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A Study on Model Reference Adaptive Control in Economic Development (VIII)

—Model Reference Adaptive Interregional Migration in Indonesia—

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Abstract

The main aim of this paper is to show that target of interregional migration can be best achieved, in which the difference between actual value and target can be eliminated.

For that purpose, we introduce a model called Model Reference Adaptive System (MRAS), though less in publication, MRAS however may be regarded as an obvious candidate to tackle the common problem inherent in planning.

Key Words: Model Reference Adaptive System, Model Reference Adaptive Interregional Migration, Moore-Penrose inverse matrix.

1. Introduction

About interregional migration, Foot suggests that regional scientists, economists, demographers, etc., have been recognize that interregional migration plays a significant role in the interregional linkage and economic adjustment. (6) p. 119. Regional economic disparities, according to Foot, can be reduced by the movement of people among regions. Since interregional migration can be regarded also as a decreasing the number of population in region of origin and inversely, increasing the number of population in region of destination, therefore the movement of population might be also considered as a source affecting the population density, amenities, etc.

In some countries, more often in developing countries, one of population issues is that local sentiments is found to be relatively strong. Development program is, sometimes, hampered by such local sentiments leading to the crisis in social aspects. In this relation, interregional migration, via assimilation or social contact, may be expected as an indirect tool to alleviate such local sentiments.

It has been proven in several migration studies that decision of persons to migrate is not merely influenced by distance and population, but several economic variables and non-economic variables actually play a vital role in regarding decision of persons to migrate. As interregional migration can also be regarded as a source influence the number of regional population, accordingly estimation on annual of interregional migration seems necessary. Using common migration studies, an effort

to estimate annual interregional migration will be difficult because almost all studies paid less attention to the role of control parameter in the system of equations.

The main purpose of this paper is to show that target of interregional migration can be implemented using a model called Model Reference Adaptive System. Due to the lack of the application of this model into economic development, the reader may refer to (13), (29), (30), (31), (17), (18), (19). Moreover, expected interregional migration can be modified by changing the control input, one of important parts in the system. In broaden sense, this study is hoped can fulfill the lack of the role of control in migration studies.

Following our previous paper, Indonesia is divided into six regions such as: (1) Sumatera; (2) Java; (3) Kalimantan; (4) Sulawesi; (5) Bali, Nusa Tenggara Barat, Nusa Tenggara Timur; (6) Maluku, Irian Jaya. (1)

The following section of the paper presents regional population problem in Indonesia followed by current policies of population. Section 4 provides a brief discussion of the model and some problems related to it, and the analysis of empirical results are presented in the subsequent section. Brief summary of the chief findings is presented in the last section.

2. Regional Population Problems in Indonesia

Though Higgins considered Indonesia as a rich country in natural resources as a matter of fact however, the deposit of natural resources vary among regions (10) p. 50 There is a region with abundant in natural resources but there is also a region having a very less of natural resources; there is a region having fertile of soil but one may find that in other regions the soil is not suited for growing crops even.

In Indonesian case, the correlation between natural resources and population was not clearly prevail. Say region II for example, the deposit of natural resources is quite less when compared to other regions, region II however was occupied by 60 percent of total population. In contrast, region I has been regarded as the richest region in natural resources however, the population was about 19 percent in 1980. Land area, as is sometimes connected to amenities, does not seem give a great influence also to the concentration of population. This is based on the fact that the share of population in the biggest region was the lowest among regions. Inversely, the share of population in the small region was the highest among regions. It is necessary to note here that the maldistribution of Indonesian population is not a result of short term period, rather it was a result of accumulative process since several centuries ago.

2. 1. *Historical Background*

It is almost impossible to clarify the situation of Indonesian population before colonial period. The main caused is that there is no authentic information on hand, even in the government agencies. Soon after Dutch arrived in Infonesia in the beginning of seventeenth century however, the population movement in some places had increased, then. It was caused mostly by the highly increased the level

of economic activity. It should be noted here that the major purpose of Dutch arriving in Indonesia is to co-operate in trading, in particular spices trading. Though only trading, Dutch gave a great impact to the movement of population. The flow of population at that time were usually concentrated in port cities and estate crops areas, etc. In other words, the higher the level of economic activity the higher also the people will move. As Dutch changed the purpose, i. e. from trading to colonizing, the impact on the population movement have continued to increase. Colonial regime seemed developed difference region for difference purposes. Region II for example, during colonial regime had been developed as an administrative centre, industries, etc. Due to the gap of development level between region II and other regions, it is not surprising that population movement was dominated by the movement from region II to other regions, and vice versa. An important point revealed during colonial regime is that, Dutch was aware that the distribution of population was concentrated mainly in region II. This indicated that the maldistribution of Indonesian population had long been existed, indeed. The fertility of land in region II might be regarded as the most responsible factor influence the concentration of population in region II. In traditional society, the economic activity should be connected merely to the agricultural activity. In order to get the high harvest of crops, fertile land being the sole consideration in growing crops. In this line, the relationship between fertility of land, or economic activity in broaden sense, and concentration of population, i. e. population movement, seems exist indeed. Since the pattern of economic activity itself changes over time, one may expect that secondary and tertiary sector will have pull factor stronger than agricultural activity.

