in energy balance equations and those registered in the sub-data bank.

The subroutine EXOSET was newly prepared to solve this discrepancy. The new subroutine is designed to read out from the permanent file a table containing variable names stated in energy balance equations and those registered in the sub-data bank in parallel. The subroutine then stores variable names stated in energy balance equations in the area of NEXO dealing with names of exogenous variables, variable names registered in the sub-data bank on a calendar year basis in CNEXO, and variable names registered in the sub-data bank on a quarterly basis in QNEXO.

**(2) Modification of subroutine CLSVAR**

The subroutine CLSVAR was given no comprehensive modification but a minor one. Under the original energy balance system, the subroutine CLSVAR reads out balance equations and classify resultant variables into "exogenous variables" of which calculations can not be made without given additional data and "endogenous variables" of which calculations are possible. Under the new energy balance system with which a new subroutine EXOSET dealing with setting of exogenous variable names is incorporated, the subroutine CLSVAR makes only the cross-check of variable names and prepares only those tables related to endogenous variable names.

Concerning subroutines READEQ and NVAR affiliated with the subroutine CLSVAR, no essential modification was made, either. Due to the introduction of a new method to define arrays, minor modifications were made concerning the subroutine NVAR.

**(3) Modification of subroutine SEARCH**

Among exogenous variable names, those stated in energy balance equations are stored with the use of array of two, while those registered in the sub-data bank with the use of array of three. Accordingly, the subroutine SEARCH, which was originally designed to handle only array of two, was modified to be also capable of handling array of any numbers other than two.

**(4) Preparation of subroutine DTCALL**

The subroutine DTCALL is designed to call in the basic energy statistics required for the calculations of individual balance tables from the sub-data bank and store data covering a certain period to be calculated in VBXO which is linked with the area dealing with exogenous variable names set by the subroutine EXOSET. In this subroutine, a reference program RETRVL which was prepared specifically for the sub-data bank is called.

The basic energy statistics required for calculations of energy balance tables are classified into the following ten categories.

- 1. Data on production P\*\*\*\*\*
- 2. Data on import I\*\*\*\*\*
- 3. Data on export E\*\*\*\*\*
- 4. Data on stock W\*\*\*\*\*
- 5. Data on transformation T\*\*\*\*\*
- 6. Data on own-use H\*\*\*\*\*
- 7. Data on loss L\*\*\*\*\*
- 8. Data on auto generation A\*\*\*\*\*

9. Data on consumption C\*\*\*\*\*
10. Data on heat quantity scale factors F\*\*\*\*\*

These categories are used in making a reference. For instance, when a reference of "P\*\*\*\*\*" is made, all the data preceded by "P" and registered in the sub-data bank are referred. These data called out are checked one by one by subroutine SEARCH which refers to a table containing exogenous variable names. When there are names which accord with those contained in the table, values are stored in the corresponding position of VEXO

#### (5) Modification of subroutine EBCALC

The logic of the subroutine EBCALC is exactly the same as that under the original system. Under the new system, however, DO loop is inserted into each step to make calculations covering multiple years.

Among various processes of the energy balance program, the process to decode data contained in balance expressions a letter by a letter requires the longest CPU time. This operation should be conducted at least twice by subroutines CLSVAR and EBCALC. Not to cause further increases in the number of the aforementioned operation, DO loop is arranged to complete calculations of required periods each time an equation is decoded.

#### (6) Preparation of subroutine EBDATA

The subroutine EBDATA is designed to input results of calculations made by the subroutine EBCALC into the permanent file in accordance with the input format 2 of sub-data bank. For this operation, the table containing endogenous variable names are checked up from the beginning and variable names starting with three-letter initials of "EBC," "CBC" and "CTC" are extracted. As for energy balance data and concise energy balance data, such items as the unit of TCE, scale 3, the period when calculation was initiated and the number of data constituents are added to them prior to the output of calculated numerical values into the permanent file. As to commodity balance data, the column numbers are first extracted to call out units and scales peculiar to individual types of energy which have been prepared by data statements. They are output into the permanent file together with such items as the period when calculations were initiated, the number of data constituents and numerical values obtained by calculations.

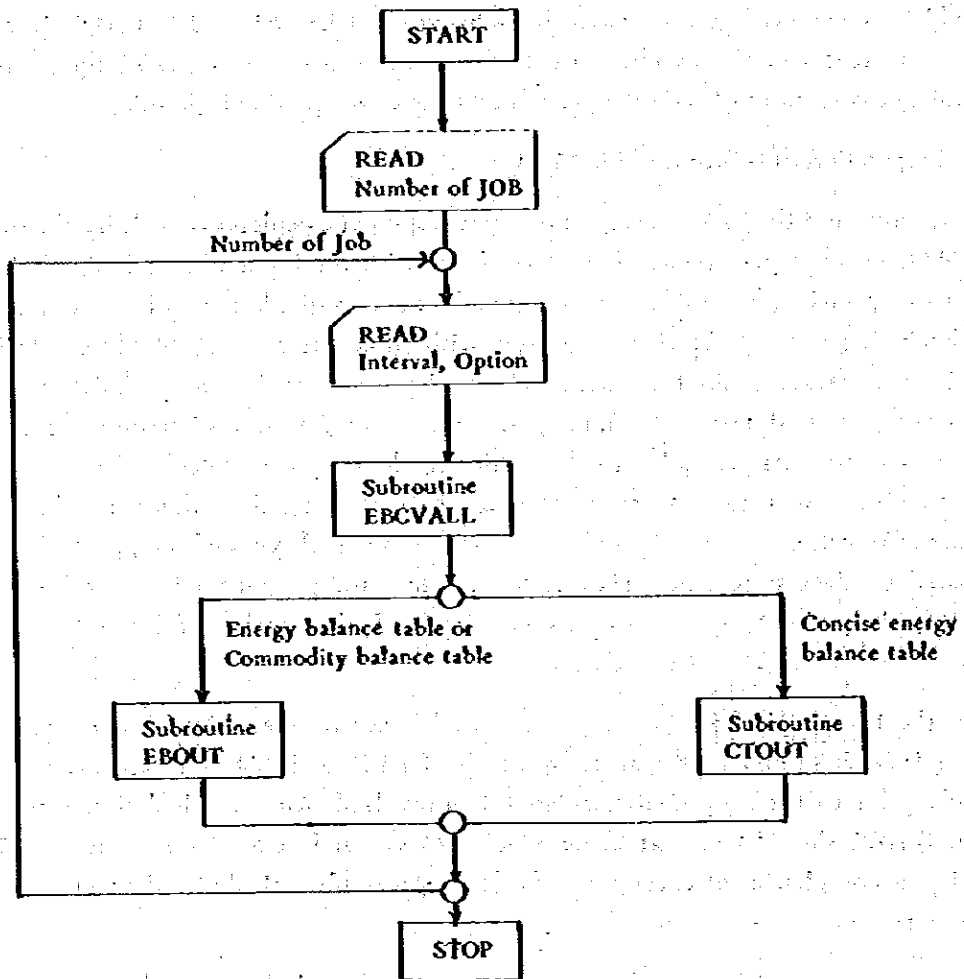
When the balance data in the calculated period is not registered in the sub-data bank yet, option IFNEW should be set at 1, by which "REST" and "ADD 2" are written down in the file prior to the output of calculated data involved. When a calculation is to be made again, IFNEW should be set at 0, by which "REST" and "CNG" are written down in the file. Upon completion of extraction of calculation results, "EOD" and "LST" are written down in the file.

Calculation results of balance data are registered in the sub-data bank by calling out from the permanent file using a program designed to renew the data to be contained in the sub-data bank.

B. Program to call out balance data from sub-data bank and to print out tables

Under the original system, balance data are obtained either by manually reading out cards containing the basic energy statistics or by summing-up micro data contained in the energy supply-demand data bank. This means that the original system is most suitable for printing out a balance table covering a single year for each time of calculations. The sub-data bank system developed under the fiscal 1980 program is capable of accumulating balance data and makes it possible to develop a program allowing simultaneous output of multiple numbers of balance tables which has been strongly requested by Indonesian staff. The program to call out balance data from the sub-data bank and print out tables has a sub-routine flow shown in Fig. 13.

Fig. 13 Program to Call out Balance Data from Sub-Data Bank and Print out Tables



### (1) Preparation of subroutine EBCALL

The subroutine EBCALL is the program to call out such data as energy balance data, commodity balance data and concise energy balance data from the sub-data bank. Integrated into the subroutine EBCALL is a reference subroutine RETRVL which refers to the sub-data bank to call out data required for printing out tables. References are made in the following forms.

1. Energy balance data  
EBC\*\*R\*\*
2. Commodity balance data  
CBC\*\*R\*\*
3. Concise energy balance data  
CTC\*\*R\*\*

Also, the summing-up function attributed to the subroutine RETRVL permits transformation of terms of data stored in the sub-data bank into those appropriate for calculations.

Balance data referred to can be stored in the array of VAL (1000, 20) up to 1,000 constituents and 20 periods. Extracting the numbers of rows and columns based on variable names, of which numerical values are used for storing data in a two-dimensional array of VP having the same form as balance tables, positions of numerical values contained in VAL are stored.

Numerical values thus calculated and stored in VAL and VP are COMMON, which are transferred to subroutines EBOUT or CTOUT.

### (2) Modifications of subroutines EBOUT and CTOUT

The subroutines EBOUT and CTOUT are remained exactly the same as they were under the original system, except that the index was newly incorporated to control an additional dimension of balance data which was required for printing out data covering multiple years.

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**GENERAL MANUAL OF ENERGY SUPPLY-DEMAND  
FORECAST I**

**CONSTRUCTION OF ENERGY SUPPLY-DEMAND  
FORECAST MODEL**



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**GENERAL MANUAL OF ENERGY SUPPLY-DEMAND FORECAST I****— Construction of Energy Supply-Demand Forecast Model —****1. Establishment of Energy Supply-Demand Forecast Method**

To construct an energy supply-demand forecast method for the Republic of Indonesia, we conducted operation in accordance with steps outlined below.

To start with, it was agreed basically during the first-stage joint work that a method used by The Institute of Energy Economics for preparing Japan's medium- and long-term energy supply-demand forecast model would be adopted as a method to be used for our preparing Indonesia's medium- and long-term energy supply-demand forecast model as part of this project.

Secondly, to our counterpart in Indonesia, we explained Japan's medium- and long-term energy supply-demand forecast model from various aspects including its outline, methods and variables, equations and systems introduced in the model.

Unfortunately, during this stage, no significant progress was made in the field of data collection on macro-economics and it was not possible to construct a macro-economic forecast model. Accordingly, all the macro-economic variables were processed as exogenous variables. Also, because Indonesia's energy balance table was available only for 1978, a tentative measure was taken. That is, data shown in an energy balance table contained in "Workshop on Energy Data of Developing Countries" prepared and published by OECD were newly aggregated in 17 energy resources and 16 energy supply and consumption sectors which was used in our operations.

Furthermore, Indonesia's medium- and long-term energy supply-demand forecast tentative model was constructed by estimating about 10 constitutive equations in respect to the final consumption sector in addition to definitive equations. The number of equations used for constructing the model totaled 102.

Finally, a tentative forecast was made on Indonesia's energy supply-demand for a period up to 1985. A primary purpose of our joint work in the first stage was not to produce plausible figures by making a forecast but to master methods and processes of forecast. In this light, it is considered that we achieved satisfactory results by and large.

Then, during the second-stage joint work, we conducted operations based on results gained through the first-stage joint work. In other words, we were primarily engaged in enlarging and filling up such results.

First of all, we conducted collection and classification of macro-economic data, which could not be carried out during the first-stage joint work, and constructed a simple macro-economic forecast model consisting of 26 equations drawn up from the collected data.

( 2 )

Secondly, data shown in Indonesia's energy balance table prepared by a software team were newly aggregated into 25 energy resources and 18 energy supply and consumption sectors to prepare a simplified balance table, which was used to construct an energy model consisting of 175 equations. After these operations, the macro-economic model and the energy model were linked, based on which Indonesia's medium- and long-term energy supply-demand forecast model (number of equations; 201) was constructed. Finally, a final test was conducted on a seven-year period from 1972 to 1978. Also made was a forecast on a twelve-year period from 1979 to 1990. Under a close cooperation with the software team, processes of the test and the forecast were made into the form of programming.

A primary purpose of the second-stage joint work was to solidify a fundamental framework of Indonesia's medium- and long-term energy supply-demand forecast model. It is considered that we could achieve the purpose to some extent.

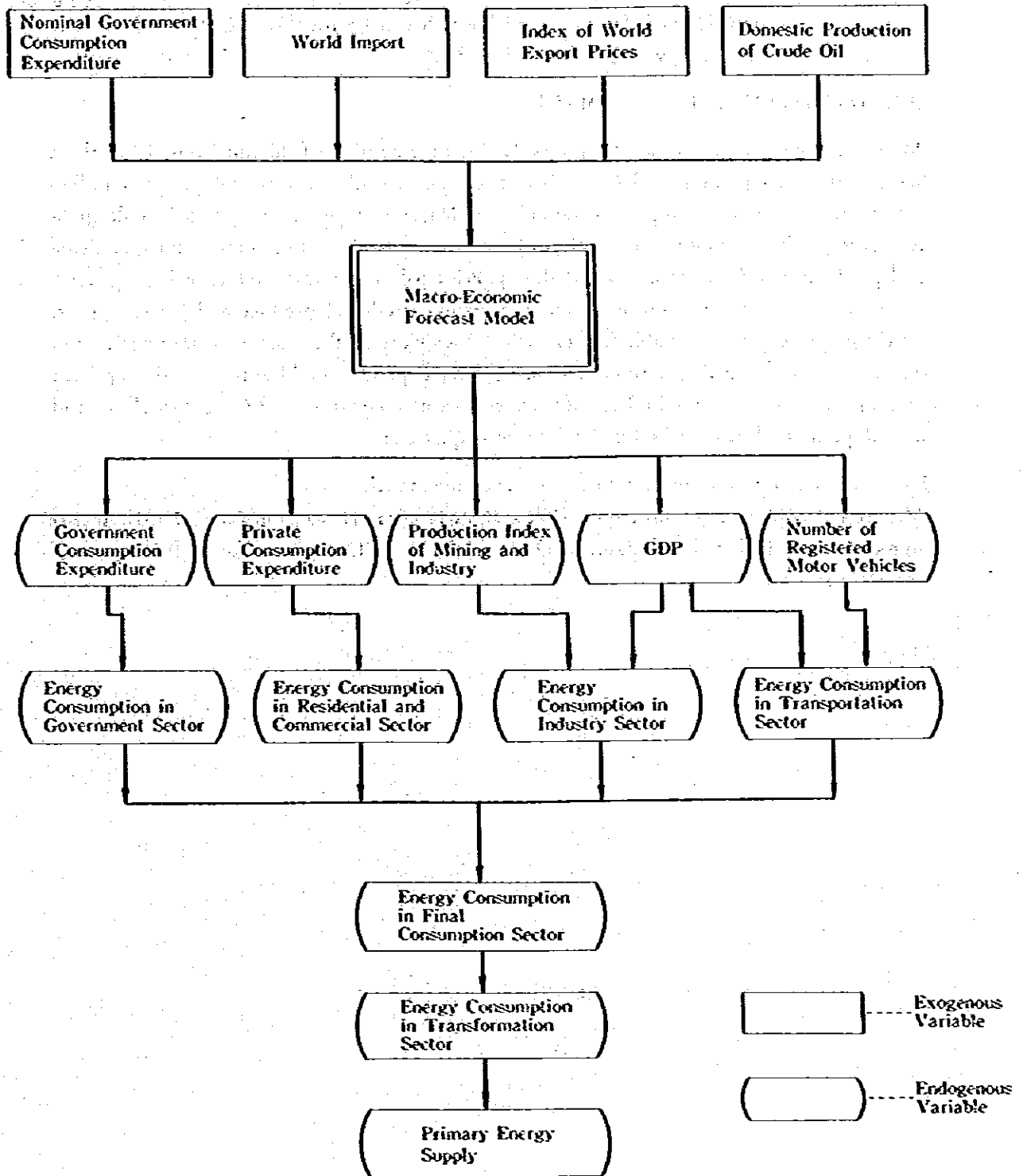
## 2. Concept of Supply-Demand Forecast Model

As mentioned before, to prepare a medium- and long-term energy supply-demand forecast model of Indonesia, we adopted in our joint work a method used by The Institute of Energy Economics. Concretely speaking, econometric methods were used for macro-economic model and the energy final consumption sector and relative equations in which technical properties among individual energy resources (rate of loss, energy sector own use, etc.) were taken into a consideration were prepared as to the energy transformation sector. Meantime, in respect to the primary energy supply sector, almost all the energy supply sources (hydro generation, crude oil production, etc.) were processed as policy variables (= exogenous variables).

Flow of preparing the model is as follows; based on the macro-economic model, figures of GDP, private consumption expenditure, government consumption expenditure, number of registered motor vehicles, etc. were deduced first. Using the resultant figures as explanatory variables, energy consumption of the final consumption sector (industry, residential and commercial, transportation and government sectors) were obtained and, as the final step, balances were struck in the primary energy supply sector (production, import and export, etc.).

Flow chart shown below is schematization of the aforementioned processes.

Fig. 1 Flow Chart for Outline of Indonesia's Medium- and Long-Term Energy Supply-Demand Forecast



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### 3. Preparation of Supply-Demand Forecast Model

Based on the concept explained in section 2, we prepared Indonesian's medium- and long-term energy supply-demand forecast model which can be roughly classified into macro-economic model and energy supply-demand model.

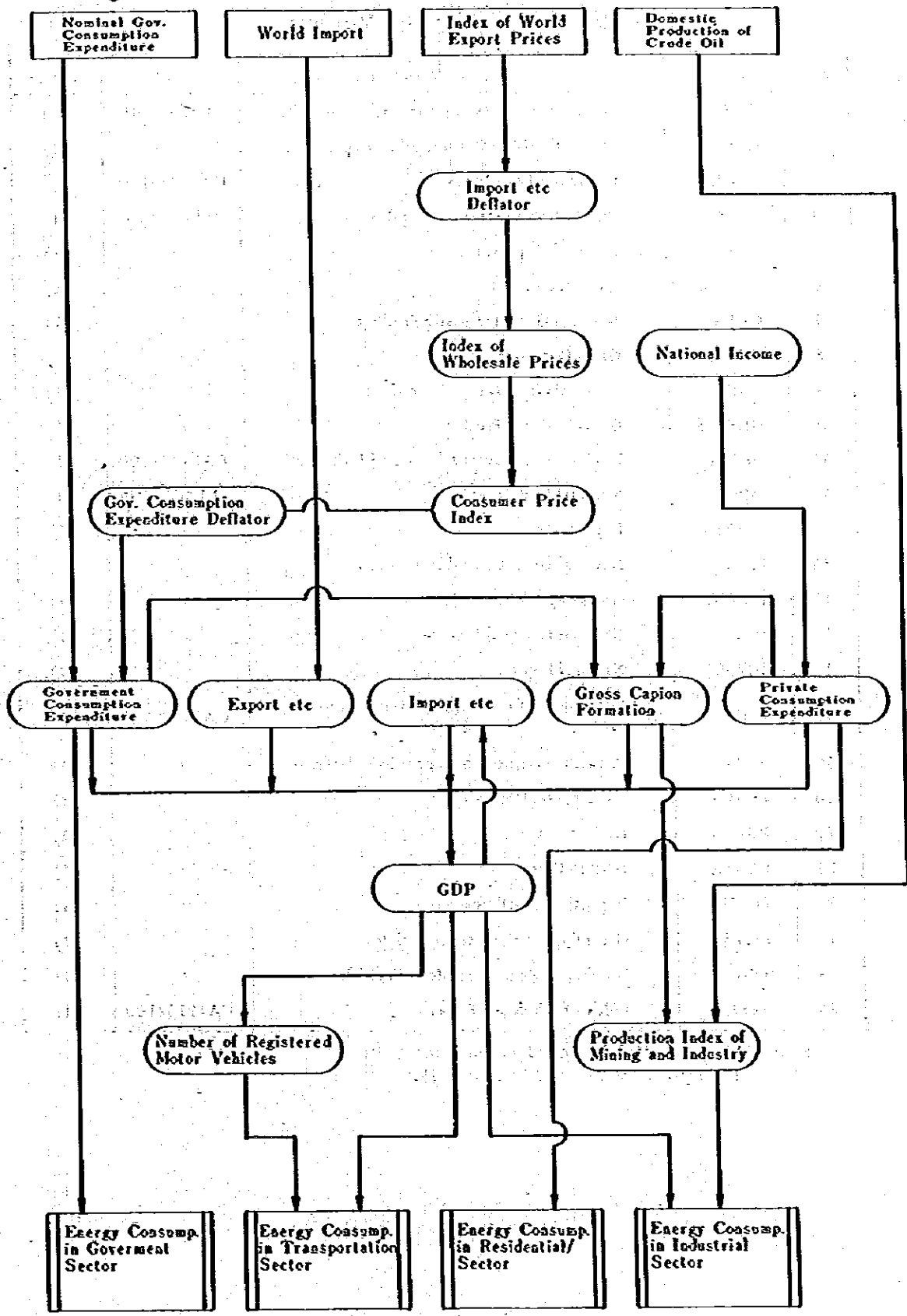
#### 3-1. Outline of Macro-Economic Model

Macro-economic model we jointly prepared this time consists of 26 equations. 17 of them are constitutive equations and 9 definitive equations. In other words, endogenous variables are numbered 26 and exogenous variables 6. Major endogenous variables include gross domestic product, private consumption expenditure, government consumption expenditure and production index of mining and industry. Principal exogenous variables includes government consumption expenditure (in current prices), crude oil product and world import. Of them, an exogenous variable (policy variable) which takes the most important position in our model is nominal government consumption expenditure. Meantime, ordinary least squares were used as a method to estimate constitutive equation and Gauss-Seidel method was adopted as a method to solve simultaneous equations.

Flow chart shown in Fig. 2 indicates the outline of the model.

Meantime, symbol, name, unit and source of each variable are listed up in Tables 1 and 2. Arabic numerals "73" included in variable marks (ex. CG73&, CPI73&) stand for the 1973 price or the 1973 standard.

Fig. 2 Flow Chart for Outline of Indonesia's Macro-Economic Model



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Table I List of Endogenous Variables

No.	Symbol	Name of Variables	Unit	Source
1	CG73&	Government Consumption Expenditure	1 billion RP	1)
2	CP&	Nominal Private Consumption Expenditure	"	1)
3	CP173&	Consumer Price Index	CA1973=100	2)
4	CP73&	Private Consumption Expenditure	1 billion RP	1)
5	EXP&	Nominal Export, etc.	"	1)
6	EXP73&	Export, etc.	"	1)
7	GDP&	Nominal Gross Domestic Product	"	1)
8	GDP73&	Gross Domestic Product	"	1)
9	GNP&	Nominal Gross National Product	"	1)
10	GNP73&	Gross National Product	"	1)
11	IIP73&	Production Index of Mining and Industry	CA1973=100	1)
12	IMP&	Nominal Import, etc.	1 billion RP	1)
13	IMP73&	Import, etc.	"	1)
14	IIP&	Nominal Gross Capital Formation	"	1)
15	IIP73&	Gross Capital Formation	"	1)
16	NI&	Nominal National Income	"	1)
17	NI73&	National Income	"	1)
18	POG&	Government Consumption Expenditure Deflator	CA1973=100	1)
19	PCP&	Private Consumption Expenditure Deflator	"	1)
20	PEXP&	Export, etc. Deflator	"	1)
21	PGDP&	GDP Deflator	"	1)
22	PGNP&	GNP Deflator	"	1)
23	PIMP&	Import, etc. Deflator	"	1)
24	PIIP&	Gross Capital Formation Deflator	"	1)
25	TR&	Number of Registered Motor Vehicles	"	1)
26	WPI73&	Index of Wholesale Prices	CA1973=100	1)

Source: 1) Data offered from Indonesian counterparts  
 2) *International Financial Statistics*, IMF.

Table 2 List of Exogenous Variables

No.	Symbol	Name of Variables	Unit	Source
1	CG&	Nominal Government Consumption Expenditure	1 billion RP	1)
2	PAGRGPE73&	Agricultural Export Deflator	CA1973=100	1)
3	PCROIL&	Crude Oil Export Prices	Dollar/Barrel	1)
4	PETROP&	Crude Oil Product	1000 Barrel	1)
5	PWE75&	Index of World Export Prices	CA1975=100	2)
6	WIM75&	World Import	1 billion RP	2)

Source: 1) Data offered from Indonesian counterparts  
2) *International Financial Statistics*, IMF.

Listed below are individual equations. Abbreviations stand for as follows; R<sup>2</sup> – decision coefficient, ADJ (R<sup>2</sup>) – decision coefficient with free factors adjusted, D.W. – Durbin Watson ratio, S – standard error. Figures shown in parentheses under coefficients, which represent explanatory variables, of individual equations are t value. Descriptions, such as INDONESIA01, which follow numeral number of equations represent names of the equations. OLS is to indicate that constitutive equations were estimated using ordinary last squares.

( 1) INDONESIA01 (OLS , FA, 71 TO 78)

$$EXP73& = -507.3603 + 2.199797 * WIM75&$$

(-2.201) ( 8.14)

$$R^2 = 0.9169 \text{ (ADJ } R^2 = 0.9031)$$

$$D.W. = 2.70$$

$$S = 83.574$$

( 2) INDONESIA02 (OLS , FA, 71 TO 78)

$$PIMP& = +20.53160 + 1.295865 * PWE75&$$

( 2.315) ( 13.2)

$$R^2 = 0.9671 \text{ (ADJ } R^2 = 0.9616)$$

$$D.W. = 1.79$$

$$S = 7.0491$$

( 3) INDONESIA03 (OLS , FA, 72 TO 78)

$$NI73& = +735.2395 + 0.8035411 * GDP73& (-1)$$

(2.549) ( 20.1)

$$R^2 = 0.9878 \text{ (ADJ } R^2 = 0.9854)$$

$$D.W. = 1.59$$

$$S = 110.83$$

( 4) INDONESIA04 (OLS , FA, 71 TO 78)

$$WPI73& = -1.196510 + 0.5507690 * PIMP& + 0.007089847 * NI&$$

(-0.069) ( 2.42) ( 4.91)



( 8 )

R²= 0.9911 (ADJ[R²]= 0.9875)  
D.W.= 2.03  
S= 6.6569

( 5 ) INDONESIA05 (OLS , FA, 71 TO 78)

CPI73&=+3.251428+0.008842711\*NI&+0.4516194\*PIMP&;  
( 0.242 ) ( 7.91 ) ( 2.56 )

R²= 0.9956 (ADJ[R²]= 0.9938)  
D.W.= 2.01  
S= 5.1596

( 6 ) INDONESIA06 (OLS , FA, 71 TO 78)

PCP&=+20.15272+0.007234234\*NI&+0.3515267\*PIMP&;  
( 3.647 ) ( 15.7 ) ( 4.84 )

R²= 0.9988 (ADJ[R²]= 0.9984)  
D.W.= 2.92  
S= 2.1220

( 7 ) INDONESIA07 (OLS , FA, 71 TO 78)

PCG&=+7.905765+0.8627982\*CPI738;  
( 2.252 ) ( 40.4 )

R²= 0.9963 (ADJ[R²]= 0.9957)  
D.W.= 1.31  
S= 3.7249

( 8 ) INDONESIA08 (OLS , FA, 71 TO 78)

PITP&=-8.353526+0.8061570\*PIMP&+0.003714760\*NI&;  
(-0.394) ( 2.89 ) ( 2.10 )

R²= 0.9810 (ADJ[R²]= 0.9735)  
D.W.= 2.16  
S= 8.1383

( 9 ) INDONESIA09 (OLS , FA, 71 TO 78)

PEXP&=-9.513239+12.87555\*PCROIL&+0.6462070\*PAGRGPE73&;  
(-1.544) ( 15.8 ) ( 7.17 )

R²= 0.9979 (ADJ[R²]= 0.9971)  
D.W.= 2.05  
S= 4.8026

( 10 ) INDONESIA11 (OLS , FA, 72 TO 78)

NI&=-17028.45+0.2561937\*NI&(-1)+3.601317\*GDP73&(-1);  
(-3.514) ( 1.16 ) ( 3.82 )

R²= 0.9959 (ADJ[R²]= 0.9939)  
D.W.= 2.85  
S= 416.40

( 11 ) INDONESIA12 (OLS , FA, 72 TO 78)

CP73&=+42.05767+0.4626462\*NI73&+0.4925135\*CP73&(-1);  
( 0.078 ) ( 1.40 ) ( 1.45 )

R²= 0.9815 (ADJ[R²]= 0.9723)  
D.W.= 1.79  
S= 144.78

( 12 ) INDONESIA13 CG73&=CG&/ (POG&/100.0);

( 13) INDONESIA14 (OLS , FA, 71 TO 78)

$$\text{ITP73\&} = -910.6464 + 0.3542265 * \text{CP73\&} + 0.6651544 * \text{CG73\&};$$

$$(-5.534) \quad (4.69) \quad (1.82)$$

$$R^2 = 0.9887 \text{ (ADJ[R}^2\text{]} = 0.9842)$$

$$D.W. = 1.75$$

$$S = 60.868$$

( 14) INDONESIA15 (OLS , FA, 71 TO 78)

$$\text{IMP73\&} = -1738.216 + 0.4530140 * \text{GDP73\&};$$

$$(-6.532) \quad (12.8)$$

$$R^2 = 0.9649 \text{ (ADJ[R}^2\text{]} = 0.9590)$$

$$D.W. = 1.95$$

$$S = 122.53$$

( 15) INDONESIA16  $\text{GDP73\&} = \text{CP73\&} + \text{CG73\&} + \text{ITP73\&} + \text{EXP73\&} - \text{IMP73\&};$

( 16) INDONESIA17  $\text{CP\&} = \text{CP73\&} + (\text{PCP\&} / 100.0);$

( 17) INDONESIA18  $\text{ITP\&} = \text{ITP73\&} * (\text{PITP\&} / 100.0);$

( 18) INDONESIA19  $\text{EXP\&} = \text{EXP73\&} * (\text{PEXP\&} / 100.0);$

( 19) INDONESIA20  $\text{IMP\&} = \text{IMP73\&} * (\text{PIMP\&} / 100.0);$

( 20) INDONESIA21  $\text{GDP\&} = \text{CP\&} + \text{CG\&} + \text{ITP\&} + \text{EXP\&} - \text{IMP\&};$

( 21) INDONESIA22 (OLS , FA, 71 TO 78)

$$\text{IIP73\&} = +0.5574405 + 0.04102759 * \text{ITP73\&} + 0.0001029514 * \text{PETROP\&};$$

$$(0.305) \quad (26.9) \quad (13.6)$$

$$R^2 = 0.9995 \text{ (ADJ[R}^2\text{]} = 0.9993)$$

$$D.W. = 2.31$$

$$S = 0.74353$$

( 22) INDONESIA23  $\text{PGDP\&} = 100.0 * \text{GDP\&} / \text{GDP73\&};$

( 23) INDONESIA24 (OLS , FA, 71 TO 78)

$$\text{GNP73\&} = +429.7205 + 0.9003087 * \text{GDP73\&};$$

$$(5.006) \quad (79.1)$$

$$R^2 = 0.9990 \text{ (ADJ[R}^2\text{]} = 0.9988)$$

$$D.W. = 1.16$$

$$S = 39.532$$

( 24) INDONESIA25 (OLS , FA, 71 TO 78)

$$\text{GNP\&} = +15.06406 + 0.9616927 * \text{GDP\&};$$

$$(0.226) \quad (192)$$

$$R^2 = 0.9998 \text{ (ADJ[R}^2\text{]} = 0.9998)$$

$$D.W. = 1.90$$

$$S = 87.402$$

( 25) INDONESIA26  $\text{PGNP\&} = 100.0 * \text{GNP\&} / \text{GNP73\&};$

( 26) INDO000 (OLS , FA, 72 TO 78)

$$\text{TR\&} = -728586.4 + 149.6385 * \text{GDP73\&} + 0.9180960 * \text{TR\&}(-1);$$

$$(-1.885) \quad (1.83) \quad (5.77)$$

$$R^2 = 0.9975 \text{ (ADJ[R}^2\text{]} = 0.9963)$$

$$D.W. = 3.00$$

$$S = 43061$$

(10)

### 3-2. Outline of Energy Supply-Demand Model

Newly aggregating data presented in Indonesia's energy balance table which was prepared by the software team, we prepared a "concise energy balance table of Indonesia" consisting of 25 energy resources and 18 energy supply and consumption sectors, which is presented below.