2. 2. *Current Population Problems*

The three characteristics of Indonesian population are: (1) high of annual growth rate of population; (2) the imbalance of population distribution among regions; (3) the structure of population is termed as young population structure.

Since independence, census of population in Indonesia was conducted only three times, that is 1961, 1971, and 1980. (see Table 1). Accordingly we are at a loss to deeply explore the behaviour of population growth for a long period. Regardless the measurement of development, there is a supposition says that the rate of population growth will be at a low level in the beginning of development, highly increase in the middle of development and will gradually decrease as the development reaches at a maturity level. Allowing the rate of population growth to automatically decrease as the development strives to maturity level is likely an inferior policy in present days. Moreover, an old parable which says that the high number of population is an advantage source for development and security as well is questionable in recent situation. Rather, the high number of population tends to be a great burden of development. Assume that annual rate of population growth being constant over time, the number of Indonesian population will double during three decades. In this line, any efforts in the direction to make the future life better is indeed difficult, particularly within fiscal limitations.

The second characteristic relates to the population density. A formula to

Table 1. Regional Population 1961, 1971, 1980

(unit : 1000 person)

Region	1961	(%)	1971	(%)	1980	(%)
I	15,739.4	16.2	20,808·1	17.4	28,016.2	18.9
II	63,059.7	65.0	76,086.3	63.8	91,260.5	61.9
III	4,010.5	4.2	5,154.8	4.3	6,723.2	4.5
IV	7,079.4	7.3	8,526.9	7.2	10,409.5	7.1
V	5,557.7	5.7	6,619.1	5.6	8,487.2	5.8
VI	1,547.9	1.6	2,013.0	1.7	2,584,9	1.8
Total	97,085.6	100.0	119,208.2	100.0	147,490.5	100.0

source : Statistical Yearbook of Indonesia, 1983

measure the relative dispersion of regional population density may be written as follows.

$$e = \frac{\sqrt{\sum_{i=1}^{6}(D_i - \bar{D}_n)^2 P_i / P_n}}{\bar{D}_n}$$

where,

D_i : population density in region i
$\bar{D}_n$: national population density
P_i : population in region i
P_n : national population.

The value of e, as reported in Table 2, clearly shows that regional population is significantly imbalance. Bringing the past trend to the future, it is worried region II will be an island having the highest of population density in the world. But that is not the case.

A cautious attention should be paid to the fact that land required for housing, roads, infrastructure, etc., will increase as the number of population rises, as well as economic activity. Despite having the most fertile soil, irrigation and other

Table 2. Regional Population Density 1961, 1971, 1980

Region	Area (km²)	Population Density/km² 1961	1971	1980
I	473,606	33	44	59
II	132,187	476	576	690
III	539,460	8	10	12
IV	189,216	38	45	55
V	88,488	63	75	96
VI	496,486	3	4	5
National	1,919,443	41	62	77
Coefficient of variation (e)		6.718	6.628	6.268

source : Statistical Yearbook of Indonesia, 1983

infrastructure are well available in region II. Because of this, region II is regarded as the most important producer of main staple food in Indonesia. In the other hand however, efforts to increase land for cultivation in region II will be very difficult, indeed. Accordingly, within limited area such as region II, the increasing land required for housing, roads, etc., should be matched by gradually decrease the stock of fertile land for cultivation. Due to the program by government which aim at bringing the supply of rice equals to its demand, alternatively, efforts to increase production of rice can be done mainly by opening new land for cultivation in other potential regions. Since the quality of land in other regions is less fertile compared to region II, and the fact that infrastructure in other regions is not well available, accordingly efforts to open new land in other regions will require a huge investment.

Second concern relates to the fact that around 48 percent of employment in region II is still engaged in agricultural sector. One may expect that reducing land for cultivation in region II will extremely be followed by increasing the number of landless. Due to the limited demand for labour in agricultural sector, if not reduce, one may conclude at the moment that the number of unemployment in rural area will remarkably increase, resulting to the high rate of urbanization, with some related problems.

The third characteristic is relatively more apprehensive than the two previous characters. The Census of Population of 1980 clearly indicates that in the next decade, the number of population having an age between 10 to 20 will be approximately 40 million. Ideally, the part of 40 million whose seeking a job will be immediately absorbed by demand for labour while the remainder will enter the school, so that the number of unemployment will nil. Unfortunately however, that rosy dream happens only in paradise. The real situation indicates that, the major part of that 40 million will not enter to the school due to the following reasons. Firstly, the capacity of formal school is limited. A more miserable situation has been happening in rural area due to the high gap between school available and those who want to enter the school. Secondly, it is common feature that the level of education will follow the shape of pyramid. At the bottom and the major share of school available is elementary school while at the top and the least of the school available is academies or universities. It reflects the situation where the level of competition will increase associated to the level of education. As a result, university is considered as a luxury commodity, where an ordinary people will likely unable to enter it. The phenomena above clearly indicates that job market will be flooded by young job seekers, mostly with low of education level. In the other hand, demand for labour, or action relating to it, is strictly limited due to financial constraint. To make the situation worse, in recent years Indonesian economy has been suffering a remarkable decrease the rate of income growth as the price of oil falls. As a consequence, rate of employment absorption will also decrease resulting to the high rate of unemployment. As it is well known, agricultural sector is usually considered as a buffer zone to prevent urbanization. Due to the gradually decrease the area for cultivation in region II, the highest rate of un-employment might be experienced by region II.

2. 3. *Past Migration*

As a legacy of colonial regime, region II could boast of their advance in facilities compared to other regions. Since capital of the country is also located in region II, it is not surprising that facilities in region II is becoming a step ahead of the remainder regions. But this advantage being the subject of people from other regions to inflow to region II. Say education for example. Though the data is not on hand however, it is believed that the number of students from other regions in region II is in great numbers. In the meanwhile, the number of students from region II who are studying in other regions is quite less indeed. It seems that the main caused is not the gap in the number of schools between region II and other regions, rather, there is presumption that the quality of schools in region II were higher than other regions. (see Table 3) So, improvement on education sector in other regions may be expected as one of several actions to deter inflow migration in region II.

Migration in Indonesia can be said to be an old phenomenon, relating to three races of Indonesia. The three races can be broadly classified as Javanese, Minangkabaus and Bugis. The migration of Javanese has been done under colonialization regime as the realization of colonial's policy called "Three Policies" (education, irrigation, migration). The Minangkabaus race had a special features for migration. The migration in this community can not be said to be cultural, but there was a tradition prevailing in the community in which the head of the family used to migrate to other islands in pursuit of business or work leaving behind the family. Eventually, in the absence of male head of the family, the female used to become the head of the family until the male returns back. The migration of the member was frequent therefore female used to be head of the family for almost the entire life. This system is classified as Matrilineal system and actually it was prevailing only with the Minangkabaus community. According to Naim, there was a cause and effect between migration and Matrilineal system in Minangkabaus community. (22) On the contrary, the Bugis race was basically a trading community. As a

Table 3. Number of State Schoole by Region for 1981 (unit: school)

Region	A	B	C
I	2,806	732	9
II	6,169	1,910	18
III	699	165	4
IV	983	298	4
V	756	215	3
VI	233	58	2
Total	11,637	3,378	40

Source: Department of Education and Culture, 1984, Indonesia
note:
A: general junior high school, excluding vocational schools and private school
B: general senior high school, excluding vocational schools and private school
C: universities, excluding academies and private university

rule rather exception, the Bugis race used to migrate to other areas and form a cluster among themselves and carry on with trade. This community were always engaged in trade in all the islands of Indonesia.

3. Current Policies on Population

3. 1. *Family Planning*

Recognizing that rapid population growth will be a hindrance in attaining the goal of development, the government of Indonesia undertook a program of family planning since the first Five Year Development Plan (1969-1974). This program was introduced only in region II and some parts of region V. Since then, from the period of 1974 to 1984, the program has been extended to the whole country without exception. In the first of its introductory, the program was hampered by some problems. The conception which says that fortune or welfare of parents will be higher as the number of children more was deeply rooted in the major part of Indonesian population, and being the main problem in introducing the program. Beside persuasive efforts and some other efforts, the grave effort of government in undertaking the family planning program can be represented in the highly increase the number of family planning clinics. (see Table 4)

In recent years, expectation of the rate of population growth of less than 2 percent is not an illusion, but indeed that value can be optimistically reached in the near decades. As was pointed-out before, the efforts of government to reduce the rate of population growth yields not only the highly increase the number of clinics, physicians, etc., but also the awareness of the people, in particular young couple, to limit the number of children. This change the way of thinking must be regarded as the most important factor to reduce the rate of population growth, indeed.