**Table 3 Configuration of Columns of Concise Energy Balance Table**

Column	Energy Resources
C01	Solid Fuels
C02	Crude
C03	Petroleum Products Total
C04	Gasoline
C05	Jet Fuel
C06	Kerosene
C07	Diesel Oil
C07A	Automotive Diesel Oil
C07B	Industrial Diesel Oil
C08	Heavy Fuel Oil
C09	Naphthas + NGL (Condensed Natural Gas)
C10	Other Petroleum Products
C10A	LPG
C10B	Others
C11	Gas
C11A	Natural Gas
C11B	LNG
C11C	Town Gas
C11D	Others
C12	Nuclear Power
C13	Hydro & Geothermal
C14	Electricity
C15	Commercial Energy Total
C16	Non-Commercial Energy
C17	Total (C15 + C16)

Table 4 Configuration of Rows of Concise Energy Balance Table

Row	Energy Supply & Consumption Sectors
R01	Domestic Production
R02	Import
R03	Export
R04	Bunker
R05	Stock Change
R06	Total Primary Energy Supply
R07	Electric Generation
R08	Town Gas Producers
R09A	Refineries
R09B	NGL Plant
R10A	Energy Sector Own Use
R10B	Loss etc.
R11	Total Final Consumption
R12	Industry Sector
R13	Transportation Sector
R14	Residential & Commercial Sector
R15	Government Sector
R16	Non-Energy Consumption

Secondly, processing the data shown in the concise energy balance table with the methods mentioned in this paper so far, we prepared an energy supply-demand model. Constitutive equations of the model are numbered 11 and definitive equations 163. In other words, there are 162 endogenous variables and 115 exogenous variables. The number of constitutive equations resulted in limited due to sharp fluctuations in individual variables which made it difficult to obtain significant estimated equations as many as planned. On the other hand, numbers of definitive equations and exogenous variables increased.

Major endogenous variables include energy consumption by type of energy source in industry, transportation, residential and commercial, and government sectors. Principal exogenous variables include primary energy supply such as production, import and export by type of energy resource and yield of individual petroleum products.

Flow chart shown below indicates the outline of the model.

Fig. 3 Flow Chart of Solid Fuels Part

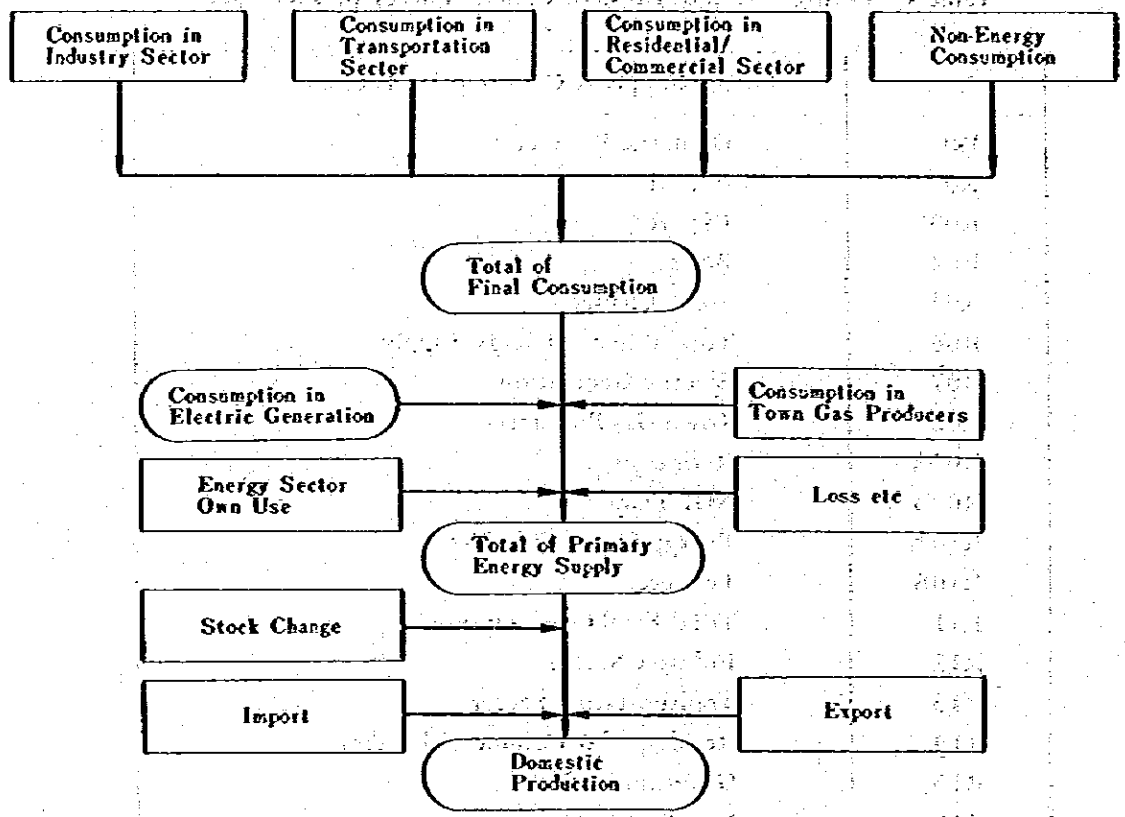


Fig. 4 Flow Chart of Crude Oil Part

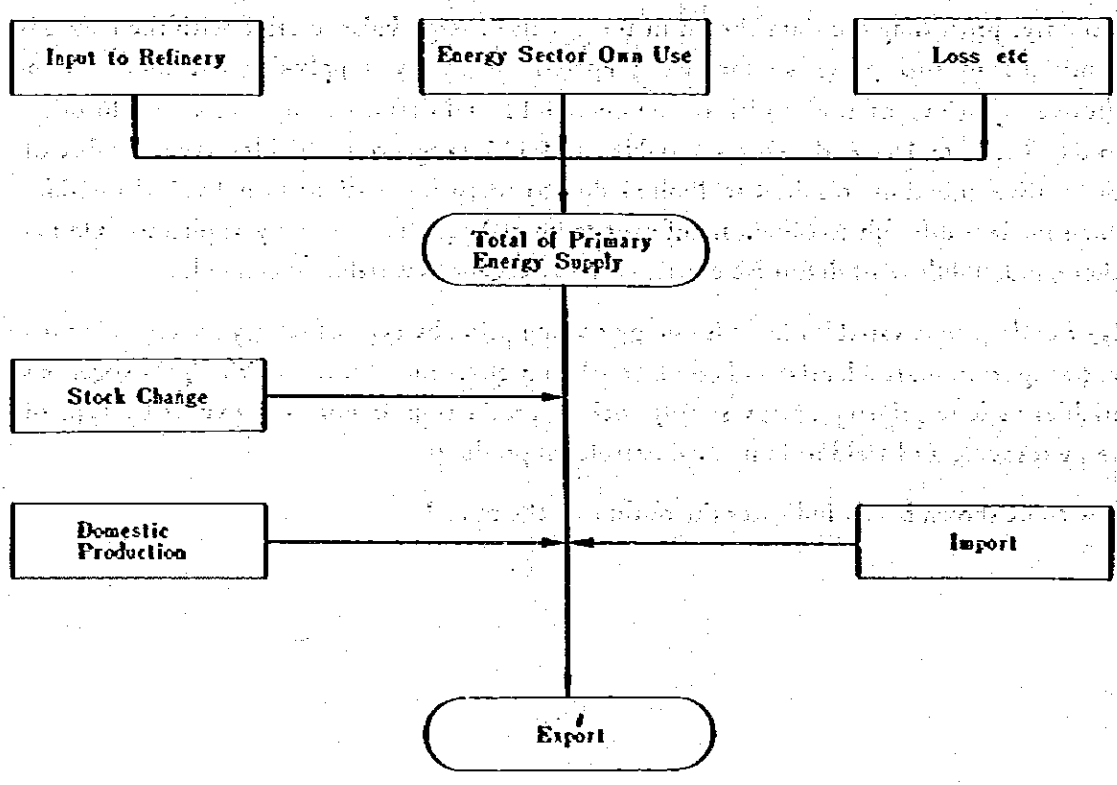


Fig. 5 Flow Chart of Gasoline Part

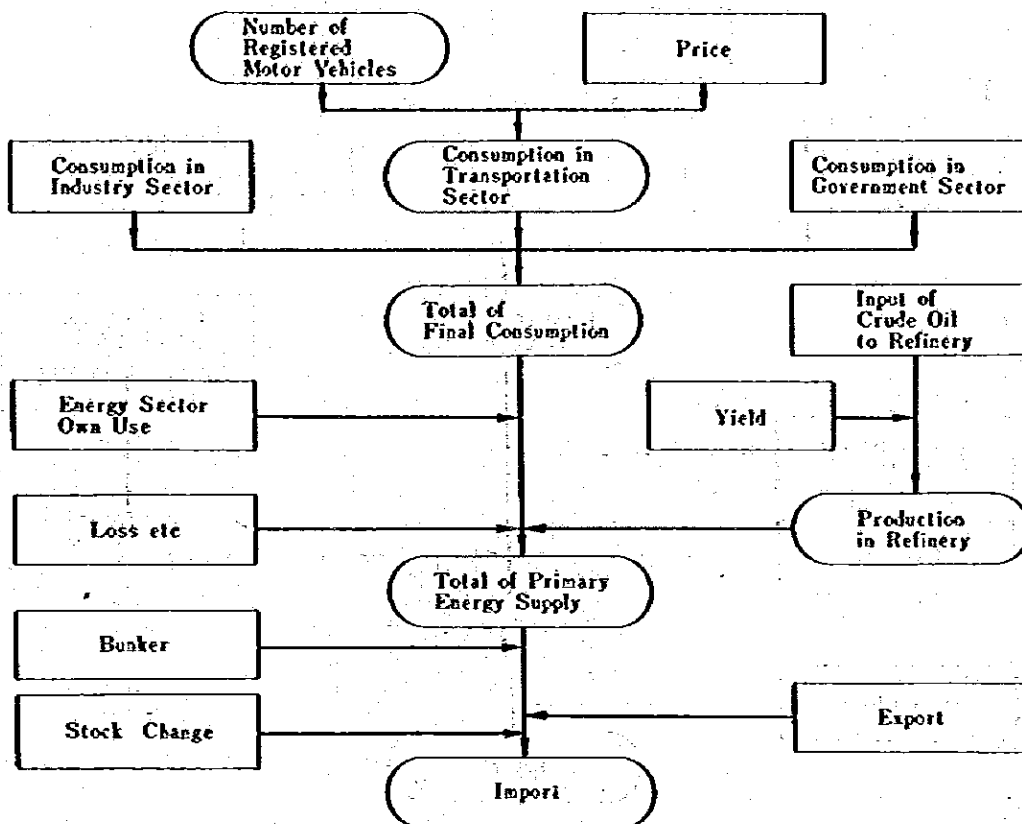
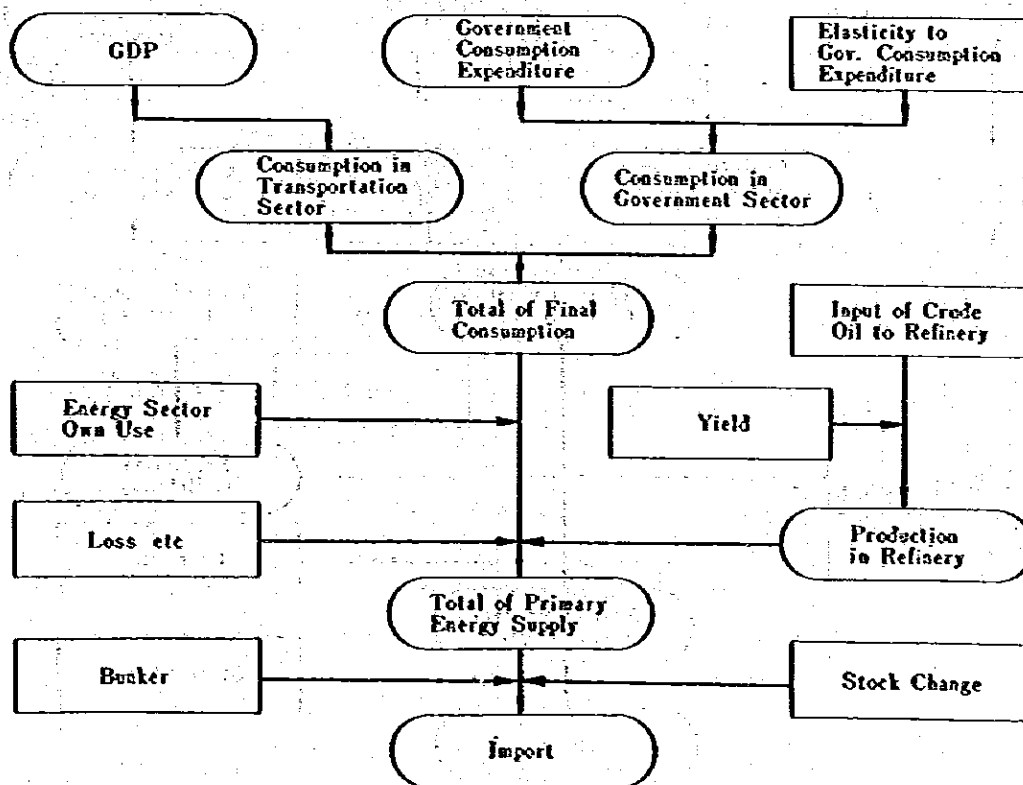


Fig. 6 Flow Chart of Jet Fuel Part



(14)

Fig. 7 Flow Chart of Kerosene Part

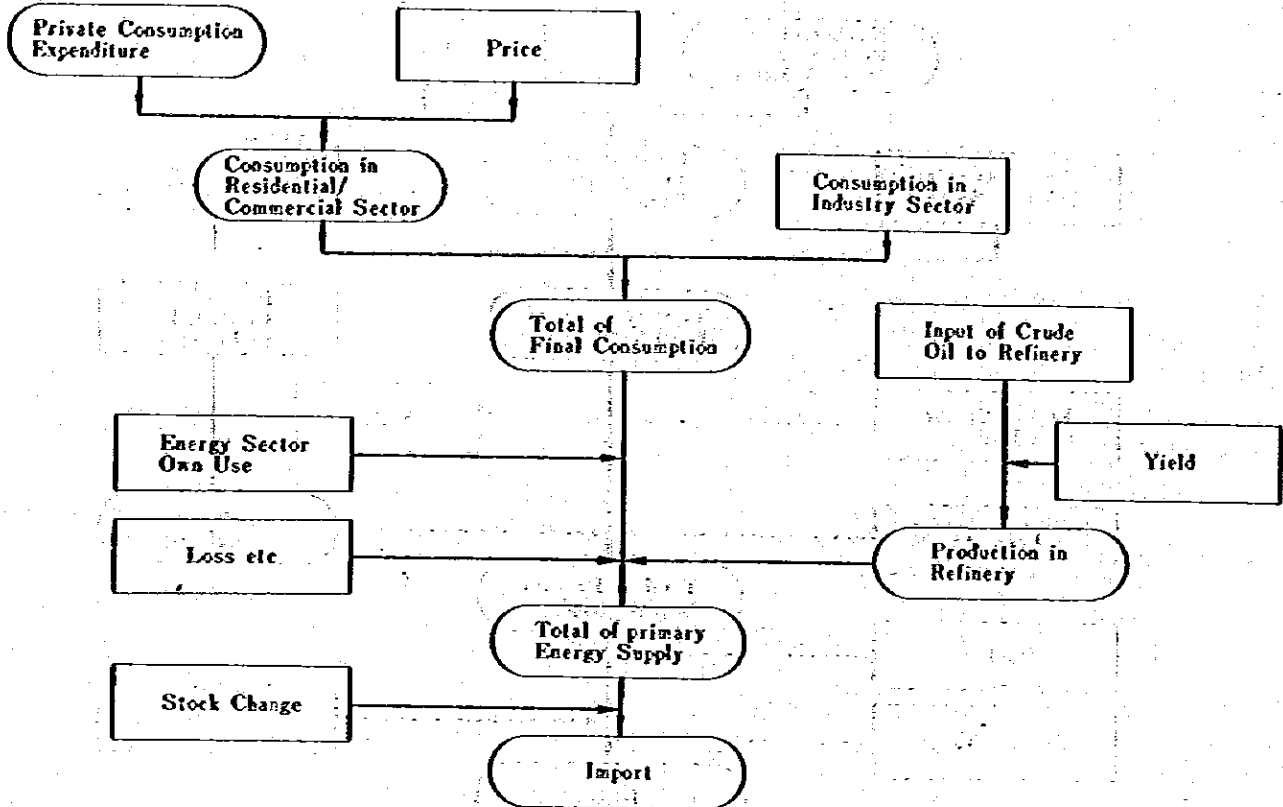


Fig. 8 Flow Chart of Automotive Diesel Oil Part

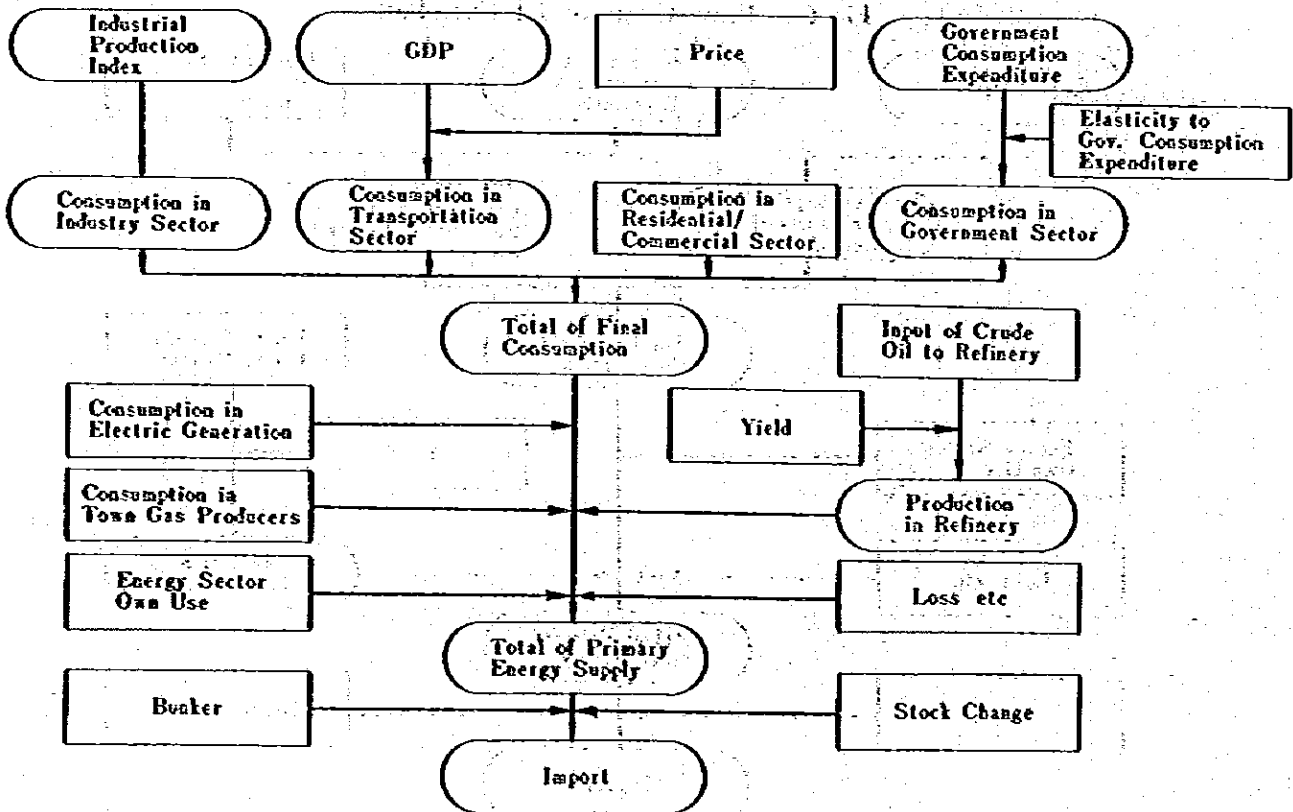


Fig. 9 Flow Chart of Industrial Diesel Oil Part

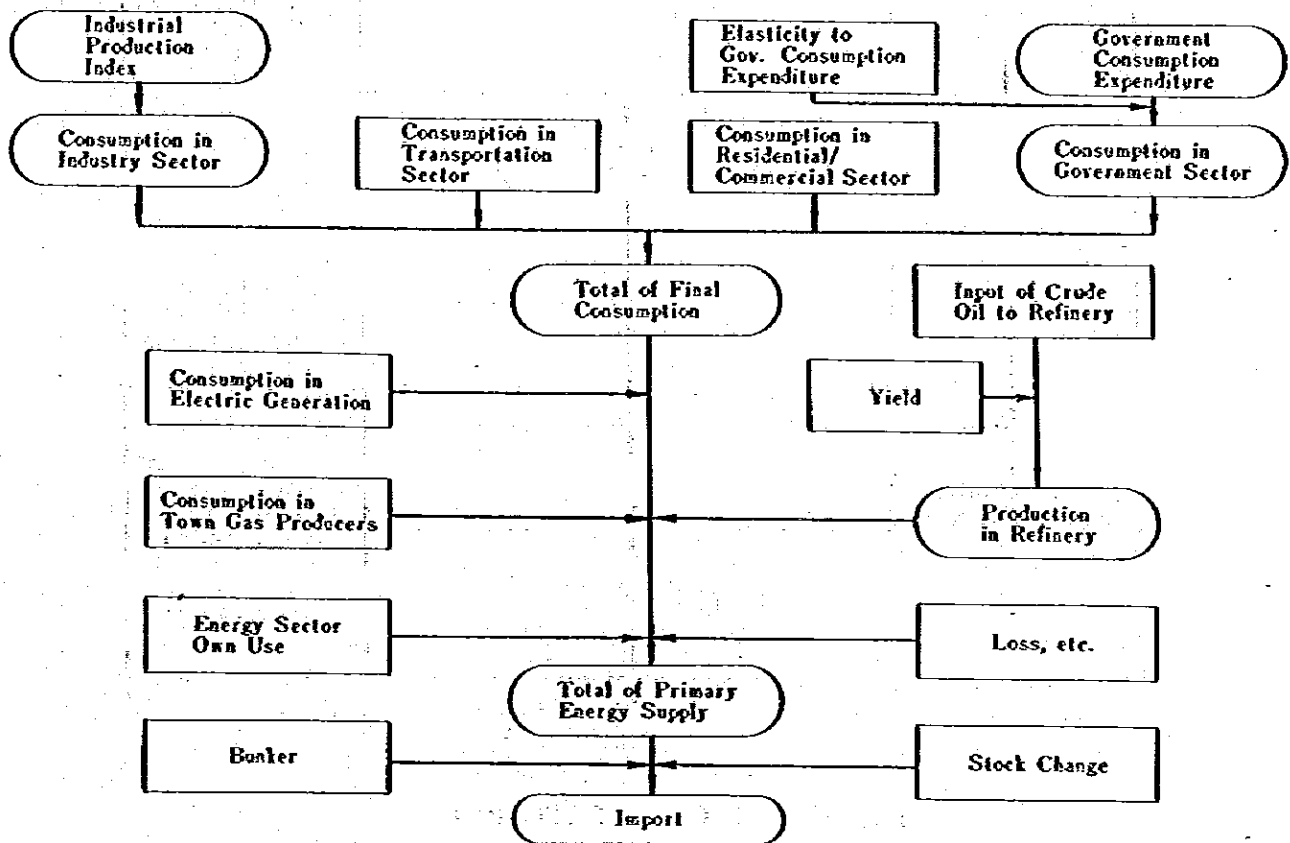
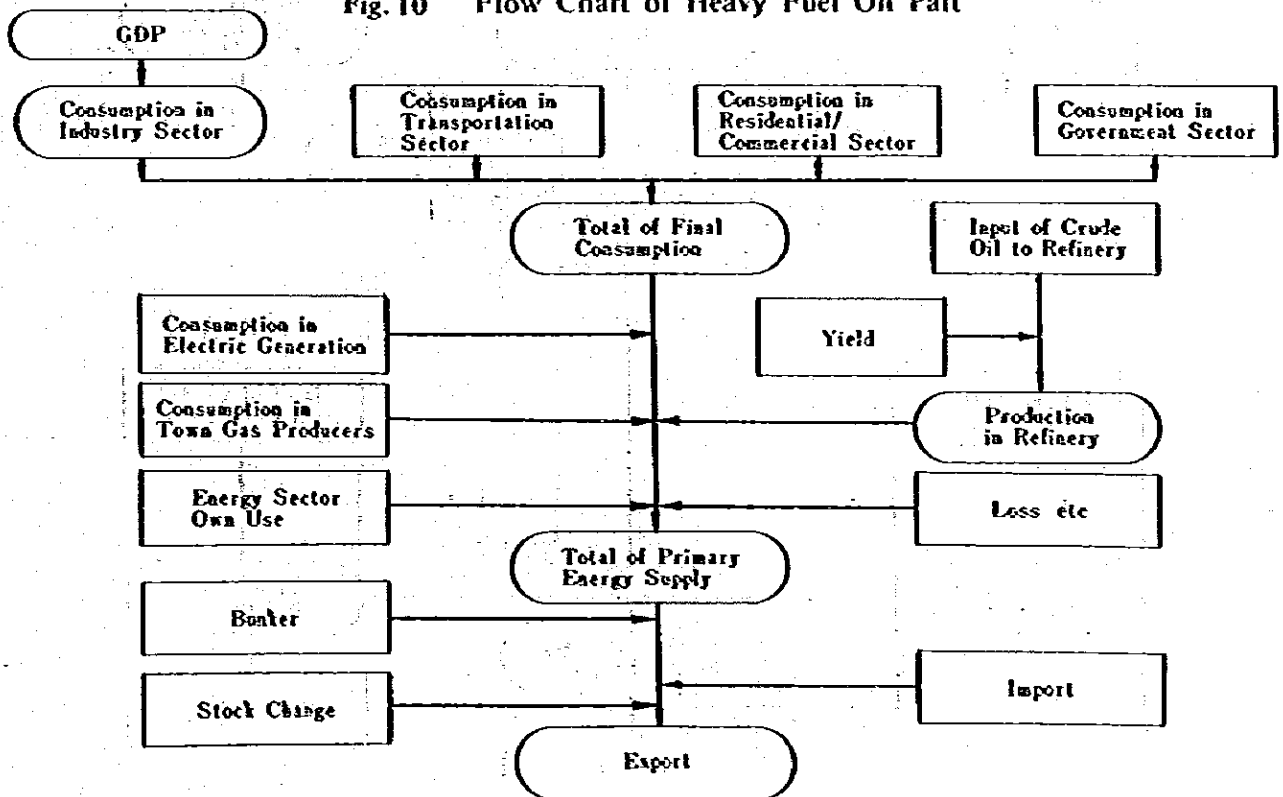


Fig. 10 Flow Chart of Heavy Fuel Oil Part





(16)

Fig. 11 Flow Chart of Naptha & NGL Part

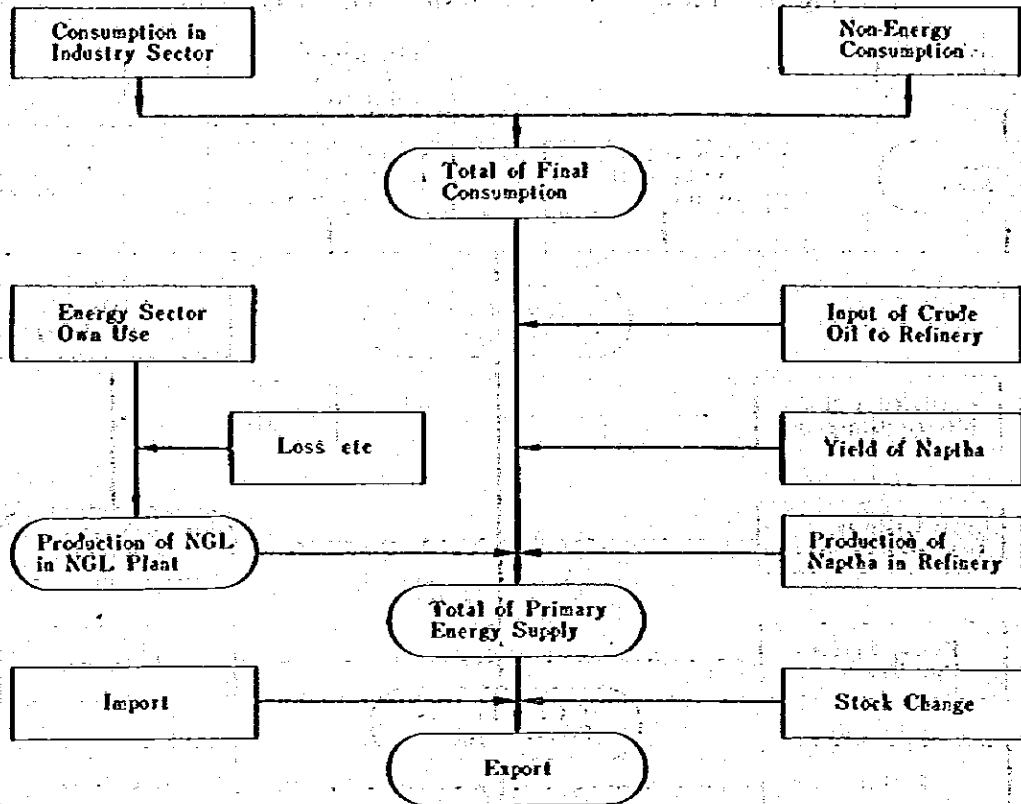


Fig. 12 Flow Chart of LPG Part

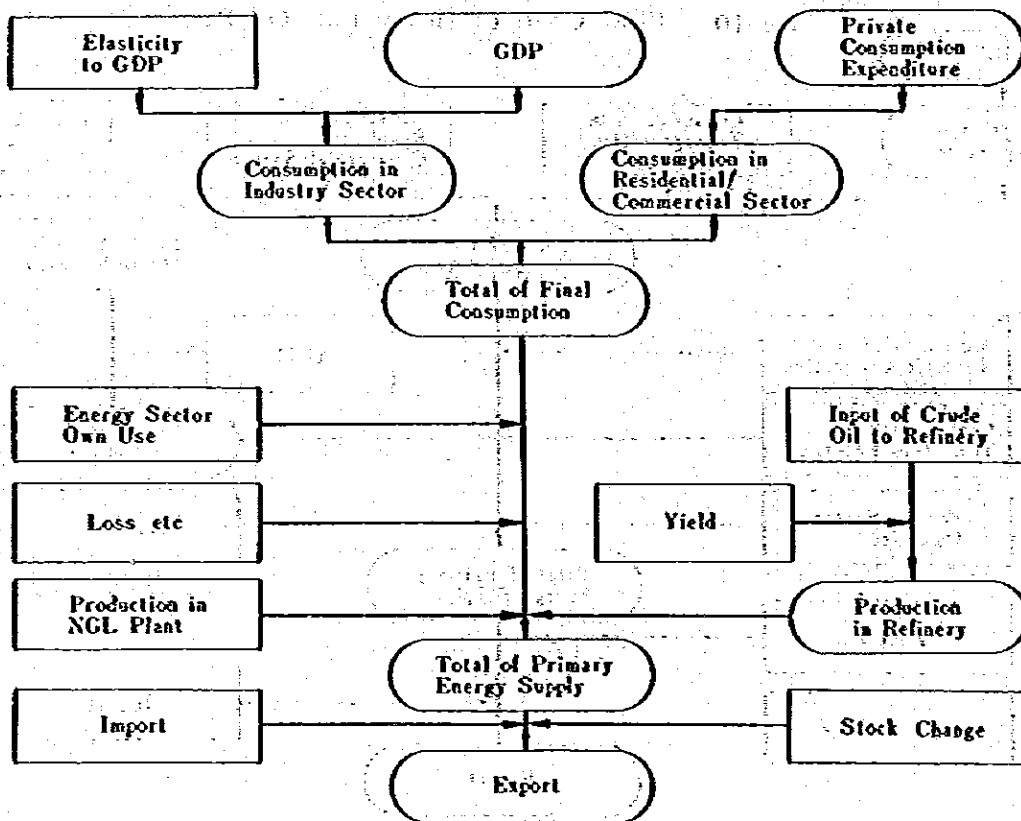


Fig. 13 Flow Chart of Other Petroleum Products Part

(17)