Table 4. Number of Family Planing Clinics by Region for 1977, 1979, 1982

(unit : clinic)

Region	1977	1979	1982
I	564	1,008	1,492
II	2,652	2,835	3,332
III	132	376	546
IV	213	485	571
V	323	324	437
VI	—	89	175
Total	3,793	5,117	6,553

source : National Family Planning Coordinating Board, 1984

3. 2. *Transmigration*

The idea of moving people from region II to other regions actually has risen at least in the period of Thomas Raffles in 1817. (2) It was first tackled then by the Dutch in 1905 as one of three policies implemented by Dutch. At

that period however, transmigration program had been done only in several years, and the target itself was not clearly defined.

During first Five Year Development Plan, transmigration program has been reactivated again. According to the book published by CBS, the objective of transmigration program are :

— to increase the welfare of population
— to develop regional economy
— to reduce the un-equality of regional population
— to equally distribute the results of development
— to exploit natural resources and human resources
— to reduce the local sentiments
— to maintain national stability (4)

Transmigrants can be broadly classified into three types such as general transmigrants, swakarsa transmigrants and spontaneous transmigrants. This classification is based on the government assistance they receive. (2) p. 23 General transmigrants receive land, house, assistance until the first harvest and transportation from their place of origin. Swakarsa transmigrants (swa= self ; karsa= wish/desire) receive 2 HA of unopened land and some agricultural equipments. Spontaneous transmigrants, as the name indicates, do not receive any assistance from government. During the period of 1969 to 1983, the number of transmigrants is presented in Table 5. Though average of ratio between target and realization was over 100 percent however, if reducing the unequality of regional population is taken as a sole consideration, the contribution of Transmigration Program seems to be very small, due to the following reasons. Firstly, the annual number babies born in region II is much more than the number of transmigrants. Secondly, there is no direct effort to limit the inflow of migrants from other regions to region II. These two reasons will affect to the net of migration in region II. Moreover, the implementation of Transmigration Program in the long-run is questionable. The attractiveness of Transmigration Program relates, possibly, to the bright promise of government to provide land for cultivation. In order to get the suitable land for

Table 5. Target and Realization of Transmigration Program

(nuit : person)

Year	Target	Realization	Ratio
1969–1974	40,916	46,068	112.6
1975–1979	81,100	80,489	99.25
1980	50,000	51,985	103.97
1981	100,000	78,359	97.95
1982	100,000	100,000	100.55
1983	125,000	127,970	102.38
1984	125,000	141,134	112.91

source : Ministry of Transmigration, 1984

growing crops, the forest area will gradually decrease as the number of transmigrants rises. Other issue relates to financial problem. Investment needed by government is not only for opening the new land, but also for housing, transport from places of origin, assistance for transmigrants, infrastructures, etc.

4. The Model and Some Related Problems

In general, there is no person move to other area without any specific objective. Before moving to the new area, some variable will usually be considered in the direction of advantage and dis-advantage in the new area compared to the previous area.

Long time ago, Ravenstein has investigated that distance is usually considered as a variable influence the movement of person to the new area. (26) He proposed that there is negative correlation between the number of migrants and distance. Several migration studies have also proved that the number of migrants decline as the distance increases. (28), (14), (8) Greenwood tries to link the distance with informations. A person, as a general case, prefers to move to the new area with some variables on hand rather than to area with less or no information. (7) b. 375 The powerful of information will decrease and will affect to the increasing of uncertainty, as the distance gets longer. Other studies tried to link the distance with costs of journey. (3) As a common case, the longer the distance the more the money needed for transportation costs. The costs itself, might not be interpreted only in monetary term, but should also be connected with psychic costs. (7), (5) Psychic costs, though difficult in measuring, can be interpreted as a suffering during the trip between area of origin and area of destination, etc. A person may not be expected to move to other area if he or she knows that he or she will critically suffer during the trip. Accordingly, expectation on trip's suffering seem increase as the distance gets longer.

But in Indonesian case, the negative correlation between distance and migration does not happen in all regions. Following Ravenstein's suggestion, the expected number of migrants from region IV to region II should be higher than from region IV to region I because the distance from region IV to region II is shorter. But the data shows that the number of migrants from region IV to region I were higher than the number of migrants from region IV to region II. It is natural then to ask, are there any other variables influence the decision to migrate instead of distance? Suppose the distance from area A to area B and C are equal, and suppose that transport costs is also equal, can we expect that the number of migrants from A to B and C should be equal?

4.1. *Previous Migration Studies*

It has been recognize in several migration studies that migration is known to be selective. Difference in income, age, education, cultural background, etc., will influence the decision of person to migrate. Suppose there are two persons having the same attributes. We may not roughly arrive at a conclusion that decision to migrate of the two persons should be equal. In this connection, psychology factor

plays a key rcle in the process of someone in deciding whether he wants to migrate or not. (band wagon effects, snob effects in Microeconomics Theory (24)) In migration studies, the correlation between psychology and decision to migrate has been less discussed. Tabuchi criticized that macro migration data will usually cause an aggregation biases. (27) But it is necessary to emphasize here that the availability of micro data is very rare, particularly in developing countries. Due to the lack of data, the major part of migration studies used macro data in their analysis.

After the work of Ravenstein, attention was paid to the population variable as an explanatory variable in explaining the movement of population. It was Isard who tried to construct the relationship between migration and both distance and population, and this model is famously called as Gravity Potential Model. (11) With some exceptions, the gravity model essentially is a descriptive and predictive model for aggregate migration flows. (21) Accordingly, the extreme gravity model will not be able to explain some other variables which are expected influence to the migration.

In the spirit of exploring the cause and effect of migration, it was Hicks who proposed that economic variables might be expected as variables which give strong influence to migration. (9) Since then, several migration studies paid more attention to the economic variables and this model is broadly classified into Neo Classical tradition. Investigation has been done in trying to explain the certain economic variables influence to the decision of person to migrate. Considering that behavioural of migration could not be explain merely based on economic phenomena or gravity model, Lowry tried to combine both gravity model and Neoclassical tradition in explaining the behavioural of migration. (15) Though his finding results itself were somewhat unsatisfactory, the Lowry synthesis became a corner point to conduct a more comprehensive migration studies, then. (7), (21) About population, one of variables in Lowry's model, Greenwood argues that population of the destination was more important than of the origin. (7) p. 381 He links his argument to the fact that the greater the population of the destination area, the greater also the number of expected job opportunities. Greenwood also used migrant stock as another variable in explaining out migration in the United States. Migrant stock is actually not a new variable because in 1959, Nelson has deeply explored the migrant stock in his model of migration. (23) These past migrants stand as a source of information, the place where new migrants can borrow money, a person who has capability to guide into the new environment, etc. Thus, the greater the number of past migrants, the stronger also information received in area of origin resulting to the higher expected migration from area of origin to area of destination. Kau and Sirmans also used migrant stock in their study. (12) The interesting result was that, using recursive model the value of migrant stock elasticity was lower as the time difference got longer. (12) p. 53

Though distance is usually considered as an important variable influence the decision to migrate, the previous migration studies clearly show that distance is not a sole variable. Having an equal distance but difference in other variables, one may not expect that the number of migrants should be equal.

4. 2. *Concept of the Study*

As it is pointed-out before, interregional migration can be regarded as a source influence regional population. In a country where concentration of regional population is un-equal, interregional migration give bright promise to alleviate such un-equality. Based on Neoclassical analysis, the un-equality of regional population will gradually decrease, via market mechanism, until reach a condition of equal regional population. Because any intervention might exactly affect the work of market mechanism, the most important effort is that, the analysis goes further, keep the market mechanism to work naturally. But it might be difficult to fully accept the pure analysis above because there is no country with no policy where directly or indirectly will influence the work of market mechanism. Accordingly, an direct effort to reduce the regional population un-equality becomes important. Using the common migration studies, the task will be difficult. Note that in estimating the interregional migration for the future, the common method is that the value of past explanatory variables should be replaced by the future values. It must be kept in mind however, that changing the value of explanatory variables in a given region will not merely influence to the certain region, but most of all regions will also be influenced. Considering the necessary of estimating the movement of population and the difficulty in applying into the previous studies, it is becoming important to seek a method which can be used effectively.

In this connection, we introduce a model called Model Reference Adaptive Interregional Migration (MRAIM). Essentially, our model is nothing but belonging to the family of Model Reference Adaptive System (MRAS). (13) The family of MRAS is broadly used in control studies, but for one who is interested in economic development, Yamamura and Miyata have broadly applied into social science. (28), (30), (31), (17), (18), (19) In giving the name of MRAIM, we indicate that our model is still in the family of MRAS but our model, with modification here and there, deals primarily with interregional migration. In constructing the model, we chose two explanatory variables such as past migration and rate of regional income growth. Note that equations used in MRAS should be in dynamic equation. As was proved in previous studies (7), (23). (12), past migration has close relationship with present migration. At a certain period, past migration could be considered as a proxy of population. Therefore, our selection on past migration as an explanatory variable does not likely violate the methodological framework. Of the second variable, this type of variable is usually called as control input where its main purpose is to control the path of adaptive output to closer and closer converge to the reference path. (see following section) Of course any variable can be arbitrarily used to replace the input control. But yet, it is necessary to emphasize here that policy on population is usually undertaken by government. Accordingly, in undertaking the program on regional population, via interregional migration, there must be a policy by government. Therefore, in our model the input control represents a policy by government. Any other government variable is, of course, permissible, but in our case, the only one variable available is rate of regional

income growth. In every Five Year Development Plan, Indonesian government will usually propose a target on rate of growth of GDP. Considering that GDP is nothing but a summation of regional income, rate of regional income growth is exactly a breakdown of target on growth rate of GDP. Theoretically, it is possible to use more than two explanatory variables in MRAIM, but considering the data available, time constraint, multicolinearity, etc., we had have to drop some other variables.