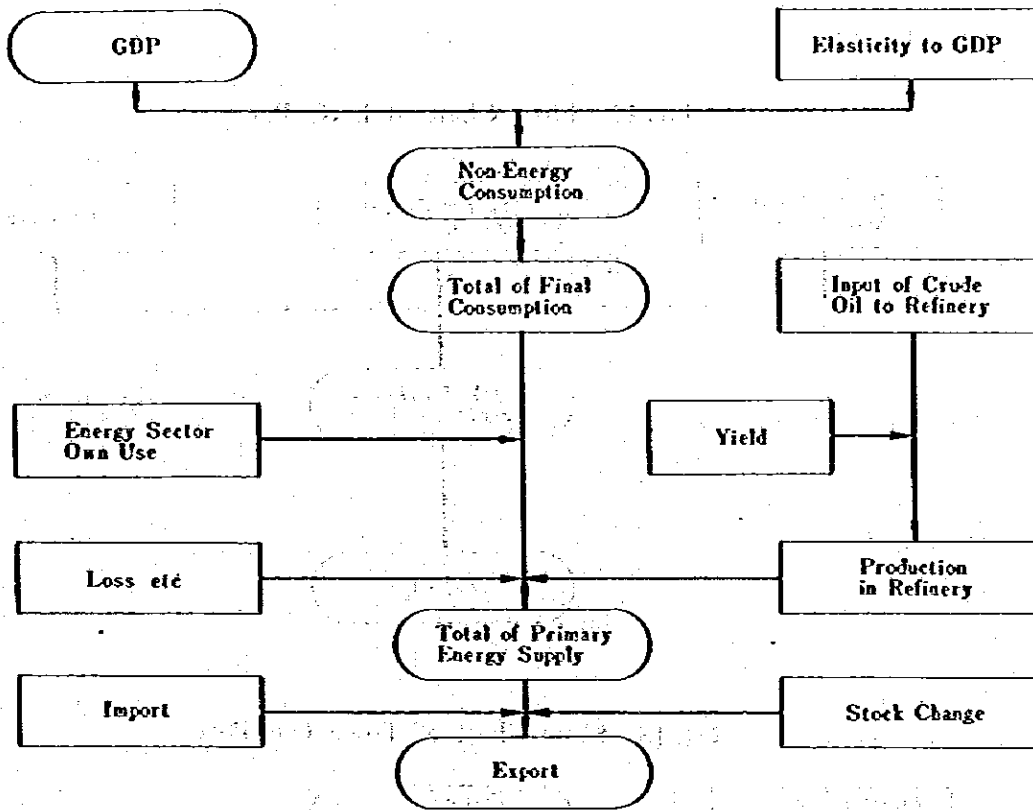
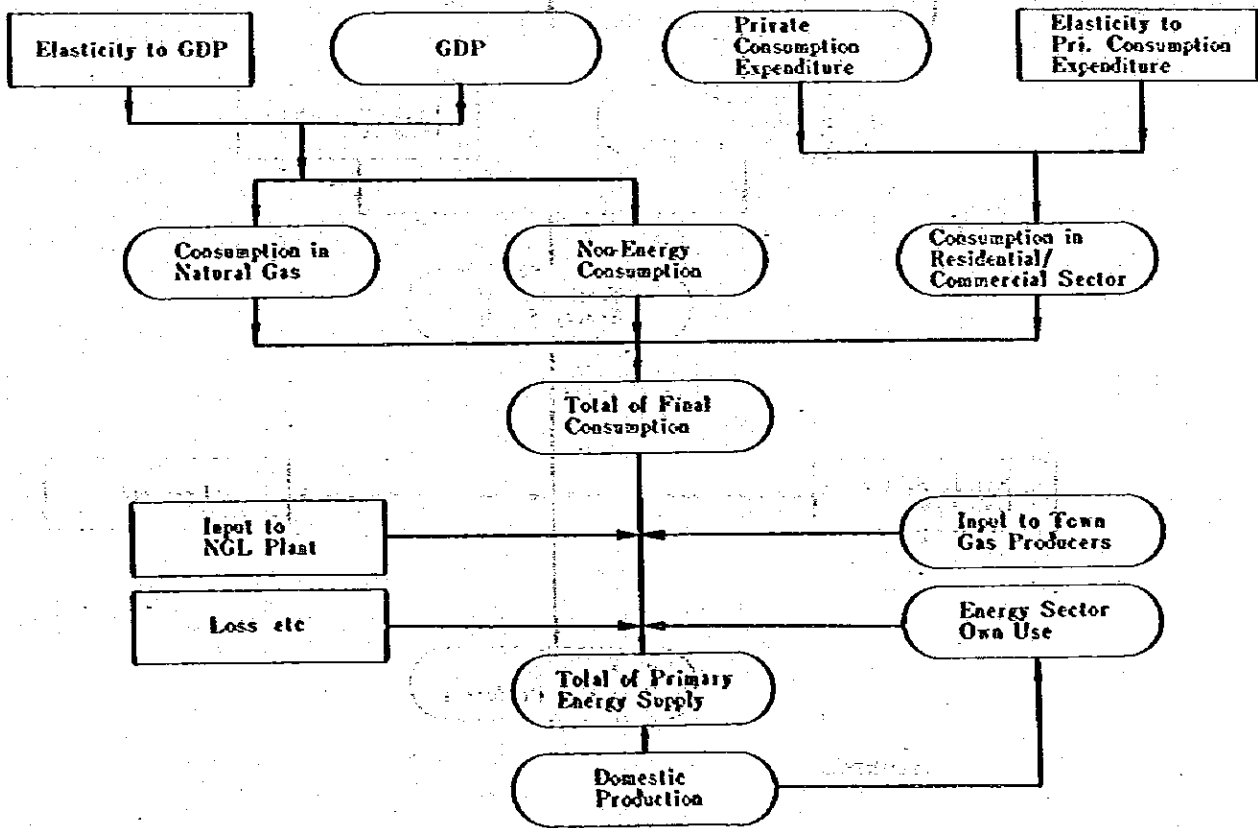


Fig. 14 Flow Chart of Natural Gas Part



(18)

Fig. 15 Flow Chart of LNG Part

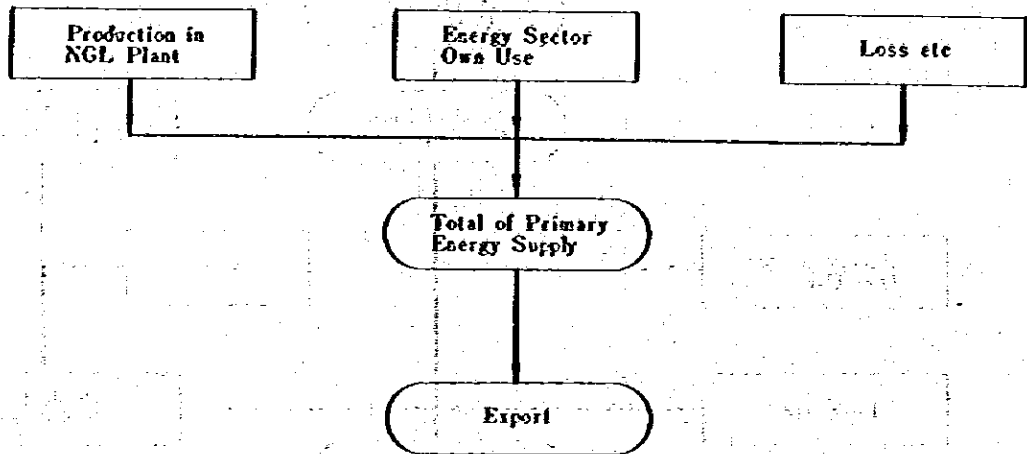


Fig. 16 Flow Chart of Town Gas Part

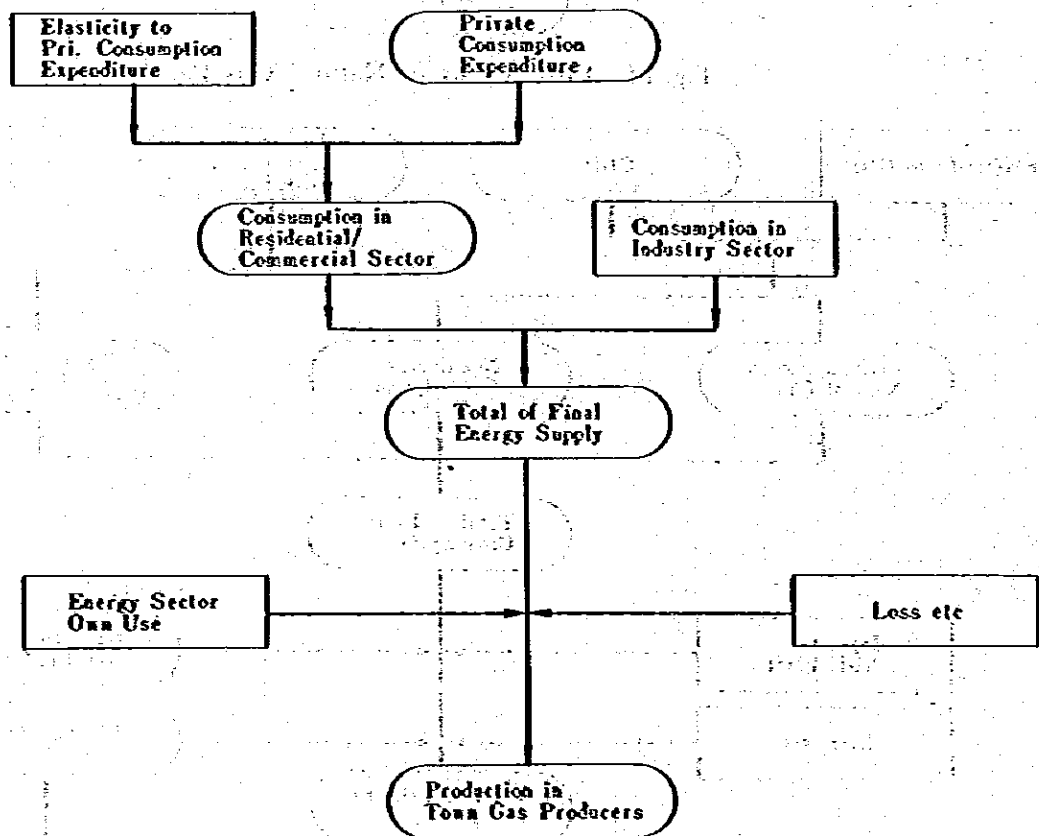


Fig. 17 Flow Chart of Electricity Part

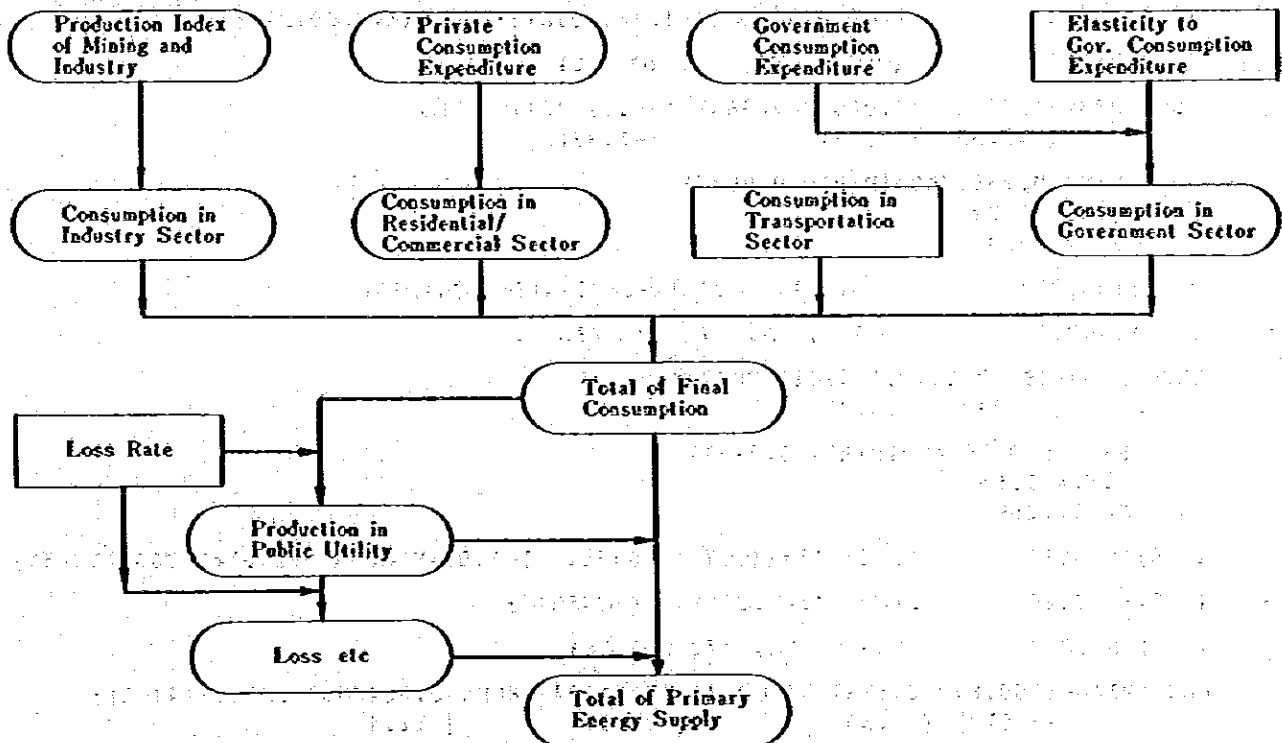
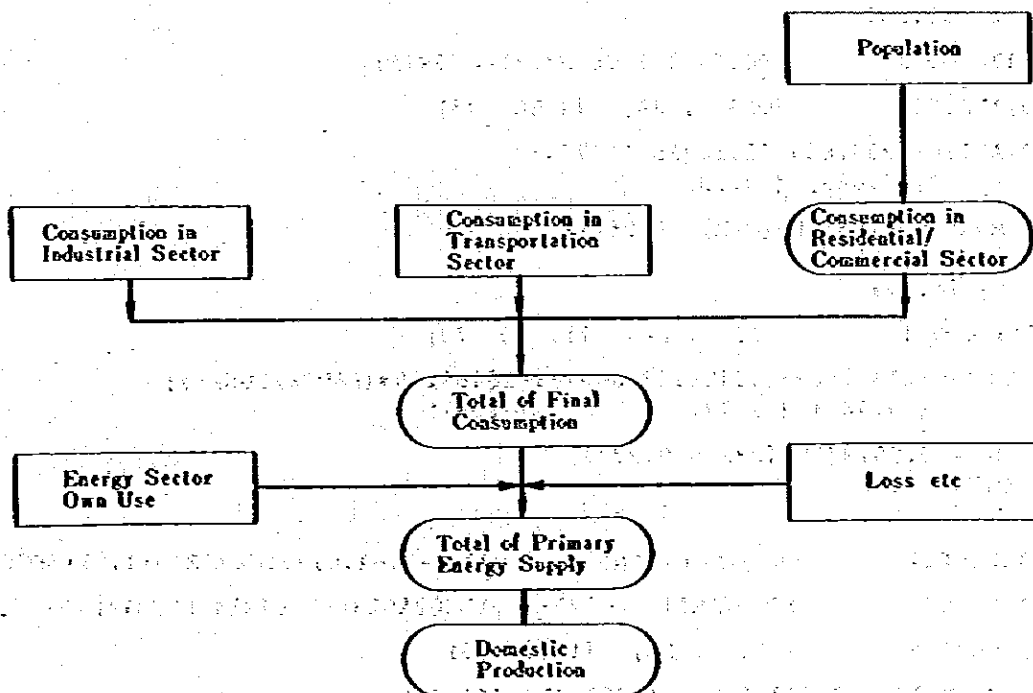


Fig. 18 Flow Chart of Non-Commercial Energy Part



Listed below are individual equations. In the list, the model is divided into four blocks; (A) final energy consumption sector, (B) energy sector own use and loss, etc., (C) energy transformation sector and (D) primary energy supply sector.

(20)

(A) Final Energy Consumption Sector (67 equations)

( 1) INDO017      EBC01R11=EBC01R12+EBC01R13+EBC01R14+EBC01R16;

( 2) INDO001      (OLS , FA, 71 TO 78)

EBC04R13=+1330.600+0.0009267636\*TR&-6.227924\*PPETR&;  
( 13.35) ( 8.16)      (-1.37)

R\*R= 0.9382(ADJ[R\*R]= 0.9834)

D.W.= 1.72

S= 74.933

( 3) INDO018      EBC04R11=EBC04R12+EBC04R13+EBC04R15;

( 4) INDO002      (OLS , FA, 71 TO 78)

EBC05R13=-493.7739+0.1252411\*GDP73&;  
(-8.342) ( 15.9)

R\*R= 0.9770(ADJ[R\*R]= 0.9731)

D.W.= 1.66

S= 27.259

( 5) INDO019      EBC05R15=((CG73&/CG73&(-1)-1.0)\*ELC05R15+1.0)\*EBC05R15(-1);

( 6) INDO020      EBC05R11=EBC05R13+EBC05R15;

( 7) INDO003      (OLS , FA, 72 TO 78)

EBC06R14=-1100.879+0.5737276\*CP73&-47.91174\*PKER&+0.8642881\*EBC06R14(-1);  
(-3.879) ( 4.36)      (-2.10)      ( 11.4)

R\*R= 0.9993(ADJ[R\*R]= 0.9986)

D.W.= 2.95

S= 56.191

( 8) INDO021      EBC06R11=EBC06R12+EBC06R14;

( 9) INDO013      (OLS , FA, 74 TO 78)

EBC07AR12=-1984.629+21.16815\*IIP73&;  
(-7.049) ( 9.99)

R\*R= 0.9706(ADJ[R\*R]= 0.9611)

D.W.= 3.25

S= 78.179

( 10) INDO014      (OLS , FA, 71, TO 78)

EBC07AR13=+2130.809+0.2488148\*GDP73&-16468.09\*(PAD0&/PGNP&);  
( 0.760) ( 1.17)      (-1.87)

R\*R= 0.9529(ADJ[R\*R]= 0.9341)

D.W.= 2.38

S= 220.57

( 11) INDO022      EBC07AR15=((CG73&/CG73&(-1)-1.0)\*ELC07AR15+1.0)\*EBC07AR15(-1);

( 12) INDO023      EBC07AR11=EBC07AR12+EBC07AR13+EBC07R14+EBC07AR15;

( 13) INDO015      (OLS , FA, 71 TO 78)

LOG(EBC07BR12)=-0.2831102+1.437212\*LOG(IIP73&);  
(-0.350) ( 8.38)

R\*R= 0.9213(ADJ[R\*R]= 0.9082)

D.W.= 0.993

S= 0.12412

(21)

- ( 14) INDO024  $EBC07BR15 = ((CG73\%/CG73\% (-1) - 1.0) * ELC07BR15 + 1.0) * EBC07BR15 (-1);$   
( 15) INDO025  $EBC07BR11 = EBC07BR12 + EBC07BR13 + EBC07BR14 + EBC07BR15;$   
( 16) INDO026  $EBC07R12 = EBC07AR12 + EBC07BR12;$   
( 17) INDO027  $EBC07R13 = EBC07AR13 + EBC07BR13;$   
( 18) INDO028  $EBC07R14 = EBC07AR14 + EBC07BR14;$   
( 19) INDO029  $EBC07R15 = EBC07AR15 + EBC07BR15;$   
( 20) INDO030  $EBC07R11 = EBC07R12 + EBC07R13 + EBC07R14 + EBC07R15;$   
( 21) INDO011 (OLS , FA, 71 TO 78)

$EBC08R12 = -711.1977 + 0.2137417 * GDP73\%;$   
(-5.371) ( 12.1)

R\*R= 0.9611 (ADJ[R\*R]= 0.9546)  
D.W.= 1.85  
S= 60.974

- ( 22) INDOB01  $EBC08R11 = EBC08R12 + EBC08R13 + EBC08R14 + EBC08R15;$   
( 23) INDO031  $EBC09R11 = EBC09R12 + EBC09R16;$   
( 24) INDO004  $EBC10AR12 = ((GDP73\%/GDP73\% (-1) - 1.0) * ELC10AR12 + 1.0) * EBC10AR12 (-1);$   
( 25) INDO016 (OLS , FA, 71 TO 78)

$EBC10AR14 = -70.73171 + 0.01728592 * CP73\%;$   
(-11.17) ( 15.0)

R\*R= 0.9740 (ADJ[R\*R]= 0.9697)  
D.W.= 1.40  
S= 3.0138

- ( 26) INDO093  $EBC10AR11 = EBC10AR12 + EBC10AR14;$   
( 27) INDO032  $EBC10BR16 = ((GDP73\%/GDP73\% (-1) - 1.0) * ELC10BR16 + 1.0) * EBC10BR16 (-1);$   
( 28) INDO094  $EBC10BR11 = EBC10BR16;$   
( 29) INDO095  $EBC10R11 = EBC10AR11 + EBC10BR11;$   
( 30) INDO096  $EBC10R12 = EBC10AR12;$   
( 31) INDO097  $EBC10R14 = EBC10AR14;$   
( 32) INDO098  $EBC10R16 = EBC10BR16;$   
( 33) INDO042  $EBC03R12 = EBC04R12 + EBC06R12 + EBC07R12 + EBC08R12 + EBC09R12 + EBC10R12;$   
( 34) INDO000  $EBC03R13 = EBC04R13 + EBC05R13 + EBC07R13 + EBC08R13;$   
( 35) INDO044  $EBC03R14 = EBC06R14 + EBC07R14 + EBC08R14 + EBC10R14;$   
( 36) INDO045  $EBC03R15 = EBC04R15 + EBC05R15 + EBC07R15 + EBC08R15;$   
( 37) INDO046  $EBC03R16 = EBC09R16 + EBC10R16;$   
( 38) INDO047  $EBC03R11 = EBC03R12 + EBC03R13 + EBC03R14 + EBC03R15 + EBC03R16;$   
( 39) INDO034  $EBC11AR12 = ((GDP73\%/GDP73\% (-1) - 1.0) * ELC11AR12 + 1.0) * EBC11AR12 (-1);$   
( 40) INDO005  $EBC11AR14 = ((CP73\%/CP73\% (-1) - 1.0) * ELC11AR14 + 1.0) * EBC11AR14 (-1);$   
( 41) INDO035  $EBC11AR16 = ((GDP73\%/GDP73\% (-1) - 1.0) * ELC11AR16 + 1.0) * EBC11AR16 (-1);$   
( 42) INDO111  $EBC11AR11 = EBC11AR12 + EBC11AR14 + EBC11AR16;$   
( 43) INDO036  $EBC11CR14 = ((CP73\%/CP73\% (-1) - 1.0) * ELC11CR14 + 1.0) * EBC11AR14 (-1);$

(22)  
 ( 44) INDO006 EBC11CR11=EBC11CR14+EBC11CR12;  
 ( 45) INDO048 EBC11R12=EBC11AR12+EBC11CR12;  
 ( 46) INDO049 EBC11R14=EBC11AR14+EBC11CR14;  
 ( 47) INDO050 EBC11R16=EBC11AR16;  
 ( 48) INDO051 EBC11R11=EBC11R12+EBC11R14+EBC11R16;  
 ( 49) INDO008 (OLS , FA, 72 TO 78)  
 EBC14R12=-210.2656+2.946872\*IP73&+0.6680052\*EBC14R12(-1);  
 (-1.176) ( 1.17) ( 1.16)

R\*R= 0.9053(ADJ[R\*R]= 0.8580)  
 D.W.= 2.31  
 S= 57.357

( 50) INDO009 (OLS , FA, 71 TO 78)  
 LOG(EBC14R14)=-6.162451+1.332767\*LOG(CP73&);  
 (-4.373) ( 8.11)

R\*R= 0.9165(ADJ[R\*R]= 0.9026)  
 D.W.= 0.943  
 S= 0.082135

( 51) INDO038 EBC14R15= ((CG73&/CG73& (-1)-1.0)\*ELC14R15+1.0)\*EBC14R15(-1);  
 ( 52) INDO039 EBC14R11=EBC14R12+EBC14R13+EBC14R14+EBC14R15;  
 ( 53) INDOC30 EBC15R11=EBC01R11+EBC03R11+EBC11R11+EBC14R11;  
 ( 54) INDOC31 EBC15R12=EBC01R12+EBC03R12+EBC11R12+EBC14R12;  
 ( 55) INDO159 EBC15R13=EBC01R13+EBC03R13+EBC14R13;  
 ( 56) INDOC32 EBC15R14=EBC01R14+EBC03R14+EBC11R14+EBC14R14;  
 ( 57) INDO161 EBC15R15=EBC03R15+EBC14R15;  
 ( 58) INDOC33 EBC15R16=EBC01R16+EBC03R16+EBC11R16;  
 ( 59) INDO040 EBC16R12= ((CG73&/CG73& (-1)-1.0)\*ELC16R12+1.0)\*EBC16R12(-1);  
 ( 60) INDO010 (OLS , FA, 72 TO 78)

LOG(EBC16R14)=-2.095017+1.124068\*LOG(POP&)+0.6718194\*LOG(EBC16R14(-1));  
 (-0.668) ( 0.795) ( 1.75)

R\*R= 0.9907(ADJ[R\*R]= 0.9861)  
 D.W.= 2.39  
 S= 0.025570

( 61) INDO041 EBC16R11=EBC16R12+EBC16R13+EBC16R14;  
 ( 62) INDO175 EBC17R11=EBC15R11+EBC16R11;  
 ( 63) INDO176 EBC17R12=EBC15R12+EBC16R12;  
 ( 64) INDO177 EBC17R13=EBC15R13+EBC16R13;  
 ( 65) INDO178 EBC17R14=EBC15R14+EBC16R14;  
 ( 66) INDO179 EBC17R15=EBC15R15;  
 ( 67) INDO180 EBC17R16=EBC15R16;

(B) Energy Sector Own Use and Loss, etc. (14 equations)

( 1) INDO108 EBC10R10A=EBC10AR10A+EBC10BR10A;

(23)

- ( 2) INDO109  $EBC10R10B = EBC10AR10B + EBC10BR10B;$
- ( 3) INDO125  $EBC03R10A = EBC04R10A + EBC05R10A + EBC06R10A + EBC07R10A + EBC08R10A$   
 $+ EBC09R10A + EBC10R10A;$
- ( 4) INDOC34  $EBC03R10B = EBC04R10B + EBC05R10B + EBC06R10B + EBC07R10B + EBC08R10B$   
 $+ EBC09R10B + EBC10R10B;$
- ( 5) INDO128  $EBC11AR10A = 2C11AR10A + EBC11AR01;$
- ( 6) INDOC11  $EBC11R10A = EBC11AR10A + EBC11BR10A + EBC11CR10A;$
- ( 7) INDOC12  $EBC11R10B = EBC11AR10B + EBC11BR10B + EBC11CR10B;$
- ( 8) INDOC35  $EBC12R10B = -EBC12R06 - EBC12R07;$
- ( 9) INDOC36  $EBC13R10B = -EBC13R06 - EBC13R07;$
- ( 10) INDO137  $EBC14R10B = -(EBC14R07 + 2C14R10);$
- ( 11) INDOC19  $EBC15R10A = EBC01R10A + EBC02R10A + EBC03R10A + EBC11R10A;$
- ( 12) INDOC20  $EBC15R10B = EBC01R10B + EBC02R10B + EBC03R10B + EBC11R10B + EBC14R10B;$
- ( 13) INDOB12  $EBC17R10A = EBC15R10A + EBC16R10A;$
- ( 14) INDOB13  $EBC17R10B = EBC15R10B + EBC16R10B;$

## (C) Energy Transformation Sector (32 equations)

- ( 1) INDO138  $EBC14R07 = EBC14R11 / (1.0 - 2C14R10);$
- ( 2) INDO127  $EBC11AR08 = -1.0 * (EBC11CR08 - EBC01R08 - EBC03R08);$
- ( 3) INDOC01  $EBC11CR08 = EBC11CR11 - EBC11CR10A - EBC11CR10B;$
- ( 4) INDOC08  $EBC11R08 = EBC11AR08 + EBC11CR08;$
- ( 5) INDOC09  $EBC11R09B = EBC11AR09B + EBC11BR09B;$
- ( 6) INDOC10  $EBC04R09A = -(EBC02R09A + YC04R09);$
- ( 7) INDOB14  $EBC05R09A = -(EBC02R09A + YC05R09);$
- ( 8) INDOB15  $EBC06R09A = -(EBC02R09A + YC06R09);$
- ( 9) INDO072  $EBC07AR09A = -(EBC02R09A + YC07AR09);$
- ( 10) INDO073  $EBC07BR09A = -(EBC02R09A + YC07BR09);$
- ( 11) INDO074  $EBC07R09A = EBC07AR09A + EBC07BR09A;$
- ( 12) INDO075  $EBC07R07 = EBC07AR07 + EBC07BR07;$
- ( 13) INDO086  $EBC07R08 = EBC07AR08 + EBC07BR08;$
- ( 14) INDO087  $EBC08R09A = -(EBC02R09A + YC08R09);$
- ( 15) INDOB02  $EBC09R09A = -(EBC02R09A + YC09R09);$
- ( 16) INDOB03  $EBC10AR09A = -(EBC02R09A + YC10AR09);$
- ( 17) INDOB04  $EBC10BR09A = -(EBC02R09A + YC10BR09);$
- ( 18) INDOB05  $EBC10R09A = EBC10AR09A + EBC10BR09A;$
- ( 19) INDO106  $EBC10R09B = EBC10AR09B + EBC10BR09B;$
- ( 20) INDO107  $EBC03R07 = EBC07R07 + EBC08R07;$



(24)

- ( 21) INDO120 EBC03R08=EBC07R08;
- ( 22) INDO121 EBC03R09A=EBC04R09A +EBC05R09A+EBC06R09A+EBC07R09A+  
EBC08R09A+EBC09R09A+EBC10R09A;
- ( 23) INDO122 EBC03R09B=EBC09R09B+EBC10R09B;
- ( 24) INDO123 EBC01R07=- (EBC14R07/ZC14R06+EBC03R07+EBC12R07+EBC13R07);
- ( 25) INDO140 EBC15R07=EBC01R07+EBC03R07+EBC12R07+EBC13R07+EBC14R07+  
EBC12R10B+EBC13R10B;
- ( 26) INDOC37 EBC15R08=EBC01R08+EBC03R08+EBC11R08;
- ( 27) INDOC16 EBC15R09A=EBC02R09A+EBC03R09A+EBC11R09A;
- ( 28) INDOC17 EBC15R09B=EBC03R09B+EBC11R09B;
- ( 29) INDOC18 EBC17R07=EBC15R07;
- ( 30) INDO171 EBC17R08=EBC15R08;
- ( 31) INDO172 EBC17R09A=EBC15R09A;
- ( 32) INDOB10 EBC17R09B=EBC15R09B;

(D) Primary Energy Supply Sector (61 equations)

- ( 1) INDOC02 EBC01R06=EBC01R11-EBC01R10A-EBC01R10B-EBC01R07;
- ( 2) INDO142 EBC01R01=EBC01R06-EBC01R05-EBC01R03-EBC01R02;
- ( 3) INDOC03 EBC02R06=-EBC02R10A-EBC02R10B-EBC02R09A;
- ( 4) INDO144 EBC02R03=EBC02R06-EBC02R05-EBC02R02-EBC02R01;
- ( 5) INDOC04 EBC04R06=EBC04R11-EBC04R10A-EBC04R10B-EBC04R09A;
- ( 6) INDO067 EBC04R02=EBC04R06-EBC04R05-EBC04R04-EBC04R03;
- ( 7) INDO021 EBC05R06=EBC05R11-EBC05R10A-EBC05R10B-EBC05R09A;
- ( 8) INDO069 EBC05R02=EBC05R06-EBC05R05-EBC05R04;
- ( 9) INDOC22 EBC06R06=EBC06R11-EBC06R10A-EBC06R10B-EBC06R09A;
- ( 10) INDO077 EBC06R02=EBC06R06-EBC06R05;
- ( 11) INDO023 EBC07AR06=EBC07AR11-EBC07AR10A-EBC07AR10B-EBC07AR09A  
-EBC07AR08-EBC07AR07;
- ( 12) INDO079 EBC07AR02=EBC07AR06-EBC07AR05-EBC07AR04;
- ( 13) INDOC24 EBC07BR06=EBC07BR11-EBC07BR10A-EBC07BR10B-EBC07BR09A  
-EBC07BR08-EBC07BR07;
- ( 14) INDO081 EBC07BR02=EBC07BR06-EBC07BR05-EBC07BR04;
- ( 15) INDO082 EBC07R02=EBC07AR02+EBC07BR02;
- ( 16) INDO083 EBC07R04=EBC07AR04+EBC07BR04;
- ( 17) INDO084 EBC07R05=EBC07AR05+EBC07BR05;
- ( 18) INDO085 EBC07R06=EBC07AR06+EBC07BR06;
- ( 19) INDO025 EBC08R06=EBC08R11-EBC08R10A-EBC08R10B-EBC08R09A-EBC08R08  
-EBC08R07;

(25)

( 20) INDO090 EBC08R03=EBC08R06-EBC08R05-EBC08R04-EBC08R02;  
( 21) INDO026 EBC09R06=EBC09R11-EBC09R10A-EBC09R10B-EBC09R09A-EBC09R09B;  
( 22) INDO092 EBC09R03=EBC09R06-EBC09R05-EBC09R02;  
( 23) INDO27 EBC10AR06=EBC10AR11-EBC10AR10A-EBC10AR10B-EBC10AR09A  
-EBC10AR09B;  
( 24) INDO100 EBC10AR03=EBC10AR06-EBC10AR05-EBC10AR02;  
( 25) INDO28 EBC10BR06=EBC10BR11-EBC10BR10A-EBC10BR10B-EBC10BR09A  
( 26) INDO102 EBC10BR03=EBC10BR06-EBC10BR05-EBC10BR02;  
( 27) INDOB07 EBC10R02=EBC10AR02+EBC10BR02;  
( 28) INDO103 EBC10R03=EBC10AR03+EBC10BR03;  
( 29) INDO104 EBC10R05=EBC10AR05+EBC10BR05;  
( 30) INDO105 EBC10R06=EBC10AR06+EBC10BR06;  
( 31) INDO115 EBC03R02=EBC04R02+EBC05R02+EBC06R02+EBC07R02+EBC08R02  
+EBC10R02;  
( 32) INDO116 EBC03R03=EBC04R03+EBC08R03+EBC09R03+EBC10R03;  
( 33) INDO117 EBC03R04=EBC04R04+EBC05R04+EBC07R04+EBC08R04;  
( 34) INDO118 EBC03R05=EBC04R05+EBC05R05+EBC06R05+EBC07R05+EBC08R05  
+EBC09R05+EBC10R05;  
( 35) INDO119 EBC03R06=EBC04R06+EBC05R06+EBC06R06+EBC07R06+EBC08R06  
+EBC09R06+EBC10R06;  
( 36) INDO29 EBC11AR06=EBC11AR11-EBC11AR10A-EBC11AR10B-EBC11AR10B-  
EBC11AR09B-EBC11AR08;  
( 37) INDO132 EBC11AR01=EBC11AR06;  
( 38) INDO112 EBC11BR06=-EBC11BR10A-EBC11BR10B-EBC11BR09B;  
( 39) INDO113 EBC11BR03=EBC11BR06;  
( 40) INDO05 EBC11R01=EBC11AR01;  
( 41) INDO06 EBC11R03=EBC11BR03;  
( 42) INDO07 EBC11R06=EBC11AR06+EBC11BR06;  
( 43) INDO133 EBC12R06=-EBC12R07;  
( 44) INDO134 EBC12R01=EBC12R06;  
( 45) INDO135 EBC13R06=-EBC13R07-EBC13R06=-EBC13R07-EBC13R08;  
( 46) INDO136 EBC13R01=EBC13R06;  
( 47) INDO139 EBC14R06=EBC14R07/2C14R06;  
( 48) INDO13 EBC15R01=EBC01R01+EBC02R01+EBC11R01+EBC12R01+EBC13R01;  
( 49) INDO146 EBC15R02=EBC01R02+EBC02R02+EBC03R02;  
( 50) INDO14 EBC15R03=EBC01R03+EBC02R03+EBC03R03+EBC11R03;  
( 51) INDO148 EBC15R04=EBC03R04;  
( 52) INDO149 EBC15R05=EBC01R05+EBC02R05+EBC03R05;

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( 53) INDOC15 EBC15R06=EBC01R06+EBC02R06+EBC03R06+EBC11R06+EBC12R06  
+EBC13R06;  
( 54) INDO163 EBC16R06=EBC16R11-EBC16R10A-EBC16R10B;  
( 55) INDO164 EBC16R01=EBC16R06;  
( 56) INDO165 EBC17R01=EBC15R01+EBC16R01;  
( 57) INDO166 EBC17R02=EBC15R02;  
( 58) INDO167 EBC17R03=EBC15R03;  
( 59) INDO168 EBC17R04=EBC15R04;  
( 60) INDO169 EBC17R05=EBC15R05;  
( 61) INDO170 EBC17R06=EBC15R06+EBC16R06;

**GENERAL MANUAL OF ENERGY SUPPLY-DEMAND  
FORECAST II**

**FORECAST RESULTS AND PROBLEMS**

CENTRAL BUREAU OF ENERGY EFFICIENCY  
PROGRAMS

REPORT OF THE DIRECTOR



## GENERAL MANUAL OF ENERGY SUPPLY-DEMAND FORECAST II

## - FORECAST RESULTS AND PROBLEMS -

## 1. Economic Forecast and Problems

## 1-1. Major Prior Conditions of Economic Forecast

Major factors which are considered to affect future economic activities of Indonesia greatly include government consumption expenditure, crude oil output and crude oil export price.

As to government consumption expenditure, it was assumed that it would show a stable growth supported by increasing government revenue which could be expected as a result of future increases in crude oil price. In the concrete terms, it was forecast that growth over the 5-year period of 1983/1978 would average about +27% per year and that over the 12-year period of 1990/1978 about +22% per year.

Crude oil output was forecast based on a production plan of the Indonesian Government and, as the result, output in 1983 was forecast to total 660 million barrels and that in 1990, 690 million barrels. In other words, it was assumed that rate of increase would not become so high.

As to crude oil export price, it is considered that tight supply-demand conditions of oil will continue as a basic trend. In addition, it seems difficult to introduce substitute sources of energy for oil during the period subject to this forecast. Accordingly, it was forecast that an increase in crude oil export price over the 5-year period of 1983/1978 would average +25% per year and that over the 12-year period of 1990/1978 +14% per year. In other words, it was assumed that tempo of price increases would be very high.

As to other prior conditions, it was assumed that growth of world import over a period up to 1990 would average +5.0% per year, world export price index over the same period

Table I Macro-Economic Prior Conditions (1971-1990/1978)

Item	Year	1971	1973	1977	1978	1983	1990	1978/1971	1978/1973	1983/1978	1990/1978
	PETROPA	{1000 Barrel}	325614	488550	615160	596648	659000	690000	219.0	4.1	2.0
PCROILA	[\$/Barrel]	2.19	3.27	12.39	12.70	38.03	61.59	28.5	31.2	24.5	14.1
PAGRGPE73&	{CA1973=100}	66.4	100.0	1174.4	187.5	239.3	305.9	16.0	13.4	5.0	4.2
CG&	{RP1000}	341.0	716.0	2019.4	2331.5	7717.0	26286.2	31.6	26.6	27.0	22.4
WIM75&	[\$1000]	664.2	824.8	964.2	1009.3	1288.1	1812.5	6.2	4.1	5.0	5.0
PWE75&	{CA1975=100}	49.0	67.0	111.0	123.0	216.8	407.2	14.1	12.9	12.0	10.5

( 2 )

slightly higher than +10% per year and farm product export price over the same period about +5.0% per year.

#### 1-2. Results and Problems of Economic Forecast

According to an economic forecast made based on the prior conditions aforementioned, it is estimated that growth rate of gross domestic products (GDP) over the 5-year period of 1983/1978 will average +6.6% per year and that over the 12-year period of 1990/1978 +6.5% per year.

Of various items of final demand, government consumption expenditure and gross capital formation are considered to play an important role in facilitating growth, while items such as private consumption expenditure and export are considered to function as neutral factors. As to commodity prices, both consumer price and wholesale price are considered to calm down compared with their trends in the past. Meantime, it is considered that future economic growth greatly depends on the aforementioned point, in other words, whether or not commodity prices can be calmed down.

As problems related to an economic forecast, it can be pointed out, first of all, if it is possible to maintain such a high growth of government consumption expenditure as mentioned. To maintain such a high growth, a growth of oil revenue at high tempo is required. Also it is considered necessary to raise tempo of increases in crude oil output. Among other problems, there is a problem related to future trend of commodity prices, that is, if increases in commodity prices will remain within the range as mentioned.

To make them remain within the range it is considered necessary to make utmost efforts for hammering out appropriate policies.

Table 2 Major Macro-Economic Variables (1971-1990/1978)

Item	Year										
	1971	1973	1977	1978	1983	1990	1978/1971	1978/1973	1983/1978	1990/1978	
GDP&	[RP 1060] 3672.0	6753.4	18705.9	21788.4	57573.1	158458.7	[%] 29.0	26.4	21.5	18.0	
GDP73&	[RP 1060] 5544.7	6753.4	8761.0	9392.2	12933.0	19897.4	[%] 7.8	6.8	6.6	6.5	
CP73&	[RP 1060] 3998.4	4790.7	6372.3	6754.6	9126.0	13728.5	[%] 7.8	7.1	6.2	6.1	
CG73&	[RP 1060] 518.3	716.0	1013.6	1065.0	1969.8	3610.8	[%] 10.8	8.3	13.1	10.7	
ITP73&	[RP 1060] 866.9	1208.0	2009.5	2272.2	3632.1	6354.1	[%] 14.8	13.5	9.8	8.9	
EXP73&	[RP 1060] 890.8	1354.3	1743.8	1618.6	2326.2	3479.8	[%] 8.9	3.6	7.5	6.6	
IMP73&	[RP 1060] 729.7	1315.6	2378.2	2318.2	4120.8	7275.8	[%] 18.0	12.0	12.2	10.0	
N173&	[RP 1060] 4832.8	5740.7	7343.3	7839.2	10473.3	15790.5	[%] 7.2	6.4	6.0	6.0	
CP173&	[CA1973-100] 71.7	100.0	222.8	240.9	445.0	834.6	[%] 18.9	19.2	13.1	10.9	
WP173&	[CA1973-100] 63.7	100.0	205.7	222.5	409.8	168.8	[%] 19.6	17.3	13.0	10.9	

## 2. Energy Demand Forecast and Problems

### 2-1. Forecast on Total Demand for Primary Energies/Elasticity to GDP and Problems

Total of primary energy demand (= total of primary energy supply), which was  $88,621 \times 10^3$  TCE in 1978, is forecast to increase to  $120,385 \times 10^3$  TCE in 1983 and to  $190,986 \times 10^3$  TCE in 1990. Also energy demand per unit of GDP is forecast to change to 9.31 ( $10^3$  TCE/lbn. rupiahs) in 1983 and to 9.60 ( $10^3$  TCE/lbn. rupiahs) in 1990 from 9.44 ( $10^3$  TCE/lbn. rupiahs) in 1978. As to elasticity to GDP, which was 0.91 over the 5-year period of 1978/1973, the figure is estimated to change to 0.96 over the coming 5-year period of 1983/1978 and to 1.02 over the 12-year period of 1990/1978.

As a problem related to the forecast mentioned above, the upward trend of elasticity can be pointed out. Judging from worldwide moves toward energy conservation, it is considered more appropriate to assume that elasticity of energy demand to GDP will level off or diminish so long as such a factor as major energy-consuming industries, including steel, petrochemical and cement, plan to increase their production substantially does not surface. However, because elasticity can vary depending on energy demand structure of individual countries, it is considered necessary to conduct even more detailed qualitative analysis in the future.

Table 3 Total Demand for Primary Energies/Elasticity to GDP  
(1973-1990/1978)

Item	Year	1973	1978	1983	1990	1978 1973	1983 1978	1990 1978
	EBC17R06		[ $10^3$ TCE] 65631	88621	120385	190986	[%] 6.19	6.32
GDP		[RP 10bil] 6753.4	9392.2	12933.0	19897.4	[%] 6.82	6.61	6.46
EBC17R06/GDP		[ $10^3$ TCE/RP 10bil] 9.72	9.44	9.31	9.60	[%] 0.58	0.28	0.14
Elasticity to GDP		-	-	-	-	0.91	0.96	1.02

### 2-2. Forecast on Energy Demand by Sectors and Problems

As regards shares held by individual sectors in final energy consumption, the transportation and residential and commercial sectors showed sharp increases, while the industry sector recorded a substantial decrease.

As a problem related to the forecast, the trend of decreasing share of the industry sector can be pointed out. This is because the trend in the past is reflected as it was. It is considered necessary in the future to take production trend of energy-consuming industries, such as steel, petrochemical and cement, into a consideration.



Table 4 Energy Demand by Sectors (1973-1990)

Item	1973		1977		1978		1983		1990	
	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]
EBC17R01	148,973		183,130		190,896		237,446		292,762	
EBC17R02	2,788		9,894		9,883		25,445		45,702	
EBC17R03	Δ 86,367		Δ 110,561		Δ 111,629		Δ 141,671		Δ 146,248	
EBC17R04&R05	Δ 12		1,728		Δ 1,137		Δ 835		Δ 1,230	
EBC17R06	65,631		84,769		88,621		120,385		190,986	
EBC17R10A	Δ 9,187		Δ 19,637		Δ 22,046		Δ 25,432		Δ 33,501	
EBC17R11	55,359	100.0	60,274	100.0	63,997	100.0	94,953	100.0	157,485	100.0
EBC17R12	25,456	46.0	13,641	22.6	11,882	18.6	11,854	12.5	18,512	11.8
EBC17R13	3,885	7.0	6,788	11.3	7,508	11.7	12,212	12.9	21,097	13.4
EBC17R14	24,950	45.1	37,915	62.9	42,041	65.7	63,167	66.5	107,119	68.0
EBC17R15	663	1.2	993	1.6	1,020	1.6	1,730	1.8	2,897	1.8
EBC17R16	405	0.7	937	1.6	1,547	2.4	5,989	6.3	7,860	5.0

### 2.3. Forecast on Demands for Individual Energy Resources in Industry

#### Sector and Problems

To estimate demands for individual energy resources in the industry sector, elements listed below were introduced.

- (A) Demand for solid fuel = exogenous variable
- (B) Demand for gasoline = exogenous variable
- (C) Demand for kerosene = exogenous variable
- (D) Demand for diesel oil = f (Production Index of Mining Industry)
- (E) Demand for heavy fuel oil = (GDP)
- (F) Demands for naphtha & NGL = exogenous variable
- (G) Demand for LPG = f (GDP, elasticity to GDP)
- (H) Demand for natural gas = f (GDP, elasticity to GDP)
- (I) Demand for town gas = exogenous variable
- (J) Demand for electric power = f (Production Index of Mining Industry)
- (K) Demand for non-commercial energy = exogenous variable

Table 5 Demands for Individual Energy Resources in Industry Sector  
(1973-1990/1978)

Item	1973		1978		1983		1990		1978	1978	1990
	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	1973	1978	1978
EBC01R12	43	0.2	50	0.4	453	3.8	453	2.4	3.1	55.4	20.2
EBC03R12	1841	7.2	3863	32.4	6445	54.4	11858	64.1	16.0	10.8	9.8
EBC07R12	1085	4.3	2471	20.7	4340	36.6	8219	44.4	17.9	11.9	10.5
EBC08R12	750	2.9	1360	11.4	2053	17.3	3542	19.1	12.6	8.6	8.3
EBC10R12	6	0.0	32	0.3	51	0.4	97	0.5	39.8	9.8	9.7
EBC11R12	167	0.7	1139	9.6	1827	15.4	3453	18.7	46.8	9.9	9.7
EBC11AR12	167	0.7	1139	9.6	1827	15.4	3453	18.7	46.8	9.9	9.7
EBC11DR12	0	0.0	0	0.0	0	0.0	0	0.0	-	-	-
EBC14R12	227	0.9	574	4.8	1066	9.0	2006	10.8	20.4	13.2	11.0
EBC16R12	23185	91.1	6288	52.8	2063	17.4	743	4.0	Δ23.0	Δ20.0	Δ16.3
Total	25463	100.0	11914	100.0	11854	100.0	18512	100.0	Δ14.1	Δ 0.1	3.7

#### 2.4. Forecast on Demands for Individual Energy Resources in Transportation Sector and Problems

To estimate demands for individual energy resources in the transport category, elements listed below were introduced.

- (A) Demand for solid fuel = exogenous variable
- (B) Demand for gasoline = f (number of registered motor vehicles price of gasoline)
- (C) Demand for jet fuel oil = f (GDP)
- (D) Demand for diesel oil = f (GDP, price of diesel oil)
- (E) Demand for heavy fuel oil = exogenous variable
- (F) Demand for electric power = exogenous variable
- (G) Demand for non-commercial energies = exogenous variable

According to forecast results, energy demand in the transportation sector, which was  $7,508 \times 10^3$  TCE in 1978, will increase to  $12,212 \times 10^3$  TCE in 1983 and to  $21,097 \times 10^3$  TCE in 1990.

As to demand by type of energy, all of the three types of energies including gasoline, jet fuel oil and diesel oil are showing sharp growth reflecting stable increases in number of registered motor vehicles and GDP.

As a problem related to the forecast, it can be pointed out that the figure representing the number of registered motor vehicles includes numbers of both gasoline-powered cars and diesel-powered cars. Also, numbers of four-wheeled cars and two-wheeled cars are included in the figure. Accordingly, breakdown of the number of registered motor vehicles should be promoted as a future subject. Besides, it is necessary to review significance of total

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transportation system including automobile, railroad, aviation and marine transportation.

Table 6 Demands for Individual Energy Resources in Transportation Sector (1973-1990/1978)

Item	1973		1978		1983		1990		1978	1983	1990
	$10^3$ TCE	(%)	$10^3$ TCE	(%)	$10^3$ TCE	(%)	$10^3$ TCE	(%)	1973	1978	1978
EBC03R13	3842	98.9	7443	99.1	12154	99.5	21057	99.8	14.1	10.3	9.1
EBC04R13	2046	52.7	3644	48.5	6374	52.2	12558	59.5	12.2	11.8	10.9
EBC05R13	348	9.0	677	9.0	1126	9.2	1998	9.5	14.2	10.7	9.4
EBC07R13	1017	26.2	2687	35.8	4204	34.4	6051	28.7	21.4	9.4	7.0
EBC08R13	431	11.1	436	5.8	450	3.7	450	2.1	0.2	0.6	0.3
EBC01R13 etc.	42	1.1	64	0.9	58	0.5	40	0.2	8.8	1.9	3.8
Total	3885	100.0	7508	100.0	12212	100.0	21097	100.0	14.1	10.2	9.0

#### 2-5. Forecast on Demands for Individual Energy Resources in Residential and Commercial Sector and Problems

To estimate demands for individual energy resources in residential and commercial sector, elements listed below were introduced.

- (A) Demand for solid fuel = exogenous variable
- (B) Demand for kerosene = f (private consumption expenditure, price of kerosene)
- (C) Demand for diesel oil = exogenous variable
- (D) Demand for heavy fuel oil = exogenous variable
- (E) Demand for LPG = f (private consumption expenditure)
- (F) Demand for natural gas = f (private consumption expenditure, elasticity to private consumption expenditure)
- (G) Demand for city gas = f (private consumption expenditure, elasticity to private consumption expenditure)
- (H) Demand for electric power = f (private consumption expenditure)
- (I) Demand for non-commercial energies = f (population)

According to forecast results, energy demand in the residential and commercial sector, which was  $42,041 \times 10^3$  TCE in 1978, will increase to  $63,167 \times 10^3$  TCE in 1983 and to  $107,119 \times 10^3$  TCE in 1990.

As to demand by type of energy, it is shown in the forecast that share of kerosene will increase slightly while that of non-commercial energies will decrease slightly.

As a problem related to the forecast, it can be pointed out that non-commercial energies are estimated to hold a substantial share of 77% even in 1990. It is considered that shares to be held by kerosene, gas and electric power will increase as a result of improved living

standards which can be realized attendant upon future economic growth while share held by non-commercial energies will become substantially lower than that indicated in this forecast.

**Table 7 Demands for Individual Energy Resources in Residential and Commercial Sector (1973-1990/1978)**

Item	Year		1973		1978		1983		1990		1978	1983	1990
											1973	1978	1978
EBC03R14	[10 <sup>3</sup> TCE]	[%]	4774	19.1	8555	20.3	13834	21.9	23781	22.2	12.4	10.1	8.9
EBC06R14			4766	19.1	8507	20.2	13747	21.8	23615	22.0	12.3	10.1	8.9
EBC10AR14			8	0.0	48	0.1	87	0.1	167	0.2	43.1	12.6	10.9
EBC11R14			16	0.1	16	0.0	5	0.0	8	0.0	0.0	20.8	5.6
EBC14R14			165	0.7	302	0.7	400	0.6	689	0.6	12.9	5.8	7.1
EBC16R14			19995	80.1	33168	78.9	48928	77.5	82640	77.1	10.7	8.1	7.9
Total			24950	100.0	42041	100.0	63167	100.0	107119	100.0	11.0	8.5	8.1

#### 2.6. Forecast on Demands for Individual Energy Resources in Government Sector and Problems

To estimate demands for individual energy resources in the government sector, elements listed below were introduced.

- (A) Demand for gasoline = exogenous variable
- (B) Demand for jet fuel oil =  $f$  (government consumption expenditure, elasticity to government consumption expenditure)
- (C) Demand for diesel oil =  $f$  (government consumption expenditure, elasticity to government consumption expenditure)
- (D) Demand for heavy fuel oil = exogenous variable
- (E) Demand for electric power =  $f$  (government consumption expenditure, elasticity to government consumption expenditure)

According to forecast results, energy demand in the government sector, which was  $1,020 \times 10^3$  TCE in 1978, will increase to  $1,730 \times 10^3$  TCE in 1983 and to  $2,897 \times 10^3$  TCE in 1990.

As to demand by type of energy, it is forecast that jet fuel oil and diesel oil will show sharp increases.

As a problem related to the forecast, lack of objectivity can be pointed out. In other words, it was not possible to estimate significant equations for making the forecast because figures representing past achievements were too small in value and showed sharp fluctuation and, as a result, there was no alternative but to use elasticity or process them as exogenous variables.

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As a future subject, it is required to review energy consumption plans of public institutions including government, government agencies and military.

Table 8 Demands for Individual Energy Resources in Government Sector (1973-1990/1978)

Item	1973		1978		1983		1990		1978	1983	1990
	[10 <sup>3</sup> TCE]	(%)	[10 <sup>3</sup> TCE]	(%)	[10 <sup>3</sup> TCE]	(%)	[10 <sup>3</sup> TCE]	(%)	1973	1978	1978
EBC03R15	627	94.6	973	95.4	1643	95.0	2738	94.5	9.2	11.0	9.0
EBC04R15	300	45.2	285	27.9	300	17.3	300	10.4	20.1	1.0	0.4
EBC05R15	0	0.0	54	5.3	100	5.8	183	6.3	2.2	13.1	10.7
EBC07R15	256	38.6	579	56.8	1171	67.7	2146	74.1	17.7	15.1	11.5
EBC08R15	71	10.7	54	5.3	72	4.2	109	3.8	25.3	5.9	3.5
EBC14R15	36	5.4	47	4.6	87	5.0	159	5.5	5.5	13.1	10.7
Total	663	100.0	1020	100.0	1730	100.0	2897	100.0	9.0	11.1	9.1

## 2-7. Electric Power Supply-Demand Forecast and Problems

It is forecast that demand for electric power, which was  $1,117 \times 10^3$  TCE in 1978, will steadily increase to  $1,827 \times 10^3$  TCE in 1983 and to  $3,358 \times 10^3$  TCE in 1990.

As to demand by type of sector, it is shown in the forecast that the industry sector will record a high growth while growth in the residential and commercial sector will stagnate to some extent.

As a problem related to the forecast, it can be pointed out that growth in the civil users category remains slightly too low. It is considered that substitution for non-commercial energies by electric power will be taken place at relatively higher place than that shown in the forecast as a result of improved living standards expected in the future.

As to constitution of fuel for electric power generation, it is shown in the forecast that share of coal for thermal electric power generation will record a sharp increase, which will result in a sharp decrease in share of oil for thermal electric power generation.

As a problem related to the forecast, it can be pointed out if the switch over from coal to oil in the field of thermal electric power generation will be carried out so rapidly as indicated in the forecast. Also, while public utility and auto-generation are mixed up in the forecast, it should be noted that auto-generation is very popular in Indonesia and holds a very important position in respect to electric power supply. Accordingly, it is required in the future to separate auto-generation from public utility and made an independent forecast.

Table 9 Electric Power Demand by Sectors (1973-1990/1978)

Item	Year		1973		1978		1983		1990		1978	1983	1990
			[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	1973	1978	1978
EBC14R12			227	42.2	574	51.4	1066	58.3	2006	59.7	20.4	13.2	11.0
EBC14R13			0	0.0	0	0.0	0	0.0	0	0.0	-	-	-
EBC14R14			165	30.7	302	27.0	400	21.9	689	20.5	12.9	5.8	7.1
EBC14R15			36	6.7	47	4.2	87	4.8	159	4.7	5.5	13.1	10.7
EBC14R10A			109	20.3	194	17.4	274	15.0	504	15.0	12.2	7.1	8.3
Total			538	100.0	1117	100.0	1827	100.0	3358	100.0	15.7	10.3	9.6

Table 10 Constitution of Fuel for Electric Power Generation (1973-1990/1978)

Item	Year		1973		1978		1983		1990		1978	1983	1990
			[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	[10 <sup>3</sup> TCE]	[%]	1973	1978	1978
EBC01R07			45	3.6	76	2.2	1321	21.7	3373	30.1	11.1	77.0	37.2
EBC03R07			1023	81.1	3090	87.9	4215	69.2	6689	59.8	24.7	6.4	6.6
EBC07R07			908	72.0	2452	69.8	3265	53.6	4884	43.6	22.0	5.9	5.9
EBC08R07			115	9.1	638	18.2	950	15.6	1805	16.1	40.9	8.3	9.1
EBC12R07			0	0.0	0	0.0	0	0.0	0	0.0	-	-	-
EBC13R07			193	15.3	348	9.9	555	9.1	1130	10.1	12.5	9.8	10.3
Total			1261	100.0	3514	100.0	6091	100.0	11192	100.0	22.7	11.6	10.1

### 2-8. Changes in and Forecast on Oil Demand

It is forecast that demands for petroleum products, which was  $24,353 \times 10^3$  TCE in 1978, will increase to  $42,555 \times 10^3$  TCE in 1983 and to  $70,712 \times 10^3$  TCE in 1990. As to mean growth rate per year, it is forecast +12% will be achieved over the 5-year period of 1983/1978 and +9% over the 12-year period of 1990/1978.

Regarding demand by type of petroleum product, it is noted that light oil products, such as gasoline, jet fuel oil and kerosene, are forecast to show remarkable growth.

On the other hand, it should be noted that supplies (production) of petroleum products are estimated by processing crude oil input as an exogenous variable and assuming rate of production gain as almost same as current rate.

This means that imports will be required as to petroleum products for which domestic demands are growing rapidly while it will become possible to export petroleum products for which domestic demands remain at low levels. Petroleum products which are considered

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to require imports include gasoline, jet fuel oil, kerosene and diesel oil, while those which can be exported in the future are heavy fuel oil and petroleum products other than mentioned before. To make the forecast discussed in this section, domestic crude oil, crude oil import and crude oil input into refineries were processed as exogenous variables and the remaining was estimated as crude oil export. Meantime, crude oil export is forecast to remain at almost the same level as in the past due to expected low growth of domestic crude oil production.

As a problem related to the forecast, rate of production gain which is assumed to remain at almost the same level as current rate can be pointed out. Because it is forecast that domestic demands for gasoline, jet fuel oil and kerosene will show sharp increases, it is reasonable to assume that a priority will be given to introduce facilities capable of producing light oil in larger quantities when capacity expansion of refining facilities is planned in the future. In other words, it is considered that rate of production gain will change depending on products as a result of such a policy as mentioned above. That is, it is considered necessary to prepare a model in which fluctuation of rate of production gain can be expressed depending on changes in demands for individual petroleum products.

Table 11 Supply-Demand of Oil (1973-1990/1978)

Item \ Year	1973	1978	1983	1990	1978 1973	1983 1978	1990 1978
EBC02R01	[10 <sup>3</sup> TCE] 97903	[10 <sup>3</sup> TCE] 119578	[10 <sup>3</sup> TCE] 131800	[10 <sup>3</sup> TCE] 138000	[%] 4.1	[%] 2.0	[%] 1.2
EBC02R02	220	6224	12448	12448	95.1	14.9	5.9
EBC03R02	2565	3659	13413	33372	7.4	29.7	20.2
EBC04R02	0	3	1363	6241	-	240.0	89.0
EBC05R02	161	652	1569	2903	32.3	19.2	13.3
EBC06R02	400	898	5088	12828	17.6	41.5	24.8
EBC07R02	331	2024	4897	11200	43.6	19.3	15.3
EBC08R02	1647	0	0	0	-	-	-
EBC09R02	0	0	415	119	-	-	-
EBC10AR02	0	4	4	4	-	0.0	0.0
EBC10BR02	26	77	77	47	24.3	0.0	0.0
EBC03R11	12354	24353	42555	70712	14.5	11.8	9.3
Fuels Total-R11	12106	23837	41817	69524	14.5	11.9	9.3
EBC04R11	2345	3928	6674	12858	10.9	11.2	10.4
EBC05R11	348	731	1226	2181	16.0	10.9	9.5
EBC06R11	4759	8475	13747	23615	12.2	10.2	8.9
EBC07R11	3287	8214	13025	21345	20.1	9.7	8.3
EBC08R11	1367	2489	3525	5905	12.7	7.2	7.5
EBC09R11	0	0	3620	3620	-	-	-
EBC10AR11	14	80	138	264	41.7	11.5	10.5
EBC10BR11	234	436	600	924	13.3	6.6	6.5
EBC02R03	74056	92568	99361	94596	4.6	1.4	0.2
EBC03R03	12310	11513	16839	19074	41.3	7.9	4.3
EBC08R03	70	411	2026	1094	42.5	37.6	8.5
EBC09R03	0	2227	0	0	-	-	-
EBC10AR03	1	657	696	590	266.0	1.2	40.9
EBC10BR03	12240	8218	14117	17390	47.7	11.4	6.4
EBC03R04	248	609	835	1230	19.7	6.5	6.0

### 3. Lists of Calculation Results

Listed below are actual values of endogenous and exogenous variables over the 8-year period from 1971 to 1978 and forecast values of them over the 12-year period from 1979 to 1990.