4.3. *The Model*

To avoid the re-clarification of the general model of MRAS, only brief explanation will be given in the following section. For one who is interested the detail explanation of MRAS, see (13), (29), (30), (31), (17), (18), (19).

As a general model, MRAS consists of two sub-model namely Reference Model and Adaptive Model.

The Reference Model may be written as follows.

$$X1(t+1) = A1\ X1(t) + B1\ U1(t) \tag{1}$$

The Adaptive Model may be written as follows.

$$X2(t+1) = A2\ X2(t) + B2\ U2(t) \tag{2}$$

where,

$X1(t+1)$ and $X2(t+1)$ are vector matrices
$A1$ and $B1$ are constant matrices
$X1(t)$ and $X2(t)$ are vector matrices
$A2$ and $B2$ are time-varying matrices
$U1$ and $U2$ are input vectors

Since our model deals primarily with interregional migration, the two equations above may be re-written as follows,

The Reference Model

$$M_{ij}(t+1) = A1\ M_{ij}(t) + B_i 1\ GRR_i(t) + B_j 1\ GRR_j(t) \tag{3}$$

The Adaptive Model

$$M_{ij}(t+1) = A2\ M_{ij}(t) + B_i 2\ GRA_i(t) + B_j 2\ GRA_j(t) \tag{4}$$

where,

$M_{ij}(t+1)$ is expected migration at period $t+1$
$M_{ij}(t)$ is migration at period t
$A1$ and $A2$ are coefficients of past migration
B_i and B_j are coefficients of rate of regional income growth in region i and in region j
$GRR_i(t)$ is rate of income growth in region i at period t
$GRR_j(t)$ is rate of income growth in region j at period t

In our model, both Reference Model and Adaptive Model happen in the same situation, i. e. Indonesia, accordingly replacing the values of $A1$, B_i1 and B_j1 by

$A2$, B_i2 and B_j2 is permissible. The heart of operation of MRAIM is quite simple that is, how to determine control input in Adaptive Model to make $\lim_{t\to\infty} ||X1(t)-X2(t)||=0$.

Define input control $(U(t))$ as,

$$U2(t)=C(t+1)\ X(t)+D(t+1)\ U1(t) \tag{5}$$

so equation (2) may be written as,

$$X2(t+1)=\Big(A2+B2C(t+1)\Big)\ X1(t)+B2D(t+1)\ U1(t) \tag{6}$$

As state generalized error is nothing but the difference between the state vector of the Reference Model and the state vector of the Adaptive Mode, therefore error equation may be written as follows, (29) p. 282

$$\varepsilon(t+1)=A1\ \varepsilon(t)+\Big(A1-A2-B2\ C(t+1)\Big)\ X2(t)$$
$$+\Big(B1-B2\ D(t+1)\Big)\ U1(t) \tag{7}$$

Miyata has pointed-out that the operation of adaptation laws for $C(t+1)$ and $D(t+1)$ using $\varepsilon(t+1)$ prone to have no practical sense. To overcome this difficulty, he introduced a priori error defined in (19) p. 150.

$$\hat{\varepsilon}(t+1)=X1\ (t+1)-\Big(A2+B2\,C(t+1)\Big)\ X2(t)-B2\,D(t)\ U1(t) \tag{8}$$

To be able to make the gap between Reference and Adaptive asymptotically zero, he has proved that the next adaptation laws of $C(t)$ and $D(t)$ are applicable.

$$A1-A2-B2\,C(t+1)=A1-A2-B2\,C(t+1)$$
$$+\Big(I-\Gamma(t)\Big)^{-1}\ K_c\otimes\hat{\varepsilon}(t+1)\ X2^T(t) \tag{9}$$

$$B1-B2\,D(t+1)=B1-B2\,D(t)+\Big(I-\Gamma(t)\Big)^{-1}K_d\otimes\hat{\varepsilon}(t+1)\ U1^T(t) \tag{10}$$

where K_c and K_d are adaptation speed, and $\Gamma(t)$ represents the next $n\times n$ digonal matrix defined by (19) p. 152.

$$\Gamma(t)=\begin{bmatrix} \sum_{j=1}^{n}\Big\{kC_{ij}x_{2j}{}^2(t)+k_{d1j}u_{1j}{}^2;(t)\Big\} & & 0 \\ & \ddots & \\ 0 & & \sum_{j=1}^{n}\Big\{kC_{nj}x_{2j}{}^2(t)+k_{dnj}u_{2j}{}^2(t)\Big\} \end{bmatrix} \tag{11}$$

In our model, both K_c and K_d may be interpreted as any regional economic policy which influences the growth of regional income, e. g. : tax policy, subsidy, etc. The main aim of adaptation speed is to bring the path of adaptive model to

closely converge to reference model. Accordingly, the higher the values of K_c and K_d, the faster the path of adaptive model converge to reference model.

Both the path of reference and adaptive model may be visualized as in Figure 1.

Note that adaptive path will closer and closer to reference path, and finally at point T, the value of target can be equalized by adaptive.

Next, the dynamic interregional migration equation should be divided into two matrices such as past migration coefficients and regional income growth coefficients. Since we have 6 regions, the partition of both two matrices may be written below.

The diagonal matrix of A matrix consists of past migration coefficients while the off matrix is zero. Every row of B matrix consists of two values that is, coefficients of rate of income growth in region i and coefficients of rate of income growth in region j.

Now the model is complete. Setting the value of target of interegional migration for 1981 to 2000, the value of $U2$ will be automatically derived.

Our period of observation might be considered as the best period since independence due to the highly rate of income growth, free from recession and mod-

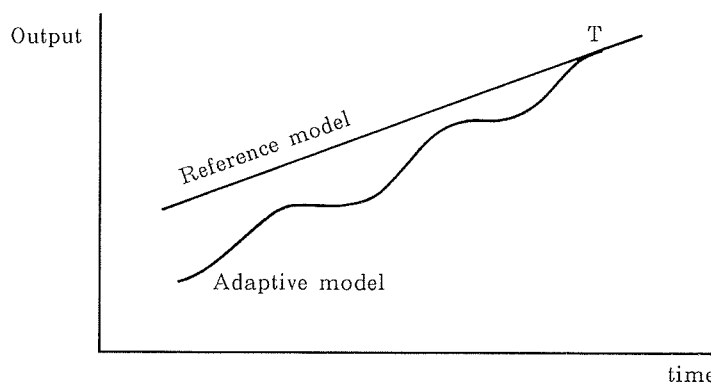

Figure 1. The path of Reference and Adaptive model.

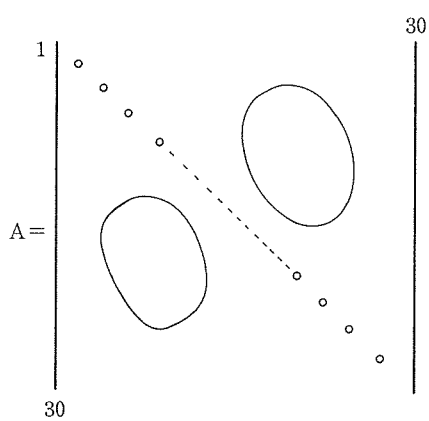

Figure 2. Matrix of past migration coefficients.

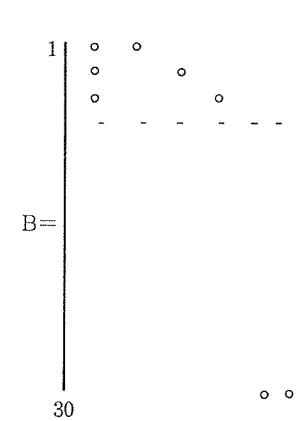

Figure 3. Matrix of rate of regional income growth coefficients.

erate inflation. On the contrary, our projection period, that is from 1981 to 2000, is likely gloomy. It is caused by recession in the beginning 1982 and drastically decrease the price of oil. Accordingly, assuming average rate of regional income growth equals to the past period is highly unrealistic. In order to get a realistic results, we assume that average of rate of regional income growth is between 2.00 percent to 6.50 percent.

4. 4. *Modification of the Model*

Note that matrix B is nonsquare matrix. We will face with difficulty when this nonsquare matrix is applied into equations (8) and (10), because adaptation logarithm requires an inverse matrix. To overcome this difficulty, we use a specific form of inverse matrix called Moore-Penrose inverse matrix (20), (25), which has the following conditions:

(1) $AXA=A$
(2) $XAX=X$
(3) $(AX)^T=AT$
(4) $(XA)^T=XA$

Although we have employed the Moore-Penrose inverse matrix, another problem still remain. The main cause is our nonsquare matrix. Inverse matrix of 6×30 matrix will be 30×6 matrix, and inverse of vector of m dimension should be n dimension, and vice versa. A brief explanation of such case that is, more equations than unknown variables can be found in (16) pp. 399-400. The effect of this problem into our model is that, the adaptive model will not automatically converge to the reference mode. Since adaptive model is not fully controllable, it is worried the path of afaptive model will draw farther and farther away from reference model. To be able to converge to reference model, we had have to introduce adjustment constant into adaptive model so that the adaptive model is modified as follows.

$$X2(t+1) = A2\ X2(t)\ B2\ U2(t)+D \qquad (2\,a)$$

where D is adjustment constant.