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3-1. Actual Values (1971-1978)

(1) Endogenous Variables

FA	1973I		CP1		CP173I		CP73I		ERC01801		ERC01808
	1971	1972	1973	1974	1975	1976	1977	1978	1971	1972	1973
71	518.		2833.		72.		3979.		184.		136.
72	561.	8.2	3192.	29.4	76.	6.5	4276.	6.9	187.	-7.2	174.
73	716.	27.7	4731.	49.8	109.	35.9	4781.	12.0	141.	-15.4	175.
74	611.	-19.5	7257.	51.5	141.	40.7	5154.	13.8	149.	5.9	142.
75	836.	39.3	8745.	29.5	169.	19.0	5677.	4.1	192.	29.7	174.
76	677.	7.3	10184.	19.7	261.	19.3	6032.	6.2	173.	9.9	162.
77	1014.	13.6	12312.	17.7	223.	11.9	6372.	5.6	222.	28.3	291.
78	1065.	5.1	14575.	12.1	241.	8.1	6755.	6.0	258.	16.2	184.
FA	ERC01807		ERC01811		ERC02003		ERC02008		ERC03802		ERC03803
71	-44.		91.		-45913.		17684.		1327.		-2519.
72	-43.	4.5	81.	-13.8	-58147.	22.8	26585.	15.4	1744.	47.8	-2771.
73	-45.	-36.6	83.	2.5	-74056.	25.6	28271.	17.9	2565.	36.6	-32310.
74	-57.	26.7	87.	-1.7	-75933.	2.5	23289.	-4.4	2849.	10.7	-2922.
75	-77.	35.1	97.	20.7	-72759.	-8.2	22568.	-3.1	2795.	-1.6	-8113.
76	-71.	-7.8	86.	-13.1	-90974.	23.8	21577.	-1.6	4867.	139.6	-8148.
77	-77.	8.5	111.	27.1	-92251.	8.0	31889.	57.9	3928.	-11.1	-32617.
78	-74.	-1.3	105.	-5.4	-92568.	-4.8	32682.	-3.9	3657.	-6.8	-31513.
FA	ERC03804		ERC03805		ERC03806		ERC03807		ERC03808		ERC03809A
71	-337.		0.		-4210.		-792.		-13.		17389.
72	-226.	-31.7	0.	---	-7823.	24.0	-784.	-8.8	-17.	39.8	19757.
73	-218.	12.7	0.	---	-7745.	24.5	-1023.	19.2	-21.	23.5	23269.
74	-459.	65.1	0.	---	-7133.	-26.8	-825.	-19.4	-23.	9.5	23885.
75	-477.	-9.2	0.	---	-4817.	-15.2	-1254.	57.0	-21.	-8.7	-21352.
76	-437.	4.8	-522.	---	-2193.	-61.9	-2060.	48.3	-21.	0.0	21094.
77	-578.	32.3	355.	-158.4	-7834.	291.2	-2471.	29.6	-23.	9.5	38411.
78	-497.	5.4	46.	-78.8	-7788.	-6.4	-3519.	25.1	-25.	0.7	31671.
FA	ERC03810		ERC03811A		ERC03810B		ERC03811		ERC03812		ERC03813
71	0.		0.		0.		8756.		4214.		3234.
72	0.	---	0.	---	0.	---	9778.	11.7	1514.	21.7	3522.
73	0.	---	0.	---	0.	---	11313.	15.7	1835.	21.2	3842.
74	0.	---	0.	---	0.	---	13267.	17.3	4722.	-3.4	5071.
75	3.	-25.0	0.	---	0.	---	14981.	12.9	1982.	10.7	5832.
76	18.	533.3	0.	---	0.	---	16464.	11.2	2678.	37.5	5111.
77	476.	3543.2	0.	---	0.	---	18826.	12.9	3252.	26.8	6712.
78	2612.	275.3	0.	---	0.	---	21218.	12.9	3838.	17.5	7413.
FA	ERC03814		ERC03815		ERC03816		ERC03802		ERC03806		ERC04074
71	3938.		217.		151.		1.		-59.		2426.
72	4256.	6.9	258.	3.6	231.	59.0	0.	-100.0	0.	-100.0	2183.
73	4774.	12.2	427.	140.9	235.	9.7	0.	---	0.	---	2432.
74	5531.	15.9	582.	-7.2	281.	23.8	0.	---	-522.	---	2448.
75	8279.	13.4	473.	15.6	244.	-16.2	0.	---	-727.	39.3	2811.
76	8585.	9.8	511.	49.3	194.	-19.7	341.	---	411.	-156.5	2732.
77	7418.	19.0	151.	1.1	211.	22.0	79.	-28.1	38.	-22.7	3501.
78	8555.	12.0	973.	2.0	434.	89.9	3.	-94.2	-117.	-416.7	3743.
FA	ERC04011		ERC04013		ERC05002		ERC05006		ERC05074		ERC05011
71	2092.		2482.		0.		0.		214.		192.
72	2122.	2.9	2122.	2.9	15.	---	15.	---	248.	11.8	252.
73	2345.	19.5	2444.	-3.6	161.	923.3	161.	923.3	262.	-10.5	349.
74	2450.	19.0	2385.	15.6	212.	31.7	212.	31.7	265.	41.1	451.
75	2915.	18.0	2691.	18.0	167.	120.3	167.	120.3	169.	-41.9	502.
76	3145.	7.9	2840.	9.2	559.	12.8	513.	16.9	72.	-28.0	567.
77	3584.	11.5	3974.	12.5	839.	16.5	801.	18.7	12.	-83.3	613.
78	3928.	12.0	3641.	11.0	652.	3.5	618.	11.1	25.	168.3	731.

FA	EBC65R13		EBC65R15		EBC65R02		EBC65R06		EBC65R09A		EBC65R11	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	192.		0.		1062.		1062.		3659.		3995.	
72	252.	31.3	0.	---	519.	-52.0	519.	-52.0	3147.	1.2	4249.	0.8
73	349.	38.1	0.	---	489.	-21.6	489.	-21.6	4093.	27.2	4759.	32.0
74	419.	24.4	32.	---	1154.	189.0	1154.	189.0	4335.	0.3	5499.	15.5
75	515.	22.9	27.	-15.6	1278.	19.6	1278.	19.6	4359.	0.3	4222.	13.1
76	539.	4.7	28.	3.7	3695.	135.1	3694.	137.4	4979.	-5.0	4926.	9.7
77	569.	5.6	49.	57.1	1920.	-46.1	1920.	-46.0	6235.	52.1	7577.	11.0
78	677.	17.6	54.	22.7	890.	-12.0	890.	-12.0	6130.	-1.6	8475.	11.9
FA	EBC67R10		EBC67R02		EBC67R06		EBC67R09A		EBC67R11		EBC67R12	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	356.		16.		10.		1556.		892.		370.	
72	4247.	0.0	0.	-109.0	0.	-109.0	1720.	10.5	1365.	18.0	431.	14.0
73	4759.	12.0	331.	---	331.	---	2324.	35.1	1747.	33.9	574.	33.6
74	5199.	15.5	459.	38.4	458.	38.4	2876.	24.6	2393.	31.0	343.	-37.0
75	6222.	12.1	945.	183.3	945.	183.3	3999.	3.9	2918.	26.7	445.	22.6
76	6824.	9.7	2503.	141.7	2481.	155.1	2720.	-9.3	3454.	18.4	899.	17.8
77	7577.	11.0	1801.	-24.1	1655.	-21.1	4243.	56.3	3854.	11.6	1952.	10.3
78	8475.	11.9	2024.	4.5	2430.	29.4	4033.	14.5	4335.	12.4	1271.	22.7
FA	EBC67R13		EBC67R15		EBC67R02		EBC67R06		EBC67R09A		EBC67R11	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	358.		197.		0.		0.		656.		526.	
72	744.	128.6	170.	-13.7	0.	---	0.	---	1041.	54.3	503.	-4.4
73	842.	33.0	229.	34.1	0.	---	0.	---	871.	-16.3	612.	21.7
74	1243.	85.0	197.	-13.6	0.	---	0.	---	971.	11.5	692.	61.4
75	2223.	27.5	245.	24.4	0.	---	0.	---	1028.	5.9	853.	25.1
76	2643.	-0.1	523.	113.5	113.	---	201.	---	1956.	2.7	1990.	17.2
77	2244.	92.1	511.	-2.3	244.	24.2	310.	56.2	1176.	11.4	1278.	27.8
78	2687.	17.1	579.	13.3	0.	-109.0	39.	-87.9	1530.	39.0	441.	9.4
FA	EBC67R12		EBC67R15		EBC67R02		EBC67R06		EBC67R09A		EBC67R11	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	395.		6.		10.		-75.		0.		19.	
72	419.	4.1	23.	203.3	0.	-109.0	0.	-109.0	0.	---	0.	-109.0
73	549.	21.5	20.	21.7	331.	---	0.	---	0.	---	331.	---
74	554.	0.0	12.	-57.1	458.	38.4	-30.	---	0.	---	458.	38.4
75	695.	25.5	16.	33.3	945.	183.3	-15.	18.4	0.	---	945.	183.3
76	719.	15.0	20.	25.0	2702.	185.9	-92.	184.1	-87.	---	2612.	174.4
77	1059.	33.7	40.	149.0	2147.	-29.5	-43.	-7.0	23.	-925.0	2169.	-17.0
78	1189.	10.5	51.	35.0	2024.	-5.7	-48.	-18.1	415.	1204.3	2437.	12.4
FA	EBC67R07		EBC67R10		EBC67R09A		EBC67R11		EBC67R12		EBC67R13	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	-438.		-33.		2222.		1418.		773.		432.	
72	-414.	7.2	-17.	30.0	2741.	24.3	1893.	28.1	849.	9.0	744.	77.3
73	-910.	32.7	-21.	23.5	3195.	15.7	2154.	34.6	1065.	27.8	1617.	33.0
74	-710.	-19.6	-23.	9.5	3867.	21.0	2965.	26.6	917.	-15.5	1859.	82.8
75	-118.	24.4	-21.	-0.7	4937.	6.4	3771.	26.3	1139.	24.2	2371.	27.5
76	-1027.	79.2	-21.	0.0	3704.	-4.3	4455.	18.9	1697.	10.3	2223.	-6.2
77	-2022.	22.0	-21.	0.0	5419.	43.0	5135.	15.3	2119.	25.5	2451.	19.8
78	-2452.	22.5	-25.	19.0	4121.	18.0	5737.	11.7	2471.	16.6	2497.	9.1
FA	EBC67R14		EBC67R15		EBC68R03		EBC68R06		EBC68R09A		EBC68R11	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
71	0.		203.		-1185.		-931.		3175.		1032.	
72	0.	---	193.	-4.9	-711.	-33.2	497.	-165.2	2027.	-36.7	1110.	7.4
73	0.	---	256.	32.6	-70.	-81.2	1577.	139.0	764.	-42.3	1252.	12.8
74	0.	---	249.	-10.1	0.	-100.0	943.	-40.2	1819.	130.1	1359.	0.5
75	0.	---	249.	24.9	0.	---	34.	-86.2	1695.	-11.0	8237.	-0.8
76	0.	---	543.	140.4	-70.	---	-214.	-814.4	2419.	45.0	1417.	14.4
77	0.	---	551.	1.5	-933.	1401.0	-207.	267.0	3749.	41.9	1872.	10.0
78	0.	---	579.	5.1	-411.	-55.9	-493.	-23.4	4362.	29.9	1051.	10.7

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FA	EBC08R12		EBC09R03		EBC09R06		EBC09R07A		EBC09R11		EBC10R03	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	443.		9.		9.		9.		9.		9.	
72	665.	59.8	0.	---	0.	---	363.	---	0.	---	-4.	-59.0
73	750.	12.8	0.	---	0.	---	293.	-48.4	0.	---	-1.	-75.0
74	656.	14.1	0.	---	0.	---	216.	319.7	0.	---	-5.	490.0
75	823.	-3.9	-727.	---	-727.	---	829.	-3.1	0.	---	-6.	-29.0
76	1009.	22.6	-65.	-69.3	-312.	-57.1	287.	-65.0	0.	---	0.	-196.0
77	1169.	13.0	-1159.	1252.9	-1019.	225.0	1919.	250.9	0.	---	-147.	---
78	1360.	19.3	-2227.	93.7	-2187.	115.7	1195.	7.5	0.	---	-657.	47.0

FA	EBC10R05		EBC10R07A		EBC10R11		EBC10R12		EBC10R14		EBC10R03	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	-0.		12.		3.		1.		2.		-6285.	
72	-4.	-59.0	10.	-19.7	6.	199.9	2.	169.9	4.	169.9	-8776.	43.1
73	-1.	-75.0	15.	59.0	14.	133.3	6.	133.3	8.	133.3	-12243.	34.1
74	-5.	490.0	32.	128.4	32.	128.4	13.	128.4	18.	128.4	-9461.	-22.0
75	-8.	29.0	59.	56.3	48.	59.0	17.	59.0	29.	59.0	-7392.	-21.9
76	-1.	-81.3	41.	-18.0	57.	22.9	24.	22.1	35.	22.9	-7581.	8.2
77	-445.	1111.9	55.	27.1	44.	8.5	24.	8.5	38.	8.5	-9567.	17.1
78	-452.	49.2	59.	9.4	63.	25.0	32.	25.0	49.	25.0	-9219.	-13.6

FA	EBC10R06		EBC10R07A		EBC10R13		EBC10R16		EBC10R02		EBC10R03	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	-4285.		8282.		159.		159.		0.		-8211.	
72	-8154.	42.4	9218.	45.7	231.	59.0	231.	59.0	42.	---	-9509.	43.0
73	-12214.	38.4	12364.	34.1	234.	1.3	234.	1.3	26.	-39.1	-12241.	36.0
74	-9375.	-23.2	19233.	-17.7	290.	23.9	290.	23.9	70.	169.2	-9451.	-22.9
75	-7313.	-22.0	7569.	-25.8	244.	-15.9	244.	-15.9	67.	-1.4	-7389.	-20.8
76	-4977.	10.4	8226.	8.0	194.	-19.7	198.	-19.7	53.	-29.2	-7181.	0.1
77	-9115.	13.8	9734.	18.3	249.	22.4	249.	22.4	52.	-1.9	-9556.	24.7
78	-4147.	-11.4	9320.	-4.3	434.	81.7	434.	81.7	81.	55.0	-8975.	-19.9

FA	EBC10R05		EBC10R06		EBC10R07A		EBC10R09B		EBC10R10A		EBC10R11B	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	0.		-8274.		6274.		0.		0.		0.	
72	0.	---	-8759.	42.3	9228.	45.6	0.	---	0.	---	0.	---
73	0.	---	-12215.	35.4	12377.	34.1	0.	---	0.	---	0.	---
74	0.	---	-9359.	-23.2	19245.	-17.1	0.	---	0.	---	0.	---
75	0.	---	-7319.	-22.0	7637.	-25.6	0.	---	0.	---	0.	---
76	-165.	---	-8178.	10.4	8247.	9.2	17.	---	0.	---	0.	---
77	272.	-286.3	-9489.	19.6	9797.	18.4	176.	2495.3	0.	---	0.	---
78	-7.	-192.6	-8719.	-0.9	9378.	-9.2	478.	41.8	-1.	---	0.	---

FA	EBC10R13		EBC10R12		EBC10R14		EBC10R16		EBC10R01		EBC10R06	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	457.		1.		2.		154.		4592.		4592.	
72	237.	51.0	2.	109.0	0.	109.0	231.	59.0	5714.	24.4	5714.	24.4
73	248.	1.4	6.	133.3	0.	133.3	234.	1.3	7655.	23.5	7655.	23.5
74	322.	29.0	13.	128.4	19.	128.4	298.	23.9	7274.	3.1	7274.	3.1
75	292.	-9.3	19.	59.0	29.	59.0	241.	-15.9	6017.	10.2	6017.	10.2
76	255.	-12.7	24.	22.9	35.	22.9	194.	-19.7	11534.	43.9	11534.	43.9
77	381.	19.3	24.	8.5	38.	8.5	249.	22.4	19613.	70.0	19613.	70.0
78	511.	49.7	32.	25.0	49.	25.0	436.	81.7	39327.	54.6	39327.	54.6

FA	EBC10R08		EBC10R10B		EBC10R11		EBC10R12		EBC10R14		EBC10R16	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	-31.		-1241.		159.		79.		0.		79.	
72	-50.	41.3	-1248.	-11.2	311.	110.1	167.	111.1	0.	---	167.	111.0
73	-16.	-8.0	-1553.	28.7	314.	0.0	167.	0.0	0.	---	167.	0.0
74	-41.	0.0	-2107.	35.5	359.	7.2	199.	13.8	1.	---	197.	0.0
75	-17.	2.2	-2318.	13.0	541.	52.0	291.	54.7	1.	0.0	243.	43.5
76	-42.	-10.6	-2842.	19.3	593.	9.0	321.	9.2	2.	199.0	270.	8.9
77	-83.	2.3	-4215.	50.1	1012.	130.1	731.	128.7	2.	0.0	627.	150.7
78	-45.	4.7	-8569.	92.9	2225.	57.6	1139.	53.2	2.	0.0	1681.	40.1

FA	EBC11803		EBC11806		EBC11808		EBC11811		EBC11814		EBC11801	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	0.		0.		18.		15.		15.		4592.	
72	0.	---	0.	---	21.	16.7	16.	6.7	16.	6.7	5714.	24.4
73	0.	---	0.	---	22.	4.8	16.	0.9	16.	0.0	7855.	-23.5
74	0.	---	0.	---	22.	0.0	15.	-6.3	15.	-6.3	7276.	3.1
75	0.	---	0.	---	20.	-9.1	13.	-13.3	13.	-13.3	8917.	19.2
76	0.	---	0.	---	20.	0.0	12.	-7.7	12.	-7.7	11534.	43.9
77	-1233.	---	-1233.	---	20.	0.0	12.	0.0	12.	0.0	17683.	29.9
78	-7519.	589.8	-7519.	589.8	20.	0.0	14.	16.7	14.	16.7	39327.	51.6

FA	EBC11803		EBC11806		EBC11808		EBC11811		EBC11814		EBC11801	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	0.		4592.		18.		-164.		-1361.			
72	0.	---	5714.	24.4	21.	16.7	-253.	54.3	-1288.	-11.2		
73	0.	---	7855.	23.5	22.	4.8	-273.	7.9	-1555.	28.7		
74	0.	---	7276.	3.1	22.	0.0	-267.	-1.5	-2187.	35.5		
75	0.	---	8917.	19.2	20.	-9.1	-114.	-27.7	-4892.	111.7		
76	0.	---	11534.	43.9	20.	0.0	-1337.	589.2	-2842.	-41.8		
77	-1233.	---	18389.	59.4	20.	0.0	-3476.	156.2	-4275.	50.1		
78	-7519.	589.8	22818.	21.1	20.	0.0	-4335.	26.5	8594.	-277.9		

FA	EBC11810		EBC11811		EBC11812		EBC11814		EBC11816		EBC12801	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	-2012.		174.		79.		15.		79.		9.	
72	-3766.	34.1	359.	101.1	167.	111.4	16.	6.7	167.	111.4	0.	---
73	-5811.	29.1	350.	0.0	167.	0.0	16.	0.0	167.	0.0	0.	---
74	-4518.	-7.8	374.	6.9	159.	13.8	16.	0.0	167.	0.0	6.	---
75	-4888.	7.5	557.	49.9	291.	54.7	14.	-12.5	248.	45.5	0.	---
76	-8756.	30.1	885.	0.4	321.	9.2	14.	0.0	279.	8.9	0.	---
77	-8978.	31.8	1426.	135.1	733.	120.3	14.	0.0	677.	159.7	0.	---
78	-7221.	-13.2	2239.	57.2	1189.	55.1	16.	14.3	1691.	48.1	0.	---

FA	EBC12808		EBC12810		EBC13809		EBC13805		EBC13810		EBC15808	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	0.		0.		619.		619.		-615.		1472.	
72	0.	---	0.	---	547.	-9.1	517.	-8.1	-428.	-8.3	1422.	-9.7
73	0.	---	0.	---	619.	21.7	619.	21.7	-477.	21.8	1759.	23.7
74	0.	---	0.	---	892.	16.2	892.	16.2	-578.	16.3	1491.	-8.3
75	0.	---	0.	---	871.	9.4	871.	8.6	-827.	8.5	2291.	39.7
76	0.	---	0.	---	860.	-8.2	804.	-8.2	-574.	-8.1	2932.	33.2
77	0.	---	0.	---	817.	2.1	817.	2.1	-588.	2.1	3364.	14.7
78	0.	---	0.	---	1241.	51.9	1241.	51.9	-893.	51.9	4197.	31.9

FA	EBC14807		EBC14810		EBC14811		EBC14812		EBC14814		EBC14815	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	411.		-49.		325.		143.		144.		41.	
72	439.	9.2	-49.	33.3	353.	0.6	159.	11.2	151.	7.1	43.	4.9
73	538.	19.8	-86.	24.5	429.	21.5	227.	42.8	185.	9.3	36.	-14.3
74	526.	-3.3	-100.	14.3	393.	-8.1	189.	-14.7	174.	6.7	28.	-22.2
75	411.	17.5	-107.	7.0	469.	19.3	233.	23.3	281.	15.9	32.	16.3
76	789.	27.7	-118.	10.3	626.	33.7	349.	58.1	224.	9.0	35.	9.4
77	897.	14.3	-144.	22.8	725.	15.1	435.	17.1	251.	12.1	39.	16.4
78	1167.	-23.2	-154.	4.9	923.	27.3	574.	32.9	362.	26.3	47.	20.5

FA	EBC15801		EBC15802		EBC15803		EBC15804		EBC15805		EBC15806	
	ZREL		ZREL		ZREL		ZREL		ZREL		ZREL	
71	70455.		1818.		-55552.		-337.		22.		17923.	
72	85719.	21.3	2138.	12.6	-49738.	23.7	-224.	-34.7	117.	431.8	19235.	13.9
73	105789.	23.4	2789.	30.4	-83367.	25.6	-248.	12.7	236.	161.7	22447.	18.7
74	148783.	2.8	3035.	0.9	-85185.	-0.5	-159.	85.1	-1558.	-749.2	24347.	6.6
75	181611.	-3.8	2923.	-3.7	-81492.	-5.0	-117.	-9.2	-359.	-77.9	25683.	5.1
76	123269.	17.8	8279.	103.2	-98231.	20.4	-437.	4.8	-814.	127.3	32923.	25.1
77	143922.	16.8	7894.	19.5	-118541.	12.6	-578.	32.3	2345.	-382.6	45581.	42.3
78	151408.	5.2	8883.	-8.1	-111429.	1.9	-609.	5.4	-528.	-122.9	41127.	7.8

FA	EBC15897		EBC15898		EBC15899A		EBC15899B		EBC15900A		EBC15900B	
	1961		1961		1961		1961		1961		1961	
71	-1016.		5.		-1330.		-164.		-1410.		-2972.	
72	-972.	-8.8	-8.	-249.0	-428.	-67.8	-253.	54.3	-1363.	-3.3	-3973.	33.7
73	-1226.	25.5	-2.	-75.0	-594.	132.2	-273.	7.9	-1572.	15.3	-5126.	29.0
74	-1165.	-6.5	-2.	6.0	-292.	-77.7	-265.	-2.9	-2447.	69.5	-4616.	-1.3
75	-1591.	36.6	-4.	209.0	-340.	78.2	-170.	-28.3	-2745.	11.2	-4374.	7.5
76	-2152.	35.3	-2.	-68.7	-131.	-83.6	-1318.	593.7	-3541.	20.2	-6847.	37.5
77	-2457.	14.2	-4.	169.0	-412.	379.1	-2739.	107.1	-4742.	34.5	-7642.	31.6
78	-3289.	33.9	-4.	0.0	-354.	-44.9	-1724.	-34.8	-8900.	84.8	-7975.	-12.9

FA	EBC15811		EBC15812		EBC15813		EBC15814		EBC15815		EBC15816	
	1961		1961		1961		1961		1961		1961	
71	9350.		1487.		3278.		4244.		228.		233.	
72	16563.	13.0	1892.	27.2	3559.	8.3	4423.	8.8	277.	3.8	377.	21.2
73	12175.	15.3	2271.	28.0	3685.	9.3	4755.	12.0	643.	121.7	405.	-1.5
74	14115.	15.9	2174.	-3.4	5124.	32.1	5722.	15.5	616.	-5.9	445.	14.8
75	14184.	14.1	2534.	15.5	5979.	14.7	6488.	13.4	765.	15.6	477.	7.3
76	17983.	11.7	3422.	35.0	5981.	1.7	7122.	9.8	979.	39.9	478.	-4.2
77	21868.	17.1	4477.	37.9	6752.	12.9	7783.	11.6	973.	1.4	937.	75.0
78	24595.	16.3	5571.	24.9	7472.	10.7	8273.	12.2	1929.	-2.7	1347.	65.1

FA	EBC16801		EBC16802		EBC16803		EBC16804		EBC16805		EBC16806	
	1961		1961		1961		1961		1961		1961	
71	37574.		37574.		37574.		21516.		16925.		169231.	
72	37991.	1.1	37991.	1.1	37991.	1.1	19848.	-7.6	18184.	13.0	129710.	14.3
73	43181.	13.7	43181.	13.7	43181.	13.7	23185.	16.7	19755.	19.4	148978.	20.4
74	44482.	3.0	44482.	3.0	44482.	3.0	21977.	-5.6	22680.	13.0	153283.	2.9
75	38914.	-14.5	38914.	-14.5	38914.	-14.5	14922.	-35.9	23747.	6.0	142457.	-6.9
76	38923.	2.4	38923.	2.4	38923.	2.4	11770.	-16.1	27118.	13.2	151716.	33.1
77	39248.	0.7	39248.	0.7	39248.	0.7	1142.	-22.2	16687.	19.7	183139.	33.2
78	39492.	0.7	39492.	0.7	39492.	0.7	4288.	-31.4	35188.	10.5	148376.	4.2

FA	EBC17892		EBC17893		EBC17894		EBC17895		EBC17896		EBC17897	
	1961		1961		1961		1961		1961		1961	
71	1670.		-55552.		-337.		22.		54599.		-1966.	
72	2138.	-12.6	-48738.	23.7	-270.	-34.7	117.	431.8	57226.	4.8	-972.	-8.8
73	2709.	39.4	-83467.	25.4	-248.	12.2	236.	191.7	65431.	14.7	-1229.	25.5
74	3635.	8.9	-63665.	-6.5	-159.	85.1	-1558.	-749.2	49855.	4.9	-1143.	-1.7
75	2923.	-3.7	-81882.	-5.0	-117.	-9.2	-359.	-77.0	63617.	-7.6	-1571.	34.8
76	8277.	103.2	-58231.	20.4	-437.	4.8	-816.	127.1	70946.	11.5	-2452.	35.3
77	9694.	19.5	-118561.	12.6	-578.	32.3	2386.	-392.8	84767.	19.5	-2457.	14.2
78	9893.	-0.1	-111427.	1.0	-689.	5.4	-528.	-122.9	88621.	4.5	-3269.	33.9

FA	EBC17898		EBC17899A		EBC17899B		EBC17900A		EBC17900B		EBC17901	
	1961		1961		1961		1961		1961		1961	
71	5.		-1331.		-164.		-1410.		-2972.		41724.	
72	-8.	-249.0	-428.	-67.8	-253.	54.3	-1363.	-3.3	-3973.	33.7	48551.	3.5
73	-2.	-75.0	-594.	132.2	-273.	7.9	-1572.	15.3	-5126.	29.0	55359.	14.0
74	-2.	6.0	-292.	-77.7	-265.	-2.9	-2447.	69.5	-4616.	-1.3	58493.	5.9
75	-4.	209.0	-340.	78.2	-170.	-28.3	-2745.	11.2	-4374.	7.5	54122.	-7.6
76	-2.	-68.7	-131.	-83.6	-1318.	593.7	-3541.	20.2	-6847.	37.5	56988.	5.1
77	-4.	169.0	-412.	379.1	-2739.	107.1	-4742.	34.5	-7642.	31.6	49274.	5.9
78	-1.	0.0	-354.	-44.9	-1724.	-34.8	-8900.	84.8	-7975.	-12.9	43927.	6.2

FA	EBC17812		EBC17813		EBC17814		EBC17815		EBC17816		EBC17817	
	1961		1961		1961		1961		1961		1961	
71	22977.		3319.		29389.		269.		233.		524.	
72	21749.	-5.4	3519.	7.5	27527.	12.1	277.	3.8	317.	71.2	754.	31.8
73	25456.	17.0	3835.	8.9	21358.	19.8	443.	121.2	455.	1.5	1354.	29.7
74	24971.	-5.4	5135.	32.2	28322.	13.5	819.	-8.0	465.	14.8	3165.	329.3
75	14555.	-31.2	5973.	15.3	34837.	7.5	785.	15.4	477.	7.3	2851.	-0.2
76	15192.	-9.2	4417.	4.4	34240.	12.5	979.	39.9	478.	-1.2	3439.	-20.3
77	13441.	-10.2	4789.	12.0	37915.	15.7	992.	1.4	932.	54.9	4368.	39.7
78	11882.	-12.9	7528.	10.6	42411.	12.9	1929.	2.7	1547.	65.1	4535.	1.6

FA	EXP738		63FB		63F738		68FB		68F738		117738	
		TRCL		TRCL		TRCL		TRCL		TRCL		TRCL
71	691.		3672.		5545.		3685.		5465.		69.	
72	1123.	26.1	4561.	24.3	6167.	9.4	4195.	22.2	5876.	7.9	84.	26.7
73	1354.	29.6	6753.	49.9	8753.	18.3	6518.	47.7	6568.	19.1	109.	17.3
74	1493.	3.4	10769.	59.4	7249.	7.4	10281.	56.8	6759.	6.9	111.	11.1
75	1247.	-9.7	12643.	18.1	7431.	5.0	12097.	18.5	7271.	5.1	117.	5.5
76	1425.	12.5	15467.	22.3	8156.	6.9	15435.	24.4	7759.	7.1	139.	11.1
77	1764.	22.4	18706.	29.9	8741.	7.4	18927.	19.9	8338.	7.9	148.	11.8
78	1419.	-7.2	21782.	14.5	9372.	7.2	20792.	16.2	8765.	6.8	155.	6.2
FA	18FB		18F738		11FB		11F738		81B		81738	
		TRCL		TRCL		TRCL		TRCL		TRCL		TRCL
71	411.		739.		549.		847.		3138.		4933.	
72	862.	49.4	925.	26.8	857.	47.8	1032.	17.0	3672.	23.1	5265.	7.9
73	1316.	52.4	1316.	42.2	1218.	41.0	1248.	17.1	5745.	49.3	5741.	16.2
74	2281.	74.3	1669.	24.1	1797.	49.8	1419.	19.2	8259.	57.8	4676.	5.3
75	2770.	29.1	1809.	7.8	2572.	43.1	1654.	14.6	10746.	18.4	4454.	5.1
76	3222.	16.0	1444.	8.1	3265.	24.6	1747.	6.0	13338.	24.1	6859.	7.1
77	3817.	18.5	2376.	22.2	3724.	16.3	2818.	11.9	15743.	19.7	2343.	7.4
78	4935.	9.7	2318.	-2.5	4122.	18.7	2272.	13.1	18651.	16.8	7837.	4.5
FA	FC8B		FC8B		FC8FB		FC8FB		FC8FB		FC8FB	
		TRCL		TRCL		TRCL		TRCL		TRCL		TRCL
71	41.		71.		49.		45.		86.		81.	
72	74.	12.2	89.	12.3	47.	12.7	75.	13.4	75.	13.2	93.	11.3
73	149.	35.5	169.	25.7	148.	49.8	143.	32.8	169.	35.8	169.	7.3
74	331.	31.2	133.	33.8	221.	121.3	147.	47.3	143.	47.8	137.	37.4
75	359.	14.4	154.	15.7	225.	1.7	148.	12.5	148.	12.8	154.	12.3
76	477.	18.2	173.	12.7	241.	6.9	149.	14.5	192.	16.1	165.	7.3
77	489.	12.3	193.	11.4	256.	4.4	214.	12.6	216.	12.9	161.	-3.0
78	219.	9.9	215.	11.1	289.	9.4	232.	8.7	235.	8.8	171.	2.4
FA	PI1FB		148		691738							
		TRCL		TRCL		TRCL						
71	47.		925249.		61.							
72	89.	24.1	1059893.	13.5	73.	14.0						
73	149.	29.1	1194331.	13.7	109.	37.7						
74	125.	21.8	1488419.	21.0	148.	47.8						
75	156.	24.9	1836351.	22.4	157.	4.5						
76	183.	17.6	2103383.	14.4	189.	14.4						
77	185.	1.2	2531467.	20.3	206.	14.1						
78	195.	1.9	3097469.	18.6	222.	8.1						

(18)

(2) Exogenous Variables

FA	CS1		EBC01R02		EBC01R03		EBC01R05		EBC01R08	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	301.60000		0.00000		0.00000		17.00000		0.00000	
72	111.00000	21.4	12.00000	---	0.00000	---	17.00000	-135.4	-12.00000	---
73	710.00000	72.9	3.00000	-75.0	0.00000	---	32.00000	88.2	-3.00000	-75.0
74	241.60000	17.5	1.00000	-66.7	0.00000	---	-7.00000	-121.9	-1.00000	-66.7
75	1233.70000	13.1	6.00000	509.0	0.00000	---	-3.00000	-57.1	-6.00000	509.0
76	1510.50000	28.9	1.00000	-93.3	-0.00000	---	-4.00000	33.1	-1.00000	-93.3
77	2019.00000	22.0	0.00000	-103.0	-7.00000	-12.5	-14.00000	250.0	0.00000	-103.0
78	2331.50000	15.5	0.00000	---	-39.00000	328.6	-42.00000	209.9	0.00000	---
FA	EBC01R09		EBC01R10		EBC01R12		EBC01R13		EBC01R14	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	-23.00000		0.00000		59.00000		15.00000		0.00000	
72	-124.00000	117.8	0.00000	---	51.00000	7.0	28.00000	-37.8	0.00000	---
73	-13.00000	-69.7	0.00000	---	43.00000	-15.7	17.00000	32.1	0.00000	---
74	-19.00000	-73.1	0.00000	---	43.00000	0.4	32.00000	-13.5	0.00000	---
75	-7.00000	-39.0	0.00000	---	45.00000	4.7	17.00000	15.9	0.00000	---
76	-3.00000	-57.1	0.00000	---	31.00000	-24.1	41.00000	-14.9	0.00000	---
77	-5.00000	66.7	0.00000	---	51.00000	58.0	10.00000	0.0	0.00000	---
78	-8.00000	60.0	0.00000	---	59.00000	-2.0	28.00000	-39.0	0.00000	---
FA	EBC02R16		EBC02R17		EBC02R19		EBC02R25		EBC02R31	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	0.00000		45219.00000		570.00000		69.00000		-10710.00000	
72	2.00000	---	29270.00000	21.5	182.00000	-71.6	100.00000	11.9	-20365.00000	7.0
73	3.00000	50.0	97703.00000	23.5	220.00000	35.0	204.00000	111.0	-24203.00000	10.7
74	7.00000	113.3	103548.00000	7.7	195.00000	-11.4	-1550.00000	-251.0	-24397.00000	-0.5
75	7.00000	0.0	95542.00000	-5.0	122.00000	-37.4	-355.00000	-77.0	-21713.00000	-7.8
76	12.00000	71.4	110204.00000	15.4	1637.00000	1210.9	-270.00000	-10.5	-22020.00000	1.4
77	20.00000	66.7	123270.00000	11.8	5744.00000	270.0	2415.00000	-711.8	-30307.00000	39.0
78	27.00000	35.0	119570.00000	-3.0	4221.00000	4.3	-552.00000	-127.0	-32025.00000	5.4
FA	EBC02R18		EBC02R19		EBC02R23		EBC02R24		EBC02R25	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	0.00000		0.00000		-59.00000		0.00000		0.00000	
72	0.00000	---	0.00000	---	0.00000	-110.9	0.00000	---	0.00000	---
73	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
74	-505.00000	---	0.00000	---	-522.00000	---	-7.00000	---	0.00000	---
75	-505.00000	0.0	0.00000	---	-727.00000	39.3	-3.00000	59.0	0.00000	---
76	-610.00000	27.5	0.00000	---	0.00000	-103.0	-2.00000	-33.3	50.00000	---
77	-124.00000	-31.2	0.00000	---	0.00000	---	-2.00000	0.0	-49.00000	-110.0
78	-252.00000	-10.8	0.00000	---	0.00000	---	-1.00000	-50.0	-122.00000	143.0
FA	EBC02R18		EBC02R19		EBC02R22		EBC02R25		EBC02R24	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	0.00000		0.00000		0.00000		0.00000		0.00000	
72	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
73	0.00000	---	0.00000	---	0.00000	---	300.00000	---	0.00000	---
74	0.00000	---	0.00000	---	0.00000	---	205.00000	-5.0	-111.00000	---
75	0.00000	---	0.00000	---	0.00000	---	114.00000	10.2	-135.00000	10.4
76	0.00000	---	0.00000	---	0.00000	---	304.00000	-3.2	-111.00000	1.4
77	0.00000	---	0.00000	---	0.00000	---	309.00000	9.4	-151.00000	9.2
78	0.00000	---	0.00000	---	0.00000	---	205.00000	-7.0	-203.00000	31.0
FA	EBC05R05		EBC05R10		EBC05R10		EBC05R05		EBC05R10	
		ISCL		ISCL		ISCL		ISCL		ISCL
71	0.00000		0.00000		0.00000		0.00000		0.00000	
72	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
73	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
74	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
75	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000	---
76	-1.00000	---	0.00000	---	0.00000	---	39.00000	---	0.00000	---
77	-29.00000	323.3	0.00000	---	0.00000	---	-115.00000	-750.6	0.00000	---
78	10.00000	-155.2	0.00000	---	0.00000	---	-65.00000	-50.4	0.00000	---

FA	EBC06R109		EBC06R12		EBC07AR04		EBC07AR05		EBC07AR07	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	0.00000		0.00000		-5.00000		0.00000		-597.00000	
72	0.00000	---	0.00000	---	0.00000	-100.0	0.00000	---	-439.00000	5.2
73	0.00000	---	0.00000	---	0.00000	---	0.00000	---	-842.00000	33.7
74	0.00000	---	0.00000	---	-1.00000	---	0.00000	---	-659.00000	-21.7
75	0.00000	---	0.00000	---	-7.00000	100.0	0.00000	---	-341.00000	27.4
76	0.00000	---	0.00000	---	-10.00000	100.0	-12.00000	---	-1663.00000	97.7
77	0.00000	---	0.00000	---	-15.00000	7.1	-46.00000	-50.0	-1343.00000	16.3
78	0.00000	---	0.00000	---	-12.00000	-20.0	377.00000	-919.4	-2493.00000	23.7
FA	EBC07AR08		EBC07AR10		EBC07AR10B		EBC07AR11		EBC07AR04	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	-1.00000		0.00000		0.00000		0.00000		-70.00000	
72	-1.00000	0.0	0.00000	---	0.00000	---	0.00000	---	0.00000	-100.0
73	-1.00000	0.0	0.00000	---	0.00000	---	0.00000	---	0.00000	---
74	-1.00000	0.0	0.00000	---	0.00000	---	0.00000	---	-37.00000	---
75	-1.00000	0.0	0.00000	---	0.00000	---	0.00000	---	-38.00000	2.7
76	-2.00000	100.0	0.00000	---	0.00000	---	0.00000	---	-70.00000	105.3
77	-5.00000	150.0	0.00000	---	0.00000	---	0.00000	---	-68.00000	-12.8
78	-7.00000	40.0	0.00000	---	0.00000	---	0.00000	---	-55.00000	-17.0
FA	EBC07AR05		EBC07AR07		EBC07AR08		EBC07AR10A		EBC07AR10B	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	0.00000		-37.00000		-12.00000		0.00000		0.00000	
72	0.00000	---	-51.00000	38.5	-17.00000	41.7	0.00000	---	0.00000	---
73	0.00000	---	-48.00000	22.2	-20.00000	17.6	0.00000	---	0.00000	---
74	0.00000	---	-71.00000	7.4	-22.00000	10.0	0.00000	---	0.00000	---
75	0.00000	---	-85.00000	-7.8	-19.00000	-17.6	0.00000	---	0.00000	---
76	2.00000	---	-55.00000	-1.5	-19.00000	0.0	0.00000	---	0.00000	---
77	29.00000	3350.0	-59.00000	-9.2	-16.00000	-15.8	0.00000	---	0.00000	---
78	39.00000	-41.9	-19.00000	-10.9	-18.00000	12.5	0.00000	---	0.00000	---
FA	EBC07AR13		EBC07AR14		EBC07AR16		EBC07AR10B		EBC07AR22	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	124.00000		0.00000		0.00000		0.00000		255.00000	
72	82.00000	-59.0	0.00000	---	0.00000	---	0.00000	---	1318.00000	100.2
73	75.00000	21.0	0.00000	---	0.00000	---	0.00000	---	1647.00000	17.0
74	118.00000	39.7	0.00000	---	0.00000	---	0.00000	---	143.00000	-42.7
75	143.00000	23.3	0.00000	---	0.00000	---	0.00000	---	34.00000	-16.2
76	189.00000	25.9	0.00000	---	0.00000	---	0.00000	---	0.00000	-100.0
77	170.00000	-5.6	0.00000	---	0.00000	---	0.00000	---	0.00000	---
78	147.00000	-1.0	0.00000	---	0.00000	---	0.00000	---	0.00000	---
FA	EBC08R04		EBC08R05		EBC08R07		EBC08R08		EBC08R10A	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	-242.00000		0.00000		-154.00000		0.00000		0.00000	
72	-228.00000	-16.0	0.00000	---	-102.00000	-33.0	0.00000	---	0.00000	---
73	-210.00000	12.7	0.00000	---	-115.00000	12.7	0.00000	---	0.00000	---
74	-185.00000	23.0	0.00000	---	-95.00000	-17.4	0.00000	---	0.00000	---
75	-234.00000	-23.3	0.00000	---	-316.00000	261.2	0.00000	---	0.00000	---
76	-232.00000	-13.7	-134.00000	---	-433.00000	25.1	0.00000	---	0.00000	---
77	-338.00000	87.3	147.00000	-207.7	-147.00000	0.3	0.00000	---	0.00000	---
78	-337.00000	-0.3	-191.00000	-229.9	-834.00000	31.0	0.00000	---	0.00000	---
FA	EBC08R10B		EBC08R13		EBC08R14		EBC08R15		EBC08R02	
	ZKCL		ZKCL		ZKCL		ZKCL		ZKCL	
71	0.00000		147.00000		0.00000		44.00000		0.00000	
72	0.00000	---	102.00000	-30.2	0.00000	---	83.00000	43.7	0.00000	---
73	0.00000	---	131.00000	12.0	0.00000	---	21.00000	12.7	0.00000	---
74	0.00000	---	112.00000	3.0	0.00000	---	55.00000	-22.5	0.00000	---
75	0.00000	---	145.00000	-23.0	0.00000	---	72.00000	33.9	0.00000	---
76	0.00000	---	339.00000	-1.7	0.00000	---	19.00000	-5.6	0.00000	---
77	0.00000	---	102.00000	42.2	0.00000	---	59.00000	-26.5	0.00000	---
78	0.00000	---	434.00000	-9.5	0.00000	---	50.00000	0.0	0.00000	---



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FA	ERC07805		ERC07807		ERC07810A		ERC07810B		ERC07812
		TRCL		TRCL		TRCL		TRCL	
71	0.00000		0.00000		0.00000		0.00000		0.00000
72	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
73	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
74	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
75	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
76	-227.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
77	136.00000	-159.9	220.00000	---	0.00000	---	0.00000	---	0.00000
78	19.00000	-70.6	1735.00000	789.9	0.00000	---	0.00000	---	0.00000
FA	ERC10416		ERC10422		ERC10425G		ERC10425B		ERC10418A
		TRCL		TRCL		TRCL		TRCL	
71	0.00000		0.00000		0.00000		0.00000		0.00000
72	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
73	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
74	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
75	0.00000	---	0.00000	---	0.00000	---	0.00000	---	0.00000
76	0.00000	---	0.00000	---	-1.00000	---	17.00000	---	0.00000
77	0.00000	---	11.00000	---	0.00000	-109.0	876.00000	2405.1	0.00000
78	0.00000	---	4.00000	-83.6	0.00000	---	176.00000	87.6	0.00000
FA	ERC10410B		ERC10420Z		ERC10420S		ERC104210A		ERC10410B
		TRCL		TRCL		TRCL		TRCL	
71	0.00000		0.00000		0.00000		0.00000		0.00000
72	0.00000	---	12.00000	---	0.00000	---	0.00000	---	0.00000
73	0.00000	---	26.00000	-38.1	0.00000	---	0.00000	---	0.00000
74	0.00000	---	70.00000	187.2	0.00000	---	0.00000	---	0.00000
75	0.00000	---	89.00000	-1.4	0.00000	---	0.00000	---	0.00000
76	0.00000	---	53.00000	-29.2	-145.00000	---	0.00000	---	0.00000
77	0.00000	---	11.00000	-22.6	272.00000	-207.6	0.00000	---	0.00000
78	0.00000	---	77.00000	87.0	-7.00000	-102.6	0.00000	---	0.00000
FA	ERC10420B		ERC10410B		ERC10420B		ERC104210A		ERC10410B
		TRCL		TRCL		TRCL		TRCL	
71	-148.00000		-2707.00000		0.00000		0.00000		0.00000
72	-253.00000	54.3	-3101.00000	14.1	0.00000	---	0.00000	---	0.00000
73	-273.00000	7.9	-5035.00000	27.1	0.00000	---	0.00000	---	0.00000
74	-249.00000	-1.5	-1512.00000	-7.9	0.00000	---	0.00000	---	0.00000
75	-194.00000	-27.9	-1282.00000	7.5	0.00000	---	0.00000	---	0.00000
76	-1337.00000	589.2	-4742.00000	58.1	0.00000	---	0.00000	---	0.00000
77	-5415.00000	275.1	-8391.00000	31.9	1537.00000	---	0.00000	---	0.00000
78	-11833.00000	137.0	-2718.00000	-93.2	7553.00000	375.3	0.00000	---	-14.00000
FA	ERC10407		ERC10407		ERC10410A		ERC10410B		ERC104012
		TRCL		TRCL		TRCL		TRCL	
71	0.00000		-173.00000		0.00000		-3.00000		0.00000
72	0.00000	---	-159.00000	-9.1	0.00000	---	-5.00000	68.7	0.00000
73	0.00000	---	-193.00000	21.4	0.00000	---	-8.00000	28.0	0.00000
74	0.00000	---	-225.00000	16.6	0.00000	---	-8.00000	0.0	0.00000
75	0.00000	---	-244.00000	0.6	0.00000	---	-8.00000	0.0	0.00000
76	0.00000	---	-224.00000	-0.2	0.00000	---	-0.00000	33.3	0.00000
77	0.00000	---	-229.00000	2.2	0.00000	---	-7.00000	-12.5	0.00000
78	0.00000	---	-343.00000	52.0	0.00000	---	-7.00000	0.0	0.00000
FA	ERC10403								
		TRCL							
71	0.00000								
72	0.00000	---							
73	0.00000	---							
74	0.00000	---							
75	0.00000	---							
76	0.00000	---							
77	0.00000	---							
78	0.00000	---							

FA	EBC06104	EBC16109	EBC16113	ECC05215	ECC074515
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71	0.00000	0.00000	41.00000	0.00000	
72	0.00000	0.00000	19.00000	0.00000	-1.44751
73	0.00000	0.00000	5.00000	0.00000	1.23182
74	0.00000	0.00000	11.00000	0.00000	1.29201
75	0.00000	0.00000	41.00000	0.00000	0.00000
76	0.00000	0.00000	36.00000	0.00000	15.47609
77	0.00000	0.00000	36.00000	0.00000	0.17459
78	0.00000	0.00000	36.00000	0.00000	2.62417
FA	ECC078015	ECC100012	ECC100016	ECC110012	ECC110014
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71					0.00000
72	31.47222	10.61197	5.13573	11.02201	0.00000
73	0.78117	11.70938	0.01493	0.00000	0.00000
74	5.45521	16.04934	3.03469	1.09374	0.00000
75	1.93854	10.64561	-3.18089	10.79729	0.00000
76	3.41259	3.32774	-2.05669	1.30274	0.00000
77	7.47486	1.14387	3.02774	17.25516	0.00000
78	4.96195	3.46970	10.33526	7.65853	0.00000
FA	ECC110016	ECC110018	ECC110015	ECC110012	F0393
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71					12.56000
72	11.02201	0.00000	0.00000	-0.92876	10.00000
73	0.00000	0.00000	-0.50971	0.00000	16.00000
74	0.00000	-0.45188	2.12149	0.53558	17.00000
75	7.74100	-3.22746	0.47109	-1.10331	22.00000
76	1.20076	-1.21354	1.27107	-2.19257	25.00000
77	20.33210	0.00000	0.00000	-1.07767	25.00000
78	0.34435	2.77005	1.04318	-6.18535	25.00000
FA	F03070273	F03010	F03002	F0300	F030
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71	16.31154	2.17349	325011.00000	10.00000	119.23209
72	70.50209	2.42000	315371.00000	0.0	120.18730
73	100.00000	3.27040	48550.00000	15.0	123.11539
74	124.70810	11.50000	501051.00000	13.0	129.43126
75	125.55854	11.50000	074887.00000	23.1	132.11050
76	140.25600	12.30000	550307.00000	12.5	135.13626
77	174.00130	12.39600	615100.00000	0.0	138.34220
78	197.01550	12.70000	574440.00000	0.0	141.57770
FA	F0300	F03050	F03053	F03000	F03000
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71	33.33333	49.00000	444.20000	0.12716	0.01154
72	30.00000	55.00000	220.74374	0.10749	0.01217
73	42.00000	67.00000	824.74923	0.10172	0.01035
74	50.33333	92.00000	853.91304	0.19216	0.01103
75	62.00000	109.00000	814.10993	0.12750	0.01431
76	70.50000	102.00000	915.14351	0.12107	0.01327
77	76.00000	111.00000	941.0102	0.11521	0.01430
78	76.00000	120.00000	1039.20210	0.11659	0.01478
FA	F03000	F03000	F03000	F03000	F03000
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
71	0.10301	0.00000	0.00000	0.10370	0.00000
72	0.10301	0.00000	0.00000	0.00000	0.00000
73	0.10301	0.00000	0.00000	0.00000	0.00000
74	0.10301	0.00000	0.00000	0.00000	0.00000
75	0.10301	0.00000	0.00000	0.00000	0.00000
76	0.10301	0.00000	0.00000	0.00000	0.00000
77	0.10301	0.00000	0.00000	0.00000	0.00000
78	0.10301	0.00000	0.00000	0.00000	0.00000

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FA	TC10A09	TC10B09	ZC11A10A	ZC11B09	ZC11C09	ZC11D09
	ISCU	ISCU	ISCU	ISCU	ISCU	ISCU
71	0.00864	0.33576	-0.29813		0.27027	0.14579
72	0.00049 -29.5	0.45220 34.7	-0.21141 -29.1		0.31575 33.5	0.15145 3.7
73	0.00352 28.3	0.51095 33.9	-0.22698 8.9		0.36585 -3.1	0.15765 5.5
74	0.00133 114.4	0.42407 -18.9	-0.28758 20.1		0.30979 1.0	0.19231 29.3
75	0.00230 73.3	0.35394 -18.7	-0.27711 3.3		0.27760 -10.1	0.17512 -8.9
76	0.00188 -19.1	0.37357 5.5	-0.21314 -17.9		0.24693 -1.2	0.15129 -13.4
77	0.00178 -6.3	0.32933 -14.3	-0.21859 -18.7		0.26742 1.3	0.15377 8.9
78	0.00101 3.8	0.29102 -9.2	-0.26028 20.0		0.25315 -5.0	0.13787 -13.2

3-2. Forecast Values (1979-1990)

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(1) Endogenous Variables

FA	CE734		CFA		CP173A		CP73B		ECC01R91		ECC01R88	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	1065.		11535.		241.		6755.		258.		186.	
79	1211.	21.2	12228.	22.0	284.	17.9	7200.	6.6	565.	101.4	516.	127.4
80	1425.	16.4	21070.	18.9	320.	12.7	7652.	6.3	710.	31.4	659.	33.3
81	1582.	11.0	21071.	18.0	359.	12.0	8117.	6.1	1023.	42.5	773.	41.4
82	1763.	11.4	21245.	17.6	400.	11.8	8688.	6.0	1439.	49.7	1497.	41.9
83	1969.	11.7	31325.	17.4	445.	11.3	9126.	6.0	1861.	29.5	1834.	39.1
84	2143.	8.0	41975.	16.0	492.	10.5	9695.	6.1	249.	-51.4	837.	-54.3
85	2341.	9.4	41503.	16.0	540.	9.9	10261.	6.0	1302.	49.9	1222.	51.7
86	2567.	9.6	53025.	15.7	592.	9.6	10873.	5.9	1751.	35.1	1729.	35.9
87	2821.	9.8	62232.	15.6	648.	9.5	11521.	6.0	2247.	27.8	2219.	28.3
88	3097.	9.9	71934.	15.4	707.	9.3	12213.	6.0	2779.	23.6	2749.	23.9
89	3399.	7.0	82756.	15.0	771.	8.7	12958.	6.1	3324.	19.6	3274.	19.0
90	3611.	8.1	94788.	14.5	835.	8.3	13729.	6.0	3910.	17.3	3848.	17.4

FA	ECC03R07		ECC03R11		ECC02R03		ECC02R04		ECC03R02		ECC03R03	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	-76.		165.		-92569.		32402.		3659.		-11513.	
79	-275.	201.9	233.	121.9	-95902.	3.6	33522.	2.6	7075.	115.2	-15313.	33.0
80	-312.	38.0	219.	27.9	-98902.	-5.2	33922.	1.2	9396.	26.9	-15370.	0.6
81	-437.	66.0	349.	16.0	-95802.	5.5	34322.	1.2	12402.	24.5	-15422.	0.2
82	-542.	07.9	457.	39.9	-98552.	2.9	37572.	9.5	13685.	9.8	-16213.	8.4
83	-1321.	49.2	565.	10.0	-93301.	0.7	41892.	19.5	12977.	-4.9	-16921.	1.3
84	-344.	-74.0	487.	-3.4	-94806.	-2.5	46542.	8.4	14225.	9.4	-17625.	4.1
85	-777.	126.2	497.	0.0	-98101.	1.2	49542.	0.0	17468.	22.8	-17370.	-1.4
86	-1234.	58.0	487.	0.0	-91576.	-6.4	55552.	15.1	17271.	-1.1	-20497.	19.0
87	-1724.	39.7	487.	0.0	-92376.	0.9	55652.	0.0	20418.	21.3	-20402.	-1.1
88	-2254.	30.0	487.	0.0	-93176.	0.9	55652.	0.0	24079.	10.8	-20974.	-1.5
89	-2789.	24.2	487.	0.0	-93976.	0.9	55652.	0.0	28941.	16.3	-19786.	-1.5
90	-3373.	20.5	487.	0.0	-94576.	0.4	55652.	0.0	33251.	11.9	-17456.	-1.7

FA	ECC03R04		ECC03R05		ECC03R06		ECC03R07		ECC03R08		ECC03R09	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	-619.		0.		-2789.		-3010.		-25.		31871.	
79	-650.	6.7	0.	-109.0	-8030.	3.9	-3218.	6.7	-45.	83.0	32817.	3.7
80	-619.	6.2	0.	---	-4072.	-24.7	-3524.	0.9	-45.	0.0	33242.	1.2
81	-730.	5.0	0.	---	-3710.	-39.1	-3761.	6.7	-45.	0.0	33037.	1.2
82	-710.	6.0	0.	---	-3870.	3.2	-4010.	6.8	-45.	0.0	34016.	9.5
83	-835.	7.1	0.	---	-4242.	14.3	-4245.	4.9	-45.	0.0	44849.	19.4
84	-880.	5.4	0.	---	-3779.	-11.3	-5243.	21.9	-45.	0.0	47677.	8.2
85	-925.	5.1	0.	---	-334.	-91.2	-5407.	3.9	-45.	0.0	47677.	0.0
86	-975.	5.4	0.	---	-3090.	1883.7	-5604.	4.0	-45.	0.0	54374.	15.1
87	-1030.	5.8	0.	---	44.	-109.1	-5910.	4.0	-45.	0.0	51071.	0.0
88	-1090.	5.6	0.	---	4193.	140110	-6157.	4.1	-45.	0.0	54374.	0.0
89	-1155.	4.0	0.	---	6580.	102.7	-6116.	0.2	-45.	0.0	51074.	0.0
90	-1230.	4.5	0.	---	13030.	53.7	-6109.	4.3	-45.	0.0	51074.	0.0

FA	ECC03R10		ECC03R11		ECC03R12		ECC03R13	
		IRCL		IRCL		IRCL		IRCL
78	2412.		0.		21230.		3030.	
79	2569.	-4.3	0.	---	23918.	12.6	4170.	9.1
80	2650.	6.0	0.	---	26231.	9.7	4569.	9.3
81	2750.	3.0	0.	---	28071.	10.1	5159.	12.9
82	2750.	0.0	0.	---	31705.	9.0	5057.	12.6
83	2750.	0.0	0.	---	36201.	20.8	6445.	10.9
84	2750.	0.0	0.	---	41319.	7.9	7085.	9.6
85	2750.	0.0	0.	---	44589.	7.8	7736.	9.5
86	2750.	0.0	0.	---	48024.	7.7	8456.	9.3
87	2750.	0.0	0.	---	51701.	7.7	9239.	9.3
88	2750.	0.0	0.	---	55634.	7.6	10092.	9.2
89	2750.	0.0	0.	---	59603.	7.3	10911.	8.4
90	2750.	0.0	0.	---	63777.	7.2	11851.	8.3

FA	EBC03R14		EBC03R15		EBC03R16		EBC04R02		EBC04R16		EBC04R09A	
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	8555.		973.		438.		3.		-119.		3743.	
79	9477.	10.0	1098.	22.3	465.	4.4	123.	111.0	423.	155.0	3959.	5.0
80	10470.	10.7	1269.	7.4	495.	4.5	871.	105.8	871.	105.8	4007.	1.2
81	11552.	10.1	1365.	8.2	528.	6.5	1169.	57.4	1369.	57.1	4054.	1.2
82	12811.	9.4	1506.	8.7	563.	6.4	1579.	15.4	1579.	15.4	4111.	9.3
83	13834.	9.2	1643.	9.1	620.	6.2	1363.	13.7	1363.	13.7	5312.	19.6
84	15065.	8.9	1759.	7.1	658.	6.9	1633.	17.8	1633.	17.8	5747.	8.2
85	16354.	8.6	1893.	7.6	699.	1.0	2392.	46.5	2392.	46.5	5747.	0.0
86	17709.	8.2	2011.	7.9	742.	1.0	2339.	-2.2	2339.	-2.2	6616.	15.1
87	19110.	8.0	2110.	8.2	787.	1.1	3217.	37.6	3217.	37.6	6616.	0.0
88	20570.	7.7	2196.	8.4	839.	1.1	4162.	29.4	4162.	29.4	6616.	0.0
89	22149.	7.6	2557.	8.7	899.	1.1	5169.	24.2	5169.	24.2	6616.	0.0
90	23781.	7.4	2739.	7.1	954.	1.2	6241.	20.7	6241.	20.7	6616.	0.0

FA	EBC04R11		EBC04R13		EBC05R02		EBC05R06		EBC05R09A		EBC05R11	
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	3720.		3611.		652.		669.		25.		731.	
79	4303.	11.4	4091.	12.0	1011.	55.1	776.	14.2	50.	97.5	826.	13.0
80	4878.	11.3	4578.	12.5	1131.	12.7	864.	11.4	51.	1.2	915.	10.7
81	5423.	11.2	5123.	11.9	1249.	11.9	959.	11.0	51.	1.2	1010.	10.1
82	6021.	11.0	5721.	11.7	1417.	11.7	1057.	10.3	56.	2.5	1113.	10.2
83	6674.	10.9	6374.	11.4	1549.	10.7	1159.	9.6	67.	19.4	1226.	10.1
84	7379.	10.8	7079.	11.1	1720.	9.4	1245.	9.1	72.	8.2	1337.	9.1
85	8139.	10.3	7839.	10.7	1891.	9.6	1341.	9.4	72.	0.0	1455.	8.9
86	8955.	10.0	8655.	10.4	2051.	8.9	1501.	8.3	83.	15.1	1585.	8.8
87	9831.	9.8	9531.	10.1	2245.	9.4	1610.	7.2	83.	0.0	1723.	8.7
88	10770.	9.4	10470.	9.9	2455.	9.3	1719.	6.1	83.	0.0	1873.	8.7
89	11765.	9.3	11465.	9.6	2689.	8.7	1839.	8.3	83.	0.0	2021.	8.0
90	12858.	9.1	12558.	9.3	2933.	8.0	2099.	8.2	83.	0.0	2181.	7.9

FA	EBC05R13		EBC05R15		EBC06R02		EBC06R06		EBC06R09A		EBC06R11	
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	477.		54.		698.		813.		6136.		8475.	
79	761.	12.3	45.	21.2	2769.	230.7	2761.	265.2	6151.	5.2	9428.	11.2
80	842.	10.0	72.	10.4	3074.	11.2	3076.	11.2	6532.	1.2	10428.	10.7
81	930.	10.4	89.	11.0	4073.	25.1	4073.	25.1	2110.	1.2	11409.	10.1
82	1024.	10.1	87.	11.4	5347.	9.7	5347.	9.7	2249.	9.5	12589.	9.6
83	1126.	10.0	100.	11.7	5939.	-1.1	5939.	-4.9	3459.	19.4	13747.	9.2
84	1228.	9.1	109.	8.0	5490.	10.1	5510.	10.1	9360.	9.2	14769.	8.9
85	1339.	8.9	119.	9.4	6979.	22.8	6979.	22.8	9369.	8.0	16249.	8.5
86	1455.	8.7	130.	8.4	4797.	-1.2	4797.	-1.2	10786.	15.1	17503.	8.2
87	1580.	8.4	143.	9.0	8195.	20.6	8195.	20.6	10786.	0.0	18782.	8.0
88	1716.	8.4	157.	9.9	9443.	17.9	9443.	17.9	10786.	0.0	20459.	7.7
89	1853.	8.0	169.	2.0	11218.	18.0	11218.	18.0	10786.	0.0	21976.	7.4
90	1990.	7.8	183.	8.1	12828.	19.4	12828.	19.4	10786.	0.4	23615.	7.4

FA	EBC06R14		EBC07R02		EBC07R06		EBC07R09A		EBC07R11		EBC07R12	
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	6425.		2924.		2459.		4881.		4334.		1231.	
79	9424.	11.2	3339.	45.0	3324.	38.5	4925.	5.3	5374.	21.0	1549.	19.3
80	10428.	10.7	3690.	16.5	3873.	16.5	4890.	1.2	5920.	8.4	1701.	10.8
81	11433.	10.1	4099.	10.0	4574.	18.1	4736.	1.2	6423.	10.2	1999.	12.2
82	12539.	9.4	4752.	2.9	4937.	2.9	5187.	9.5	7844.	10.0	2319.	16.0
83	13747.	9.2	5241.	-3.0	4749.	-3.0	6281.	19.6	7713.	9.2	2418.	12.9
84	14948.	8.9	5659.	8.2	5441.	4.2	6717.	8.2	8323.	2.9	2903.	10.9
85	16247.	8.5	5910.	17.0	5993.	17.0	6712.	0.0	8977.	2.9	3210.	10.6
86	17583.	8.2	5810.	-1.7	5893.	-1.7	7728.	15.1	9477.	2.8	3537.	10.2
87	18922.	8.0	6881.	18.9	6789.	17.0	7728.	0.0	10432.	2.8	3899.	10.0
88	20459.	7.7	7845.	15.4	7850.	15.6	7728.	0.0	11254.	2.8	4227.	9.0
89	21996.	7.6	8913.	13.3	8890.	13.3	7728.	0.0	12039.	2.0	4447.	8.0
90	23615.	7.4	10030.	12.5	10015.	12.6	7728.	0.0	12855.	2.0	5019.	7.1

FA	EBC07813		EBC07815		EBC07820		EBC07846		EBC07859A		EBC078811	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	2897.		579.		0.		38.		1538.		1431.	
79	3135.	16.7	762.	20.2	51.	---	-9.	-123.1	1497.	-2.7	1419.	0.3
80	3318.	6.8	775.	10.4	125.	144.8	49.	-286.6	1515.	1.2	1547.	6.1
81	3581.	8.5	869.	11.0	281.	168.1	194.	221.4	1533.	1.2	1660.	10.2
82	3789.	6.3	959.	11.4	283.	18.5	221.	14.0	1679.	9.5	1834.	19.5
83	4021.	6.2	1071.	11.7	133.	-53.8	43.	-71.0	2609.	19.6	2093.	9.2
84	4255.	5.7	1165.	8.8	139.	-9.1	63.	-9.7	2173.	8.2	2167.	8.2
85	4493.	5.6	1274.	9.4	315.	137.0	245.	287.4	2173.	0.0	2349.	8.4
86	4743.	5.6	1397.	9.4	165.	-41.2	115.	-53.0	2502.	15.1	2549.	8.5
87	5019.	5.6	1533.	9.8	116.	119.4	336.	111.9	2502.	0.0	2769.	8.7
88	5213.	5.7	1605.	9.9	653.	69.6	583.	73.2	2502.	0.0	3116.	8.9
89	5575.	5.3	1816.	7.8	939.	37.8	839.	42.3	2502.	0.0	3263.	8.2
90	5871.	5.3	1943.	8.1	1170.	39.9	1160.	32.6	2502.	0.0	3533.	8.3

FA	EBC07812		EBC07815		EBC07892		EBC07804		EBC07815		EBC07806	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	1189.		51.		2024.		-69.		415.		2439.	
79	1174.	-0.5	45.	21.2	3390.	47.5	-75.	10.3	0.	-160.0	3315.	35.9
80	1254.	6.8	72.	18.4	4414.	18.4	-89.	6.7	0.	---	3934.	18.7
81	1460.	11.6	89.	11.0	4650.	20.8	-69.	0.0	0.	---	4770.	21.3
82	1564.	11.0	89.	11.4	5219.	8.9	-69.	0.0	0.	---	5169.	8.2
83	1723.	10.1	100.	11.7	4377.	-4.5	-65.	-4.3	0.	---	4812.	-4.7
84	1878.	9.0	101.	8.8	5192.	4.8	-65.	0.0	0.	---	5107.	6.1
85	2050.	9.2	119.	9.4	6233.	20.1	-65.	0.0	0.	---	6118.	20.4
86	2238.	1.2	139.	9.6	6953.	-3.7	-65.	0.0	0.	---	5919.	-3.7
87	2446.	9.3	143.	9.8	7210.	20.1	-65.	0.0	0.	---	7125.	20.4
88	2679.	9.5	157.	9.9	6519.	10.1	-65.	0.0	0.	---	8433.	18.4
89	2913.	8.8	167.	7.8	9812.	15.2	-65.	0.0	0.	---	9727.	15.3
90	3170.	8.8	183.	8.1	11260.	14.1	-65.	0.0	0.	---	11115.	14.3

FA	EBC07817		EBC07818		EBC07859A		EBC07811		EBC07812		EBC07813	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	-2452.		-25.		6121.		5737.		2471.		2687.	
79	-2578.	5.9	-45.	80.0	6122.	-4.7	6755.	18.4	2713.	9.8	3515.	23.4
80	-2743.	5.9	-45.	0.0	6195.	1.2	7335.	7.9	2749.	9.1	3528.	6.1
81	-2811.	5.9	-45.	0.0	6247.	8.2	8133.	10.2	3198.	11.8	3746.	6.1
82	-3083.	5.9	-45.	0.0	6667.	9.5	6819.	10.1	3683.	14.3	3968.	6.0
83	-3265.	5.9	-45.	0.0	8213.	19.6	9715.	9.2	4349.	11.8	4264.	5.9
84	-3459.	5.9	-45.	0.0	8885.	8.2	10430.	8.0	4781.	10.2	4335.	5.5
85	-3652.	5.9	-45.	0.0	8885.	0.0	11376.	8.0	5269.	10.0	4673.	5.4
86	-3879.	5.9	-45.	0.0	10230.	15.1	12225.	7.9	5775.	9.8	4923.	5.4
87	-4109.	5.9	-45.	0.0	10230.	0.0	13282.	8.0	6336.	9.7	5189.	5.4
88	-4352.	5.9	-45.	0.0	10230.	0.0	10266.	0.1	6551.	9.7	5473.	5.5
89	-4611.	5.9	-45.	0.0	10230.	0.0	15392.	7.3	7562.	8.8	5755.	5.2
90	-4881.	5.9	-45.	0.0	10230.	0.0	16416.	7.3	8219.	8.7	6951.	5.1

FA	EBC07814		EBC07815		EBC08803		EBC08806		EBC08817A		EBC08811	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	0.		579.		-111.		-493.		4842.		1651.	
79	0.	---	747.	32.5	-1115.	241.3	-1755.	191.8	4392.	-9.7	1937.	4.4
80	0.	---	847.	18.0	-1249.	-11.7	-1589.	-9.4	4409.	1.2	2029.	7.4
81	0.	---	949.	11.0	-1074.	-18.0	-1414.	-11.0	4472.	1.2	2239.	7.3
82	0.	---	1010.	11.4	-1254.	18.7	-1594.	12.7	4924.	9.5	2397.	7.4
83	0.	---	1171.	11.7	-2024.	81.6	-2346.	48.5	5672.	19.1	2575.	7.4
84	0.	---	1274.	8.8	-1475.	-27.2	-1815.	-29.3	6374.	8.2	2754.	7.0
85	0.	---	1393.	9.4	-1284.	-13.0	-1824.	-19.5	6374.	8.0	2945.	6.9
86	0.	---	1527.	9.4	-2014.	59.2	-2384.	45.8	7339.	15.1	3159.	8.9
87	0.	---	1676.	9.8	-1824.	-18.8	-2181.	-9.2	7339.	0.0	3370.	7.0
88	0.	---	1842.	9.9	-1588.	-13.0	-1928.	-18.9	7339.	0.0	3497.	7.0
89	0.	---	1965.	7.8	-1348.	-15.1	-1689.	-12.4	7339.	0.0	3441.	6.4
90	0.	---	2149.	8.1	-1610.	-18.9	-1436.	-15.1	7339.	0.0	4169.	6.4

(26)

FA	EBC08R12		EBC09R03		EBC09R06		EBC09R09A		EBC09R11		EBC10R103	
		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU
78	1339.		-2227.		-2187.		1184.		0.		-657.	
79	1429.	5.1	-2478.	39.1	-2878.	32.5	898.	-18.8	0.		-475.	-27.7
80	1549.	7.8	-2987.	8.1	-2987.	8.1	769.	1.2	0.		-614.	29.1
81	1719.	9.5	-2928.	9.1	-2928.	9.1	920.	1.2	0.		-793.	14.5
82	1879.	9.3	-3088.	9.9	-3088.	9.9	1618.	9.5	0.		-677.	-3.9
83	2053.	9.3	-65.	-97.2	115.	-113.8	1285.	19.6	3628.		-474.	-8.1
84	2228.	8.5	-184.	115.9	316.	-21.8	1311.	8.2	3628.	0.0	-689.	-1.1
85	2414.	8.1	-184.	0.0	316.	0.0	1311.	0.0	3628.	0.0	-473.	-2.2
86	2614.	8.3	-381.	107.1	119.	-62.4	1581.	15.1	3628.	0.0	-659.	-8.5
87	2828.	8.2	-381.	0.0	119.	0.0	1581.	0.0	3628.	0.0	-652.	-7.6
88	3069.	8.2	-381.	0.0	119.	0.0	1581.	0.0	3628.	0.0	-632.	-2.9
89	3294.	7.6	-381.	0.9	119.	6.0	1581.	0.0	3628.	0.0	-612.	-3.2
90	3542.	7.5	-381.	0.0	119.	0.0	1581.	0.0	3628.	0.0	-590.	-3.5

FA	EBC10R06		EBC10R09A		EBC10R11		EBC10R12		EBC10R14		EBC10R203	
		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU
78	-652.		59.		89.		32.		41.		-8218.	
79	-471.	-27.8	69.	3.3	89.	11.1	35.	9.9	51.	12.8	-10525.	28.1
80	-619.	29.4	61.	6.2	100.	12.6	39.	9.8	42.	14.5	-10625.	1.8
81	-659.	14.4	61.	1.2	112.	11.8	42.	9.8	70.	13.1	-10724.	0.9
82	-693.	-3.0	67.	9.5	125.	13.3	47.	9.9	78.	12.1	-11255.	9.4
83	-692.	-0.1	80.	19.6	138.	15.0	51.	10.1	87.	11.5	-14117.	29.1
84	-694.	-1.1	87.	8.2	153.	10.5	58.	9.5	97.	11.1	-15278.	8.2
85	-669.	-2.2	87.	0.0	168.	10.0	62.	9.5	107.	10.4	-15237.	-8.3
86	-665.	-8.5	100.	15.1	185.	9.8	67.	9.6	117.	9.9	-17592.	15.5
87	-688.	-2.7	109.	0.0	202.	9.6	74.	9.7	128.	9.5	-17545.	-8.3
88	-628.	-3.0	109.	0.0	222.	9.5	81.	9.8	140.	9.3	-17495.	-8.3
89	-618.	-3.2	109.	0.0	242.	9.2	89.	9.3	153.	9.2	-17414.	-8.3
90	-586.	-3.4	109.	0.0	261.	8.9	97.	9.3	167.	8.7	-17319.	-8.3

FA	EBC10R06		EBC10R09A		EBC10R11		EBC10R12		EBC10R14		EBC10R203	
		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU
78	-8147.		9320.		436.		436.		81.		-8975.	
79	-10418.	28.2	10913.	17.1	465.	6.6	465.	6.6	81.	0.0	-11869.	23.9
80	-10549.	1.0	11644.	1.2	435.	6.5	435.	6.5	81.	0.0	-11240.	2.2
81	-10647.	-0.9	11175.	1.2	528.	6.5	528.	6.5	81.	0.0	-11428.	1.7
82	-11078.	9.7	12241.	9.5	543.	6.6	543.	6.6	81.	0.0	-12452.	9.9
83	-14018.	20.7	14548.	19.4	609.	6.7	609.	6.7	81.	0.0	-14313.	19.6
84	-15201.	8.3	15839.	8.2	638.	6.3	638.	6.3	81.	0.0	-15764.	7.8
85	-15149.	-8.3	15839.	0.0	679.	6.3	679.	6.3	81.	0.0	-15918.	-8.3
86	-17515.	15.5	18237.	15.1	722.	6.4	722.	6.4	81.	0.0	-18261.	14.8
87	-17419.	-8.3	18237.	0.0	769.	6.5	769.	6.5	81.	0.0	-18127.	-8.4
88	-17416.	-8.3	18237.	0.0	819.	6.5	819.	6.5	81.	0.0	-18127.	-8.4
89	-17347.	-8.3	18237.	0.0	870.	6.2	870.	6.2	81.	0.0	-18054.	-8.4
90	-17313.	-8.3	18237.	0.0	924.	6.2	924.	6.2	81.	0.0	-17931.	-8.4

FA	EBC10R06		EBC10R09A		EBC10R11		EBC10R12		EBC10R14		EBC10R203	
		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU		ZRCU
78	-2.		-8799.		9378.		874.		-1.		0.	
79	0.	-180.0	-14919.	24.1	10972.	17.0	509.	-25.8	0.	-180.0	0.	
80	0.		-11159.	2.2	11101.	1.2	650.	38.0	0.		0.	
81	0.		-11347.	11.7	10235.	1.2	750.	15.4	0.		0.	
82	0.		-12371.	9.0	12388.	9.5	750.	0.0	0.		0.	
83	0.		-14732.	19.1	14721.	18.4	750.	0.0	0.		0.	
84	0.		-15865.	7.8	15924.	8.2	750.	0.0	0.		0.	
85	0.		-15829.	-8.4	15924.	0.0	750.	0.0	0.		0.	
86	0.		-18181.	14.9	18337.	15.1	750.	0.0	0.		0.	
87	0.		-18116.	-8.4	18337.	0.0	750.	0.0	0.		0.	
88	0.		-18118.	-8.4	18337.	0.0	750.	0.0	0.		0.	
89	0.		-17925.	-8.0	18337.	0.0	750.	0.0	0.		0.	
90	0.		-17940.	-8.8	18337.	0.0	750.	0.0	0.		0.	

FA	EBC16R11		EBC16R12		EBC16R14		EBC16R16		EBC17AR11		EBC17AR6	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	516.		32.		49.		436.		30327.		30327.	
79	554.	7.3	35.	9.9	54.	12.0	485.	6.6	29877.	-1.4	29877.	-1.4
80	595.	7.5	39.	9.8	62.	11.5	495.	6.5	33966.	13.6	33966.	13.6
81	449.	7.4	42.	9.8	70.	13.1	526.	6.5	34444.	1.4	34444.	1.4
82	497.	7.4	47.	9.9	78.	12.1	567.	6.6	41431.	20.3	41431.	20.3
83	739.	7.5	51.	10.1	87.	11.5	499.	6.7	50775.	22.6	50775.	22.6
84	791.	7.1	54.	9.5	97.	11.1	438.	6.3	60976.	18.3	60976.	18.3
85	847.	7.1	62.	9.5	107.	10.4	679.	6.3	60513.	0.7	60513.	0.7
86	997.	7.1	67.	9.6	117.	9.9	722.	6.4	60995.	0.0	60995.	0.0
87	971.	7.1	74.	9.7	128.	9.5	769.	6.5	61527.	0.9	61527.	0.9
88	1040.	7.2	81.	9.8	149.	9.3	819.	6.5	62123.	1.0	62123.	1.0
89	1112.	6.8	89.	9.3	153.	9.2	870.	6.2	62749.	1.0	62749.	1.0
90	1167.	6.8	97.	9.3	167.	8.7	924.	6.2	63415.	1.1	63415.	1.1

FA	EBC17AR9		EBC17AR10		EBC17AR11		EBC17AR12		EBC17AR14		EBC17AR16	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	-45.		-8569.		2225.		1939.		7.		1684.	
79	-54.	20.3	-1165.	-17.2	2444.	9.9	1252.	9.9	2.	4.6	1192.	9.9
80	-54.	0.2	-5495.	13.6	2495.	9.8	1375.	9.8	2.	4.3	1397.	9.8
81	-54.	0.3	-5167.	1.6	2149.	9.8	1510.	9.8	2.	6.1	1437.	9.8
82	-55.	0.3	-4215.	20.3	3243.	9.9	1650.	9.9	3.	6.0	1569.	9.9
83	-55.	0.3	-7416.	22.6	3549.	10.1	1827.	10.1	3.	4.0	1737.	10.1
84	-55.	0.3	-9811.	18.3	3997.	9.5	2080.	9.5	3.	4.1	1844.	9.5
85	-55.	0.3	-9277.	0.7	4278.	9.5	2190.	9.5	3.	4.0	2065.	9.5
86	-55.	0.3	-9149.	0.0	4883.	9.6	2492.	9.6	3.	5.9	2284.	9.6
87	-55.	0.3	-9229.	0.9	5142.	9.7	2431.	9.7	3.	6.0	2506.	9.7
88	-56.	0.1	-9119.	1.0	5613.	9.8	2831.	9.8	4.	6.0	2751.	9.8
89	-56.	0.1	-9111.	1.0	4179.	9.3	3159.	9.3	4.	6.1	3007.	9.3
90	-56.	0.1	-9512.	1.1	4748.	9.3	3453.	9.3	4.	6.0	3266.	9.3

FA	EBC17R9		EBC17R10		EBC17R16		EBC17R11		EBC17R14		EBC17R16	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	-7519.		-7519.		20.		11.		10.		30327.	
79	-10446.	42.2	-11141.	42.2	9.	-54.3	2.	-24.8	2.	-81.8	29877.	-1.4
80	-13692.	24.6	-13871.	24.6	9.	1.5	2.	6.3	2.	6.3	33966.	13.6
81	-13921.	0.2	-13921.	0.2	9.	1.5	2.	6.1	2.	6.1	34444.	1.4
82	-17691.	31.5	-19881.	36.5	10.	1.5	3.	6.0	3.	6.0	41431.	20.3
83	-25056.	31.1	-25056.	31.1	10.	1.6	3.	6.0	3.	6.0	50775.	22.6
84	-32666.	24.3	-32666.	24.3	10.	1.7	3.	6.1	3.	6.1	60976.	18.3
85	-32666.	0.0	-32666.	0.0	10.	1.7	3.	6.0	3.	6.0	60513.	0.7
86	-32666.	0.0	-32666.	0.0	10.	1.0	3.	5.9	3.	5.9	60995.	0.0
87	-32666.	0.0	-32666.	0.0	10.	1.9	3.	6.0	3.	6.0	61527.	0.9
88	-32666.	0.0	-32666.	0.0	11.	2.0	4.	6.0	4.	6.0	62123.	1.0
89	-32666.	0.0	-32666.	0.0	11.	2.1	4.	6.1	4.	6.1	62749.	1.0
90	-32666.	0.0	-32666.	0.0	11.	2.1	4.	6.0	4.	6.0	63415.	1.1

FA	EBC17R9		EBC17R10		EBC17R16		EBC17R11		EBC17R14		EBC17R16	
		IRCL		IRCL		IRCL		IRCL		IRCL		IRCL
78	-7519.		22110.		20.		-4335.		8590.			
79	-10446.	42.2	10753.	-17.0	-15.	-325.0	-4920.	-7.9	-4935.	-152.8		
80	-13692.	24.6	26975.	7.0	-15.	0.0	-4492.	11.7	-5495.	13.6		
81	-13921.	0.2	26525.	2.2	-45.	0.0	-4605.	2.5	-5167.	1.4		
82	-17691.	31.5	22439.	9.3	-45.	0.0	-5171.	12.3	-6215.	20.3		
83	-25056.	31.1	24119.	11.1	-45.	0.0	-5932.	14.7	-7616.	22.6		
84	-32666.	24.3	27410.	10.0	-45.	0.0	-6489.	12.8	-9311.	18.3		
85	-32666.	0.0	27847.	1.6	-45.	0.0	-6589.	0.0	-9277.	0.7		
86	-32666.	0.0	28329.	1.7	-45.	0.0	-6689.	0.0	-9149.	0.0		
87	-32666.	0.0	28863.	1.9	-45.	0.0	-6889.	0.0	-9229.	0.9		
88	-32666.	0.0	29457.	2.1	-45.	0.0	-6889.	0.0	-9119.	1.0		
89	-32666.	0.0	30076.	2.1	-45.	0.0	-6889.	0.0	-9111.	1.0		
90	-32666.	0.0	30749.	2.2	-45.	0.0	-6889.	0.0	-9512.	1.1		



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FA	EOC11R10	EOC11R11	EOC11R12	EOC11R14	EOC11R16	EOC12R11
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
78	-7721.	2237.	1139.	16.	1084.	0.
79	-7755. 0.4	2140. 9.4	1252. 9.9	4.	1192. 9.9	0. ---
80	-7755. 9.0	2459. 9.0	1375. 9.0	5.	1397. 9.0	0. ---
81	-7755. 0.0	2852. 9.0	1519. 9.0	5.	1437. 9.0	0. ---
82	-7755. 0.0	3244. 9.9	1669. 9.9	5.	1589. 9.9	0. ---
83	-7755. 0.0	3570. 10.1	1827. 10.1	5.	1739. 10.1	0. ---
84	-7755. 0.0	3989. 9.5	2000. 9.5	6.	1904. 9.5	0. ---
85	-7755. 0.0	4281. 9.5	2189. 9.5	6.	2085. 9.5	0. ---
86	-7755. 0.0	4691. 9.6	2409. 9.6	6.	2284. 9.6	0. ---
87	-7755. 0.0	5145. 9.7	2633. 9.7	7.	2504. 9.7	0. ---
88	-7755. 0.0	5649. 9.0	2891. 9.0	7.	2751. 9.0	0. ---
89	-7755. 0.0	6174. 9.3	3159. 9.3	8.	3007. 9.3	0. ---
90	-7755. 0.0	6740. 9.3	3453. 9.3	8.	3286. 9.3	0. ---

FA	EOC12R10	EOC12R11	EOC13R11	EOC13R10	EOC13R10B	EOC14R10
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
78	0.	0.	1241.	1249.	-693.	1197.
79	0. ---	0. ---	1421. 14.5	1429. 14.5	-1022. 14.5	1370. -9.9
80	0. ---	0. ---	1617. 27.9	1617. 27.9	-1397. 27.9	4415. 11.2
81	0. ---	0. ---	1847. 2.0	1847. 2.0	-1344. 2.0	1721. 11.5
82	0. ---	0. ---	1881. 1.0	1881. 1.0	-1357. 1.0	5187. 11.5
83	0. ---	0. ---	1989. 5.0	1989. 5.0	-1424. 5.0	4911. 11.0
84	0. ---	0. ---	3117. 19.0	3117. 19.0	-2029. 19.0	6795. 10.1
85	0. ---	0. ---	3337. 0.5	3337. 0.5	-2833. 0.5	7318. 9.6
86	0. ---	0. ---	3555. 0.5	3555. 0.5	-2848. 0.5	8927. 9.2
87	0. ---	0. ---	3773. 0.5	3773. 0.5	-2859. 0.4	8752. 9.0
88	0. ---	0. ---	3991. 0.5	3991. 0.5	-2872. 0.5	1511. 0.9
89	0. ---	0. ---	4112. 0.5	4112. 0.5	-2887. 0.5	19310. 0.5
90	0. ---	0. ---	4330. 0.5	4330. 0.5	-2900. 0.5	11172. 0.2

FA	EOC14R10	EOC14R10B	EOC14R11	EOC14R12	EOC14R14	EOC14R15
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
78	1117.	-354.	923.	574.	302.	47.
79	1191. 6.4	-179. 14.0	1012. 9.7	651. 15.1	292. -3.5	57. 21.2
80	1325. 11.2	-193. 11.2	1126. 11.2	747. 12.5	316. 0.1	63. 10.4
81	1474. 11.5	-221. 11.5	1255. 11.5	843. 12.9	342. 0.2	70. 11.0
82	1627. 10.5	-247. 11.5	1408. 11.5	952. 12.1	370. 0.1	78. 11.4
83	1827. 11.0	-274. 11.0	1553. 11.0	1048. 12.0	406. 0.1	87. 11.7
84	2012. 10.1	-302. 10.1	1710. 10.1	1193. 10.9	433. 0.2	95. 0.8
85	2205. 9.4	-331. 9.4	1874. 9.4	1303. 10.7	458. 0.0	103. 9.4
86	2488. 9.2	-341. 9.2	2047. 9.2	1428. 9.7	505. 0.0	113. 9.6
87	2624. 9.0	-354. 9.0	2232. 9.0	1502. 9.3	545. 0.0	121. 9.0
88	2859. 9.9	-429. 0.9	2430. 0.9	1701. 9.1	569. 0.1	137. 9.9
89	3102. 0.5	-445. 0.5	2637. 0.5	1851. 8.6	610. 0.2	147. 7.0
90	3359. 0.2	-544. 0.2	2854. 0.2	2054. 0.3	639. 0.0	159. 0.1

FA	EOC15R10	EOC15R12	EOC15R13	EOC15R14	EOC15R15	EOC15R16
	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL	ZCCL
78	151489.	9883.	-111127.	-489.	-528.	41129.
79	155846. 2.4	10119. 12.7	-122381. 9.6	-450. 6.7	0. 160.0	44124. -4.1
80	155169. 0.0	10220. 15.0	-120721. -1.0	-470. 6.2	0. ---	56109. 9.3
81	161336. 4.0	10645. 15.1	-125275. 4.2	-710. 5.0	0. ---	53977. 7.1
82	170756. 0.3	10810. 4.0	-130316. 2.3	-769. 6.8	0. ---	57489. 10.1
83	184619. 6.7	23445. 27.9	-142171. 5.8	-835. 7.1	0. ---	67350. 10.8
84	197643. 4.1	26073. 1.0	-147227. 3.6	-889. 5.4	0. ---	74939. 10.9
85	199152. 5.1	29116. 12.2	-148100. 0.6	-925. 5.1	0. ---	81264. 5.6
86	201710. 0.9	29719. -0.7	-148979. -2.2	-975. 5.4	0. ---	85975. 5.0
87	203551. 0.9	30316. 12.4	-149414. 0.4	-1030. 5.6	0. ---	90223. 5.0
88	205493. 1.0	30927. 11.0	-149920. -0.3	-1079. 5.0	0. ---	94241. 5.0
89	207478. 1.0	31389. 10.9	-149420. 0.3	-1155. 6.0	0. ---	100732. 5.7
90	209343. 0.9	31702. 10.4	-148740. 0.2	-1230. 6.5	0. ---	107567. 5.7

FA	EBC15R07		EBC15R08		EBC15R09A		EBC15R09B		EBC15R10A		EBC15R10B	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	-3289.		-4.		-354.		-1724.		-2868.		-7875.	
79	-3881.	15.6	-16.	2156.0	-423.	19.4	-3520.	-11.8	-4745.	-48.1	-7931.	0.7
80	-4378.	15.7	-38.	0.0	-428.	1.2	-1842.	21.2	-5355.	12.9	-7954.	0.3
81	-4789.	8.9	-38.	0.0	-433.	3.2	-1656.	0.8	-5427.	6.3	-7776.	0.3
82	-5159.	0.6	-38.	0.0	-474.	9.5	-2421.	30.4	-6425.	19.3	-8022.	0.1
83	-5688.	7.4	-38.	0.0	-547.	19.6	-3182.	31.4	-7876.	21.4	-8629.	0.3
84	-7314.	32.1	-38.	0.0	-613.	8.2	-3731.	23.8	-9271.	17.7	-8557.	0.3
85	-7777.	6.2	-38.	0.0	-613.	0.4	-3731.	0.0	-9337.	0.7	-8186.	0.4
86	-8465.	6.1	-38.	0.0	-704.	15.1	-3939.	0.0	-9439.	0.8	-8116.	0.1
87	-8765.	6.1	-38.	0.0	-765.	0.0	-3739.	0.0	-9481.	0.1	-8147.	0.1
88	-9543.	6.2	-38.	0.0	-786.	0.0	-3939.	0.0	-9578.	0.9	-8181.	0.1
89	-10125.	6.1	-38.	0.0	-786.	0.0	-3939.	0.0	-9871.	1.0	-8220.	0.1
90	-10235.	6.0	-38.	0.0	-786.	0.0	-3939.	0.0	-9772.	1.0	-8251.	0.5

FA	EBC15R11		EBC15R12		EBC15R13		EBC15R14		EBC15R15		EBC15R16	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	24595.		5594.		7472.		8973.		1020.		1547.	
79	27612.	12.7	6244.	11.6	8631.	15.9	9773.	10.1	1242.	22.2	1697.	9.0
80	30313.	9.9	6117.	10.8	9837.	9.0	10810.	10.6	1313.	7.7	1834.	8.7
81	33424.	10.2	7719.	12.8	10270.	8.9	11879.	10.1	1455.	8.1	1955.	8.8
82	36910.	10.1	8920.	13.2	11165.	8.8	13440.	9.6	1593.	8.8	2127.	8.9
83	41926.	19.3	9791.	10.9	12176.	8.9	16239.	9.2	1730.	9.2	5949.	125.7
84	47446.	8.0	10701.	9.3	13176.	8.1	15584.	8.9	1851.	7.2	6122.	3.1
85	51222.	8.0	11683.	9.2	14362.	8.1	16927.	8.5	1977.	7.7	6113.	3.6
86	55250.	7.9	12730.	9.0	15486.	8.3	18212.	8.2	2157.	8.0	6557.	3.8
87	59355.	7.8	13884.	9.0	16757.	8.2	19462.	8.0	2335.	8.3	6721.	1.0
88	64281.	7.8	15149.	9.0	18121.	8.1	21187.	7.8	2533.	8.5	7220.	6.3
89	69181.	7.4	16480.	8.1	19547.	7.9	22795.	7.6	2764.	6.8	7527.	6.2
90	74016.	7.4	17774.	8.3	21063.	7.7	24479.	7.4	2997.	7.1	7869.	6.4

FA	EBC16R01		EBC16R05		EBC16R11		EBC16R12		EBC16R14		EBC17R01	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	39492.		31492.		37492.		4248.		31168.		195974.	
79	49270.	2.0	40270.	2.0	48271.	2.0	4268.	-31.8	35934.	8.1	195349.	2.3
80	42551.	5.6	42551.	5.6	42551.	5.6	3620.	-35.4	38876.	8.2	197652.	1.2
81	45078.	5.9	45078.	5.9	45078.	5.9	3021.	-16.5	42021.	8.4	204414.	4.1
82	47874.	6.3	47874.	6.3	47874.	6.3	2502.	-12.2	45357.	7.9	222451.	2.9
83	51027.	6.5	51027.	6.5	51027.	6.5	2043.	-12.6	49278.	7.9	237416.	6.6
84	54545.	7.0	54545.	7.0	54545.	7.0	1760.	-13.2	52758.	7.8	252448.	6.1
85	58410.	7.1	58410.	7.1	58410.	7.1	1539.	-11.1	56873.	7.8	258439.	2.8
86	62450.	7.2	62450.	7.2	62450.	7.2	1317.	-11.1	61247.	7.8	261359.	2.3
87	67217.	7.3	67217.	7.3	67217.	7.3	1124.	-11.7	66157.	7.8	270768.	2.4
88	72174.	7.4	72174.	7.4	72174.	7.4	957.	-11.8	71181.	7.8	277667.	2.5
89	77588.	7.5	77588.	7.5	77588.	7.5	816.	-11.6	76499.	7.8	285656.	2.7
90	83419.	7.5	83419.	7.5	83419.	7.5	743.	-12.2	82649.	7.7	292762.	2.7

FA	EBC17R02		EBC17R03		EBC17R04		EBC17R05		EBC17R06		EBC17R07	
	IRCL		IRCL		IRCL		IRCL		IRCL		IRCL	
78	9883.		-111029.		-497.		-528.		68621.		-3267.	
79	14819.	42.7	-122819.	9.6	-459.	6.7	0.	-160.0	81412.	-2.5	-3881.	15.6
80	18220.	15.0	-128221.	-1.8	-494.	6.2	0.	---	92969.	7.6	-4398.	15.7
81	18666.	15.1	-125275.	6.2	-234.	5.8	0.	---	97975.	6.6	-4769.	8.9
82	19870.	6.6	-134396.	7.3	-289.	6.0	0.	---	107344.	8.4	-5159.	8.6
83	25445.	27.9	-142171.	5.8	-435.	7.1	0.	---	129355.	12.1	-5489.	9.4
84	26873.	4.8	-147227.	3.6	-480.	5.1	0.	---	131515.	9.2	-5814.	32.1
85	29916.	12.2	-148189.	0.6	-525.	5.1	0.	---	137712.	6.2	-7977.	6.2
86	29719.	-8.7	-144979.	-2.2	-575.	5.4	0.	---	148625.	6.1	-8445.	6.1
87	33376.	12.6	-145434.	0.1	-630.	5.4	0.	---	158140.	5.1	-8965.	6.1
88	37327.	11.8	-145989.	0.3	-680.	5.8	0.	---	163416.	6.5	-9543.	6.2
89	41387.	10.9	-146470.	0.3	-735.	6.0	0.	---	179312.	6.5	-10125.	6.1
90	45702.	10.4	-146748.	0.2	-790.	6.5	0.	---	190783.	6.5	-10735.	6.0

FA	EBC12R09		EBC12R0FA		EBC12R09B		EBC12R10A		EBC12R10B		EBC12R11	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
78	-1.		-354.		-1224.		-8199.		-7875.		43777.	
79	-18.	2159.0	-423.	19.4	-1528.	-16.8	-4745.	-46.1	-7934.	0.7	47319.	6.1
80	-18.	0.0	-428.	1.2	-1842.	24.2	-5355.	12.9	-7954.	0.3	72674.	7.4
81	-18.	0.0	-433.	1.2	-1854.	0.0	-5427.	1.3	-7976.	0.3	73594.	7.7
82	-18.	0.0	-474.	9.5	-2421.	38.4	-8475.	17.3	-8092.	0.3	84764.	7.9
83	-18.	0.0	-567.	19.6	-3182.	35.4	-7876.	21.6	-8927.	0.3	94551.	12.1
84	-18.	0.0	-613.	8.2	-3939.	23.8	-9271.	17.7	-8557.	0.3	102031.	7.5
85	-18.	0.0	-613.	0.0	-3939.	0.0	-9337.	0.7	-8938.	0.4	107578.	7.5
86	-18.	0.0	-786.	15.1	-3735.	0.0	-9487.	0.8	-8114.	0.4	117827.	7.5
87	-18.	0.0	-786.	0.0	-3735.	0.0	-9487.	0.8	-8114.	0.4	124742.	7.5
88	-18.	0.0	-786.	0.0	-3735.	0.0	-9578.	0.7	-8181.	0.4	134375.	7.6
89	-18.	0.0	-786.	0.0	-3735.	0.0	-9671.	1.0	-8229.	0.4	146541.	7.5
90	-18.	0.0	-786.	0.0	-3735.	0.0	-9772.	1.0	-8259.	0.5	157485.	7.5

FA	EBC12R12		EBC12R13		EBC12R14		EBC12R15		EBC12R16		EBC12R17	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
78	11832.		7588.		62841.		1828.		1547.		4535.	
79	10532.	-11.4	8697.	15.8	45727.	8.8	1247.	22.2	1597.	9.8	8111.	78.8
80	10536.	0.0	8475.	9.8	47764.	8.7	1341.	7.7	1834.	9.7	7388.	15.7
81	10820.	2.7	10314.	0.9	53920.	0.5	1455.	0.3	1975.	0.8	15859.	15.7
82	11339.	8.7	61221.	0.8	58377.	8.3	1583.	0.8	2172.	8.9	12557.	15.6
83	11831.	8.6	12212.	0.8	43187.	8.2	1738.	9.2	5787.	125.7	14518.	15.4
84	12491.	5.4	13232.	0.4	61742.	8.1	1851.	7.2	6172.	3.1	14732.	15.3
85	13281.	5.8	14338.	8.4	73749.	8.0	1977.	7.7	6413.	3.4	19288.	15.3
86	14955.	6.3	15522.	8.3	71508.	7.9	2157.	8.0	6657.	3.8	22231.	15.3
87	15818.	6.8	16793.	8.2	85720.	7.8	2335.	8.3	6924.	4.0	25422.	15.3
88	16437.	7.2	18157.	8.1	92368.	7.8	2531.	8.5	7270.	4.3	29173.	15.0
89	17254.	7.2	19503.	7.9	11493.	7.7	2781.	8.8	7527.	4.2	33783.	15.0
90	18512.	7.3	21877.	7.7	107119.	7.7	2897.	7.1	7860.	4.1	31516.	15.1

FA	E12731		G8F2		G1F231		E8F2		G4F231		11F231	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
78	1819.		21288.		9392.		28912.		8126.		155.	
79	1824.	12.7	29335.	31.4	18815.	4.4	28224.	31.8	9446.	4.1	166.	7.5
80	1918.	4.4	31843.	18.8	18669.	4.5	35523.	18.8	10635.	6.2	174.	4.7
81	2053.	6.3	41281.	18.3	18368.	4.5	38643.	19.3	11644.	6.3	189.	7.9
82	2191.	6.2	48423.	18.8	12119.	4.8	42725.	18.8	11341.	6.3	201.	8.8
83	2326.	6.2	57329.	17.9	12933.	4.7	55139.	17.9	12623.	6.5	217.	8.7
84	2448.	6.1	47849.	17.8	13759.	4.3	64435.	17.8	12867.	6.1	231.	8.2
85	2617.	4.6	28119.	16.5	14623.	6.3	75141.	16.5	13595.	4.1	245.	6.3
86	2773.	4.8	31874.	16.3	15555.	6.4	87410.	16.3	14435.	6.2	261.	4.3
87	2937.	5.9	185455.	16.3	14581.	6.5	101623.	16.3	15319.	4.1	278.	4.4
88	3187.	5.8	123735.	14.2	17613.	6.5	118687.	16.2	16314.	6.4	274.	6.5
89	3298.	5.8	141818.	15.5	18734.	6.2	136391.	15.5	17293.	6.8	313.	6.8
90	3489.	5.8	113335.	15.2	19197.	6.2	157841.	15.2	18311.	4.8	312.	6.8

FA	16F21		16F231		11F21		31F231		11F21		11F231	
	ZCCL		ZCCL		ZCCL		ZCCL		ZCCL		ZCCL	
78	4935.		2318.		4922.		2272.		18451.		7819.	
79	5571.	38.1	2787.	29.7	5883.	31.2	2417.	10.8	21571.	15.7	8282.	5.7
80	6824.	22.5	3635.	18.6	7161.	23.4	2743.	18.8	24546.	13.9	8783.	6.8
81	8348.	22.2	3412.	19.2	8797.	22.8	3817.	9.8	27889.	12.7	9383.	6.8
82	10188.	22.1	3752.	19.8	10778.	22.5	3311.	9.7	31403.	12.8	1078.	8.8
83	12421.	22.8	4121.	9.8	13185.	22.3	3632.	9.7	34559.	11.5	1427.	6.1
84	14759.	19.1	4471.	9.8	15769.	19.7	3111.	8.6	38181.	11.1	11127.	6.2
85	17618.	19.8	4884.	8.8	18827.	19.3	4241.	8.6	42327.	10.2	11781.	5.9
86	20948.	18.8	5387.	8.7	22425.	19.4	4450.	8.5	44177.	9.8	12455.	5.9
87	24189.	18.8	5744.	8.4	24187.	19.8	5411.	8.5	50192.	9.5	13235.	6.8
88	21588.	18.8	6235.	8.5	31743.	18.8	5877.	8.5	55652.	9.3	14142.	6.1
89	34344.	16.2	6758.	7.9	37842.	18.7	5989.	7.7	60769.	9.2	14912.	6.2
90	37886.	14.1	7274.	7.8	43133.	16.4	6351.	7.7	65815.	8.6	15721.	5.9

FA	FC68		FC68		FC1FA		F66FA		F68FA		F10FA	
		28CL		28CL		28CL		28CL		28CL		28CL
78	219.		215.		289.		232.		235.		174.	
79	253.	15.5	246.	14.4	445.	58.7	293.	26.3	292.	27.1	192.	14.4
80	284.	12.3	275.	11.8	481.	8.8	327.	11.5	334.	11.8	229.	10.8
81	317.	11.7	304.	11.3	526.	8.8	352.	11.0	372.	11.3	244.	10.9
82	353.	11.3	319.	10.9	573.	8.8	401.	10.7	412.	11.0	271.	11.0
83	382.	11.0	374.	10.7	624.	8.9	443.	10.5	457.	10.7	301.	11.1
84	432.	10.3	414.	10.0	678.	8.7	489.	10.0	506.	10.2	330.	9.3
85	474.	9.7	453.	9.5	737.	8.7	534.	9.4	553.	9.8	360.	9.4
86	519.	9.5	495.	9.3	802.	8.8	584.	9.3	606.	9.6	390.	9.4
87	567.	9.3	540.	9.1	872.	8.8	638.	9.2	662.	9.4	422.	9.5
88	620.	9.2	587.	9.0	948.	8.7	696.	9.1	724.	9.3	473.	9.5
89	673.	8.4	639.	8.4	1031.	8.7	757.	8.8	789.	8.9	549.	7.7
90	728.	8.2	690.	8.1	1121.	8.8	821.	8.5	858.	8.6	648.	7.7

FA	P11FA		113		M173A	
		28CL		28CL		28CL
78	195.		3591680.		222.	
79	232.	19.4	3525444.	17.5	241.	17.5
80	261.	12.2	4105111.	16.4	214.	12.4
81	292.	11.9	4741257.	15.5	330.	12.0
82	324.	11.7	5437802.	14.7	348.	11.4
83	363.	11.5	6197115.	14.0	419.	11.4
84	410.	10.2	7029370.	13.2	453.	10.4
85	439.	9.9	7944310.	12.6	477.	9.9
86	482.	9.7	8956709.	12.0	544.	9.7
87	529.	9.7	10088220.	11.6	598.	9.5
88	589.	9.4	11393884.	11.2	651.	9.4
89	628.	8.3	12136524.	10.7	710.	8.4
90	679.	8.1	13411590.	10.3	749.	8.3

(32)

(2) Exogenous Variables

FA	CGI	EBC01R02		EBC01R03		EBC01R05		EBC01R08	
		IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	2331.59000	0.00000	---	-39.00000	0.0	-42.00000	---	0.00000	---
79	3261.10000	0.00000	---	-39.00000	0.0	0.00000	-100.0	0.00000	---
80	4937.40000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
81	5918.00000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
82	6223.40000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
83	7207.90000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
84	9269.43000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
85	10002.52000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
86	13335.92000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
87	14902.93000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
88	19292.40000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
89	22455.45000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---
90	24281.22000	0.00000	---	-39.00000	0.0	0.00000	---	0.00000	---

FA	EBC01R10A	EBC01R10B		EBC01R12		EBC01R13		EBC01R14	
		IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	-0.00000	0.00000	---	59.00000	---	28.00000	---	0.00000	---
79	-0.00000	0.0	0.00000	159.00000	200.0	53.00000	87.3	0.00000	---
80	-0.00000	0.0	0.00000	227.00000	31.3	41.00000	-22.6	0.00000	---
81	-0.00000	0.0	0.00000	297.00000	24.4	31.00000	-24.4	0.00000	---
82	-0.00000	0.0	0.00000	407.00000	41.8	22.00000	-29.0	0.00000	---
83	-0.00000	0.0	0.00000	457.00000	11.3	22.00000	0.0	0.00000	---
84	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	-81.8	0.00000	---
85	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---
86	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---
87	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---
88	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---
89	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---
90	-0.00000	0.0	0.00000	453.00000	0.0	4.00000	0.0	0.00000	---

FA	EBC02R16	EBC02R01		EBC02R02		EBC02R05		EBC02R07A	
		IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	27.00000	119578.00000	---	8224.00000	---	-552.00000	---	-32025.00000	---
79	30.00000	123288.00000	3.0	8224.00000	0.0	0.00000	-100.0	-33270.00000	3.9
80	39.00000	118109.00000	-3.7	8224.00000	0.0	0.00000	---	-33670.00000	1.2
81	39.00000	124189.00000	4.6	8224.00000	0.0	0.00000	---	-34070.00000	1.2
82	39.00000	130000.00000	4.8	8224.00000	0.0	0.00000	---	-37320.00000	9.5
83	39.00000	131000.00000	1.4	12418.00000	100.0	0.00000	---	-44535.00000	19.6
84	39.00000	133000.00000	0.9	12418.00000	0.0	0.00000	---	-49290.00000	8.2
85	39.00000	134189.00000	-0.9	12418.00000	0.0	0.00000	---	-48290.00000	0.0
86	39.00000	135000.00000	0.6	12418.00000	0.0	0.00000	---	-55600.00000	15.1
87	39.00000	135500.00000	0.6	12418.00000	0.0	0.00000	---	-55400.00000	0.0
88	39.00000	136000.00000	0.6	12418.00000	0.0	0.00000	---	-55400.00000	0.0
89	39.00000	137000.00000	0.0	12418.00000	0.0	0.00000	---	-55400.00000	0.0
90	39.00000	138000.00000	0.0	12418.00000	0.0	0.00000	---	-55400.00000	0.0

FA	EBC02R18A	EBC02R18B		EBC02R03		EBC02R14		EBC02R15	
		IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	-252.00000	0.00000	---	0.00000	---	-1.00000	---	-122.00000	---
79	-252.00000	0.0	0.00000	0.00000	---	0.00000	-100.0	0.00000	-100.0
80	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
81	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
82	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
83	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
84	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
85	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
86	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
87	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
88	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
89	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---
90	-252.00000	0.0	0.00000	0.00000	---	0.00000	---	0.00000	---

FA	EBC6410A	EBC6410B	EBC6410C	EBC6410D	EBC6410E	EBC6410F
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
76	0.00000	0.00000	0.00000	0.00000	265.00000	-201.00000
77	0.00000	0.00000	0.00000	0.00000	300.00000	-235.00000
80	0.00000	0.00000	0.00000	0.00000	300.00000	-270.00000
81	0.00000	0.00000	0.00000	0.00000	300.00000	-310.00000
82	0.00000	0.00000	0.00000	0.00000	300.00000	-350.00000
83	0.00000	0.00000	0.00000	0.00000	300.00000	-410.00000
84	0.00000	0.00000	0.00000	0.00000	300.00000	-455.00000
85	0.00000	0.00000	0.00000	0.00000	300.00000	-500.00000
86	0.00000	0.00000	0.00000	0.00000	300.00000	-550.00000
87	0.00000	0.00000	0.00000	0.00000	300.00000	-600.00000
88	0.00000	0.00000	0.00000	0.00000	300.00000	-650.00000
89	0.00000	0.00000	0.00000	0.00000	300.00000	-700.00000
90	0.00000	0.00000	0.00000	0.00000	300.00000	-750.00000

FA	EBC6510A	EBC6510B	EBC6510C	EBC6510D	EBC6510E	EBC6510F
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
76	0.00000	0.00000	0.00000	0.00000	-65.00000	0.00000
77	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
80	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
81	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
82	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
83	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
84	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
85	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
86	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
87	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
88	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
89	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
90	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

FA	EBC6610A	EBC6610B	EBC6610C	EBC6610D	EBC6610E	EBC6610F
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
76	0.00000	0.00000	-12.00000	0.00000	377.00000	-243.00000
77	0.00000	0.00000	-15.00000	25.0	0.00000	-257.00000
80	0.00000	0.00000	-15.00000	0.0	0.00000	-270.00000
81	0.00000	0.00000	-15.00000	0.0	0.00000	-282.00000
82	0.00000	0.00000	-15.00000	0.0	0.00000	-293.00000
83	0.00000	0.00000	-15.00000	0.0	0.00000	-305.00000
84	0.00000	0.00000	-15.00000	0.0	0.00000	-318.00000
85	0.00000	0.00000	-15.00000	0.0	0.00000	-331.00000
86	0.00000	0.00000	-15.00000	0.0	0.00000	-343.00000
87	0.00000	0.00000	-15.00000	0.0	0.00000	-355.00000
88	0.00000	0.00000	-15.00000	0.0	0.00000	-367.00000
89	0.00000	0.00000	-15.00000	0.0	0.00000	-379.00000
90	0.00000	0.00000	-15.00000	0.0	0.00000	-391.00000

FA	EBC6710A	EBC6710B	EBC6710C	EBC6710D	EBC6710E	EBC6710F
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
76	-2.00000	0.00000	0.00000	0.00000	0.00000	-50.00000
77	-25.00000	237.1	0.00000	0.00000	0.00000	-40.00000
80	-25.00000	0.0	0.00000	0.00000	0.00000	-65.00000
81	-25.00000	0.0	0.00000	0.00000	0.00000	-65.00000
82	-25.00000	0.0	0.00000	0.00000	0.00000	-65.00000
83	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
84	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
85	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
86	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
87	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
88	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
89	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000
90	-25.00000	0.0	0.00000	0.00000	0.00000	-70.00000

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FA	ESC07R05	ESC07R07	ESC07R08	ESC07R10A	ESC07R10B
	ZKCL	ZKCL	ZKCL	ZKCL	ZKCL
78	38.00000	-47.00000	-18.00000	0.00000	0.00000
79	0.00000	-47.00000	0.0	0.00000	0.00000
80	0.00000	-47.00000	0.0	0.00000	0.00000
81	0.00000	-47.00000	0.0	0.00000	0.00000
82	0.00000	-47.00000	0.0	0.00000	0.00000
83	0.00000	-47.00000	0.0	0.00000	0.00000
84	0.00000	-47.00000	0.0	0.00000	0.00000
85	0.00000	-47.00000	0.0	0.00000	0.00000
86	0.00000	-47.00000	0.0	0.00000	0.00000
87	0.00000	-47.00000	0.0	0.00000	0.00000
88	0.00000	-47.00000	0.0	0.00000	0.00000
89	0.00000	-47.00000	0.0	0.00000	0.00000
90	0.00000	-47.00000	0.0	0.00000	0.00000

FA	ESC07R13	ESC07R14	ESC07R15A	ESC07R15B	ESC07R15C
	ZKCL	ZKCL	ZKCL	ZKCL	ZKCL
78	147.00000	0.00000	0.00000	0.00000	0.00000
79	189.00000	7.0	0.00000	0.00000	0.00000
80	189.00000	0.0	0.00000	0.00000	0.00000
81	189.00000	0.0	0.00000	0.00000	0.00000
82	189.00000	0.0	0.00000	0.00000	0.00000
83	189.00000	0.0	0.00000	0.00000	0.00000
84	189.00000	0.0	0.00000	0.00000	0.00000
85	189.00000	0.0	0.00000	0.00000	0.00000
86	189.00000	0.0	0.00000	0.00000	0.00000
87	189.00000	0.0	0.00000	0.00000	0.00000
88	189.00000	0.0	0.00000	0.00000	0.00000
89	189.00000	0.0	0.00000	0.00000	0.00000
90	189.00000	0.0	0.00000	0.00000	0.00000

FA	ESC08R04	ESC08R05	ESC08R07	ESC08R08	ESC08R10A
	ZKCL	ZKCL	ZKCL	ZKCL	ZKCL
78	-337.00000	-111.00000	-438.00000	0.00000	0.00000
79	-340.00000	0.0	-769.00000	0.00000	0.00000
80	-340.00000	0.0	-775.00000	0.00000	0.00000
81	-340.00000	0.0	-850.00000	0.00000	0.00000
82	-340.00000	0.0	-935.00000	0.00000	0.00000
83	-340.00000	0.0	-1000.00000	0.00000	0.00000
84	-340.00000	0.0	-1085.00000	0.00000	0.00000
85	-340.00000	0.0	-1085.00000	0.00000	0.00000
86	-340.00000	0.0	-1085.00000	0.00000	0.00000
87	-340.00000	0.0	-1085.00000	0.00000	0.00000
88	-340.00000	0.0	-1085.00000	0.00000	0.00000
89	-340.00000	0.0	-1085.00000	0.00000	0.00000
90	-340.00000	0.0	-1085.00000	0.00000	0.00000

FA	ESC08R10B	ESC08R13	ESC08R14	ESC08R15	ESC08R16
	ZKCL	ZKCL	ZKCL	ZKCL	ZKCL
78	0.00000	434.00000	0.00000	51.00000	0.00000
79	0.00000	450.00000	3.2	57.24000	0.00000
80	0.00000	450.00000	0.0	49.87000	0.00000
81	0.00000	450.00000	0.0	49.31000	0.00000
82	0.00000	450.00000	0.0	49.17376	0.00000
83	0.00000	450.00000	0.0	72.24000	0.00000
84	0.00000	450.00000	0.0	76.40000	0.00000
85	0.00000	450.00000	0.0	81.17000	0.00000
86	0.00000	450.00000	0.0	86.00000	0.00000
87	0.00000	450.00000	0.0	91.20000	0.00000
88	0.00000	450.00000	0.0	98.76000	0.00000
89	0.00000	450.00000	0.0	102.50000	0.00000
90	0.00000	450.00000	0.0	109.45000	0.00000

FA	EDC07R05	EDC07R08	EDC07R09	EDC07R10	EDC07R11	EDC07R12
		ZRCL	ZRCL	ZRCL	ZRCL	ZRCL
70	49.00000	1738.00000	0.00000	0.00000	0.00000	0.00000
71	0.00000	2000.00000	3.2	0.00000	0.00000	0.00000
80	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
81	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
82	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
83	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
84	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
85	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
86	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
87	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
88	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
89	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000
90	0.00000	2000.00000	0.0	0.00000	0.00000	0.00000

FA	EDC10R16	EDC10R02	EDC10R05	EDC10R08	EDC10R10	EDC10R11
		ZRCL	ZRCL	ZRCL	ZRCL	ZRCL
70	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
71	0.00000	0.00000	0.0	0.00000	674.00000	0.00000
80	0.00000	0.00000	0.0	0.00000	508.00000	25.0
81	0.00000	0.00000	0.0	0.00000	650.00000	30.0
82	0.00000	0.00000	0.0	0.00000	750.00000	15.1
83	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
84	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
85	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
86	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
87	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
88	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
89	3420.00000	0.00000	0.0	0.00000	750.00000	0.0
90	3420.00000	0.00000	0.0	0.00000	750.00000	0.0

FA	EDC10R03	EDC10R02	EDC10R05	EDC10R10	EDC10R11	EDC10R12
		ZRCL	ZRCL	ZRCL	ZRCL	ZRCL
70	0.00000	77.00000	0.00000	0.00000	0.00000	0.00000
71	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
80	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
81	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
82	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
83	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
84	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
85	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
86	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
87	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
88	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
89	0.00000	77.00000	0.0	0.00000	0.00000	0.00000
90	0.00000	77.00000	0.0	0.00000	0.00000	0.00000

FA	EDC11R08	EDC11R10	EDC11R11	EDC11R12	EDC11R13	EDC11R14
		ZRCL	ZRCL	ZRCL	ZRCL	ZRCL
70	-11889.00000	-7714.00000	7553.00000	0.00000	0.00000	0.00000
71	-13200.00000	-7710.00000	81100.00000	10.0	0.00000	0.00000
80	-10117.00000	-7710.00000	83929.00000	24.0	0.00000	0.00000
81	-10541.00000	-7710.00000	13155.00000	0.2	0.00000	0.00000
82	-24200.00000	-7710.00000	19035.00000	36.1	0.00000	0.00000
83	-31022.00000	-7710.00000	25070.00000	34.0	0.00000	0.00000
84	-37387.00000	-7710.00000	32700.00000	26.0	0.00000	0.00000
85	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000
86	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000
87	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000
88	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000
89	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000
90	-37387.00000	-7710.00000	32700.00000	0.0	0.00000	0.00000



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FA	ESC11819A		ESC11819B		ESC11819C		ESC11819D		ESC11819E	
		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL
78	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
79	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
80	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
81	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
82	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
83	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
84	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
85	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
86	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
87	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
88	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
89	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	
90	0.00000		-34.00000	0.0	0.00000		-7.00000	0.0	0.00000	

FA	ESC12807		ESC12807		ESC12813		ESC12816A		ESC12816B	
		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL
78	0.00000		-340.00000	19.5	0.00000		0.00000		0.00000	
79	0.00000		-340.00000	19.5	0.00000		0.00000		0.00000	
80	0.00000		-340.00000	19.5	0.00000		0.00000		0.00000	
81	0.00000		-323.00000	2.0	0.00000		0.00000		0.00000	
82	0.00000		-323.00000	2.0	0.00000		0.00000		0.00000	
83	0.00000		-355.00000	5.0	0.00000		0.00000		0.00000	
84	0.00000		-1119.00000	0.5	0.00000		0.00000		0.00000	
85	0.00000		-1119.00000	0.5	0.00000		0.00000		0.00000	
86	0.00000		-1119.00000	0.5	0.00000		0.00000		0.00000	
87	0.00000		-1119.00000	0.5	0.00000		0.00000		0.00000	
88	0.00000		-1119.00000	0.5	0.00000		0.00000		0.00000	
89	0.00000		-1125.00000	0.5	0.00000		0.00000		0.00000	
90	0.00000		-1130.00000	0.5	0.00000		0.00000		0.00000	

FA	ELC07813		ELC07815		ELC07815		ELC07815		ELC07812	
		ZKCL		ZKCL		ZKCL		ZKCL		ZKCL
78	34.00000		0.00000		2.02417		0.90193		3.41718	
79	34.00000	0.0	1.00000		1.00000	-61.9	1.00000	-53.5	1.50000	-54.0
80	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
81	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
82	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
83	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
84	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
85	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
86	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
87	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
88	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
89	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0
90	34.00000	0.0	1.00000	0.0	1.00000	0.0	1.00000	0.0	1.50000	0.0

FA	ELC12816		ELC12812		ELC12812	
		ZKCL		ZKCL		ZKCL
78	11.33524		2.15453		0.00000	
79	1.00000	-11.2	1.50000	-10.4	1.00000	
80	1.00000	0.0	1.50000	0.0	1.00000	4.0
81	1.00000	0.0	1.50000	0.0	1.00000	0.0
82	1.00000	0.0	1.50000	0.0	1.00000	0.0
83	1.00000	0.0	1.50000	0.0	1.00000	0.0
84	1.00000	0.0	1.50000	0.0	1.00000	0.0
85	1.00000	0.0	1.50000	0.0	1.00000	0.0
86	1.00000	0.0	1.50000	0.0	1.00000	0.0
87	1.00000	0.0	1.50000	0.0	1.00000	0.0
88	1.00000	0.0	1.50000	0.0	1.00000	0.0
89	1.00000	0.0	1.50000	0.0	1.00000	0.0
90	1.00000	0.0	1.50000	0.0	1.00000	0.0

FA	ELC14R16	ELC14R16	ELC14R16	ELC14R16	ELC14R16	ELC14R16	ELC14R16	ELC14R16	ELC14R16
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	0.31135		2.77895		1.01510		-6.18586		25.09000
79	1.50000	-02.0	1.00000	-41.0	1.00000	-75.3	-1.50000	-75.0	27.00000
80	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	29.10000
81	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	31.00000
82	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	34.01222
83	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	36.73370
84	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	39.07186
85	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	42.00000
86	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	46.27326
87	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	49.00000
88	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	53.00000
89	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	58.20000
90	1.50000	0.0	1.00000	0.0	1.00000	0.0	-1.50000	0.0	62.00000

FA	PAG6731	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	107.49550		12.70000		57000.00000		18.00000		141.57100
79	174.00000	5.0	25.00000	10.0	41000.00000	3.2	17.00000	0.0	141.00000
80	206.71370	5.0	22.00000	10.0	57000.00000	-3.7	29.00000	0.0	147.00000
81	217.00000	5.0	30.70000	10.0	62000.00000	1.6	22.00000	0.0	151.00000
82	227.00000	5.0	33.00000	10.0	45000.00000	1.0	24.00000	0.0	154.00000
83	239.00000	5.0	37.00000	10.0	43000.00000	1.0	26.00000	0.0	157.00000
84	240.00000	4.0	40.00000	10.0	45000.00000	0.9	28.00000	0.0	161.00000
85	250.00000	4.0	44.00000	10.0	47000.00000	0.9	30.00000	0.0	166.00000
86	260.00000	0.0	47.00000	10.0	47000.00000	0.6	33.00000	0.0	169.00000
87	270.00000	0.0	54.00000	10.0	47000.00000	0.6	35.00000	0.0	172.00000
88	280.00000	3.0	57.00000	10.0	43000.00000	0.6	38.00000	0.0	175.00000
89	278.00000	3.0	65.00000	10.0	47000.00000	0.6	41.00000	0.0	179.00000
90	305.00000	3.0	72.00000	10.0	47000.00000	0.4	45.00000	0.0	183.00000

FA	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	76.00000		123.00000		1000.00000		0.00000		0.00000
79	82.00000	0.0	137.00000	12.0	1050.00000	5.0	0.00000	1.0	0.00000
80	89.00000	0.0	151.00000	12.0	1100.00000	5.0	0.00000	0.0	0.00000
81	96.00000	0.0	172.00000	12.0	1100.00000	5.0	0.00000	0.0	0.00000
82	100.00000	0.0	193.00000	12.0	1220.00000	5.0	0.00000	0.0	0.00000
83	112.00000	0.0	214.00000	12.0	1200.00000	5.0	0.00000	0.0	0.00000
84	121.00000	0.0	239.00000	10.0	1350.00000	5.0	0.00000	0.0	0.00000
85	131.00000	0.0	262.00000	10.0	1420.00000	5.0	0.00000	0.0	0.00000
86	141.00000	0.0	289.00000	10.0	1490.00000	5.0	0.00000	0.0	0.00000
87	153.00000	0.0	317.00000	10.0	1540.00000	5.0	0.00000	0.0	0.00000
88	165.00000	0.0	349.00000	10.0	1610.00000	5.0	0.00000	0.0	0.00000
89	170.00000	0.0	377.00000	0.0	1720.00000	5.0	0.00000	0.0	0.00000
90	193.00000	0.0	407.00000	0.0	1810.00000	5.0	0.00000	0.0	0.00000

FA	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB	PEROILB
	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL	IRCL
78	0.00000		0.00000		0.00000		0.00000		0.00000
79	0.00000	1.0	0.00000	-0.0	0.00000	-0.3	0.00000	-13.0	0.00000
80	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
81	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
82	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
83	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
84	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
85	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
86	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
87	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
88	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
89	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000
90	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000	0.0	0.00000

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FA	ZC11A009		ZC103R09		ZC11A119A		ZC11A00E		ZC11A110	
		ZFCL		ZFCL		ZFCL		ZFCL		ZFCL
76	0.00100		0.32800		-0.22820		0.25346		0.13787	
77	0.00100	0.0	0.32800	12.7	-0.15400	-46.5	0.30000	10.0	0.15000	0.0
80	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
81	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
82	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
83	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
84	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
85	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
86	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
87	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
88	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
89	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0
90	0.00100	0.0	0.32800	0.0	-0.15400	0.0	0.30000	0.0	0.15000	0.0

Presented below is an energy balance table prepared based on actual values over 8-year period from 1971 to 1978 and forecast values of 1980, 1983, 1988 and 1990.

Year	...	...	...	...	...	...	...	...	...
1971	...	...	...	...	...	...	...	...	...
1972	...	...	...	...	...	...	...	...	...
1973	...	...	...	...	...	...	...	...	...
1974	...	...	...	...	...	...	...	...	...
1975	...	...	...	...	...	...	...	...	...
1976	...	...	...	...	...	...	...	...	...
1977	...	...	...	...	...	...	...	...	...
1978	...	...	...	...	...	...	...	...	...
1980	...	...	...	...	...	...	...	...	...
1983	...	...	...	...	...	...	...	...	...
1988	...	...	...	...	...	...	...	...	...
1990	...	...	...	...	...	...	...	...	...

8-6-3 エネルギー・バランス表一覧

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(1) 実績 (1971年~1978年)

FAC 71 3	ERC01	ERC02	ERC03	ERC04	ERC05	ERC06	ERC07	ERC07A	ERC07B	ERC08	ERC09	ERC10	ERC10A	ERC10B	ERC11	ERC11A	ERC11B	ERC11C	ERC11D	ERC12	ERC13	ERC14	ERC15	ERC16	ERC17
001	181	65249	1329	1	0	1842	10	10	0	255	0	0	0	0	4592	4592				0	419		78455	37576	109231
002	0	570	1329	1	0	1842	10	10	0	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
003	0	-13133	-2539	-57	0	0	0	0	0	-1105	0	-4294	0	-4284	0								-55552	1878	-55552
004	0	0	-332	0	0	0	0	0	0	-75	0	-5	-70	-242	0								-337	22	-337
005	-18	89	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0
006	136	12838	-219	-57	0	1842	10	10	0	-131	0	-4214	-1	-4284	4572	4592			0	0	119	1427	17073	37576	54597
007	-45	0	-722	0	0	0	0	0	0	-430	0	-579	-39	-154	0					0	-673	411	-1944	0	-1851
008	0	0	-17	0	0	0	0	0	0	-43	0	-1	-2	0	0					0	0	0	0	0	0
009	0	-18719	17389	2426	216	3950	2272	1556	161	3175	0	4214	12	4282	0					0	0	0	0	0	0
010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0
011	-23	0	0	0	0	0	0	0	0	0	0	0	0	0	-1345	-1345			0	0	0	-27	-1410	0	-1410
012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2112	-2112			0	0	0	-69	-2972	0	-2972
013	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0
014	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0
015	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0
016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0



(2) 予 測 ( 1 9 8 0 年, 1 9 8 3 年, 1 9 8 8 年, 1 9 9 0 年)

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予 測	ERC01	ERC02	ERC03	ERC04	ERC05	ERC06	ERC07	ERC07A	ERC07B	ERC08	ERC09	ERC10	ERC10A	ERC10B	ERC11	ERC11A	ERC11B	ERC11C	ERC11D	ERC12	ERC13	ERC14	ERC15	ERC16	ERC17
ERC01	710.	110610.	0.	0.	1134.	3076.	4514.	3158.	125.	0.	0.	0.	0.	0.	33766.	33766.	0.	0.	0.	0.	1817.	155109.	62551.	197452.	
ERC02	0.	6224.	0.	0.	0.	0.	0.	0.	0.	-2247.	-2757.	-11249.	-614.	-16625.	-13811.	0.	0.	0.	0.	0.	0.	16220.	0.	16220.	
ERC03	-39.	-16592.	-15370.	0.	-270.	0.	-81.	-15.	-45.	-349.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-120221.	-120221.	-320221.	-320221.	
ERC04	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC05	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC06	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC07	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC07A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC07B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC08	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC09	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC10A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC10B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC11A	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC11B	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC11C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC11D	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ERC17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The records should be kept in a secure and accessible location, and should be updated regularly.

2. The second part of the document outlines the procedures for reconciling the bank statements with the company's records. This involves comparing the bank's records of deposits and withdrawals with the company's own records to ensure that they match. Any discrepancies should be investigated and resolved promptly.

3. The third part of the document describes the process of preparing the financial statements. This includes calculating the net income or loss for the period, and determining the ending balances for the assets and liabilities. The statements should be prepared in accordance with the applicable accounting standards and should be reviewed by management before being presented to the board of directors.

4. The fourth part of the document discusses the importance of disclosing all material information to the shareholders. This includes providing a clear and concise explanation of the company's financial performance, and of any risks or uncertainties that may affect the company's future prospects. The disclosures should be made in a timely and transparent manner, and should be subject to the oversight of the board of directors.

5. The fifth part of the document outlines the procedures for distributing the financial statements to the shareholders. This involves providing each shareholder with a copy of the statements, and ensuring that they are received in a timely and secure manner. The company should also maintain a record of the distribution of the statements, and should be prepared to provide a copy to any shareholder who requests one.

6. The sixth part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The records should be kept in a secure and accessible location, and should be updated regularly.

7. The seventh part of the document outlines the procedures for reconciling the bank statements with the company's records. This involves comparing the bank's records of deposits and withdrawals with the company's own records to ensure that they match. Any discrepancies should be investigated and resolved promptly.

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