Theoretically, the main aim of adjustment constant is to keep the path of adaptive model to converge to reference model. The properties of D is that, the value of D should be equal to the difference between adaptive model and reference model for each period. Practically, D might be interpreted as any kind of non-economic policies. The negative sign of D should be interpreted as policies which aim at deterring migration from region i to region j. On the contrary, the positive sign of D should be interpreted as any effort to encourage migration, except regional income. It is to be clear that there are two policies in adaptive model such as economic policies (rate of regional income growth), and non-economic policies (any policy which aim at deterring or encouraging migration).

5. Analysis of Empirical Results

5. 1. *Dynamic equation*

We have employed equation (3) in trying to estimate the coefficient of past migration, rate of income growth in region of origin, and rate of income growth in region of destination. The results however, were less than satisfactory because some coefficients of rate of income growth in region of origin have positive sign. The interpretation of this result is that, the higher the rate of income growth in region of origin will affect to the higher the number of out-migrants in that region. This finding results depict a situation where people will likely moveout to the new region because of higher investment, higher demand for labour, better facilities, etc., in his or her region of origin, and inversely, people decide to stay in their region of origin though facilities are bad, rate of unemployment is relatively high, etc. This result is likely paradoxical because the real situation shows that people would likely prefer to stay in their place- so the number of out migration will decrease- when the rate of income growth is relatively high. In our case, origin variable, represented by rate of income growth in origin, is not a powerful variable which can be used to explain the interregional migration. About the powerless the role of origin variables, Nelson wrote:

> Perhaps the single most interesting statistical result of our study is the finding that there is no significant relationship between migration and income and unemployment differences. The only significant relations between migration and income and unemployment occur when these latter are destination variables and even in these cases the correlation are low. (23) p. 58

To overcome such difficulty, we modify our model such as written below,

The Reference Model

$$M_{ij}(t+1) = A1\ M_{ij}(t) + B_j 1\ GRR_j(t) \qquad (3\text{ a})$$

The Adaptive Model

$$M_{ij}(t+1) = A2\ M_{ij}(t) + B_j 2\ GRR_j(t) + D \qquad (4\text{ a})$$

The estimation results using equation (3 a) were better than using equation (3).

5. 2. *Estimation of interregional migration*

Note that in our model, the estimated rate of regional income growth can be derived by setting the target of interregional migration. In setting the realistic rate of regional income growth, we refer to the two periods that is, from 1981 to 1990 and from 1991 to 2000. Though the first period is relatively gloomy, however a lot efforts have been done in accordance with how to increase the real income and reduce the dependency of Indonesian economy on petroleum export. The results of such efforts, as we expect, will be enjoyed since the beginning of 1991 up to 2000, the end of our projection period. It means, since 1991 the rate of regional income is expected to slowly grow. (see Table 6)

Table 6. Estimated Rate of Regional Income Growth for 1981 to 2000 (percentage)

Year	reg. I	reg. II	reg. III	reg. IV	reg. V	reg. VI
1981	3.261	2.589	6.616	2.775	6.997	3.498
1982	3.196	2.547	2.312	2.643	2.775	5.754
1983	3.125	2.468	2.308	2.596	2.711	5.461
1984	3.114	2.435	2.303	2.571	2.648	5.396
1985	3.108	2.403	2.299	2.546	2.584	5.330
1986	3.057	2.370	2.294	2.522	2.521	5.264
1987	2.996	2.337	2.290	2.496	2.457	5.197
1988	2.907	2.304	2.285	2.471	2.394	5.130
1989	2.803	2.271	2.280	2.446	2.331	5.061
1990	2.743	2.237	2.275	2.420	2.268	4.992
1991	2.643	2.216	2.445	2.765	2.906	5.802
1992	3.142	2.986	2.685	2.901	3.123	5.916
1993	3.423	3.125	2.991	3.356	3.226	6.012
1994	3.658	3.332	3.221	3.454	3.337	6.062
1995	3.761	3.465	3.397	3.587	3.485	6.105
1996	3.851	3.601	3.502	3.695	3.605	6.196
1997	3.952	3.753	3.653	3.784	3.765	6.321
1998	4.052	3.975	3.854	3.954	3.985	6.502
1999	4.251	4.125	4.215	4.065	4.012	6.605
2000	4.352	4.222	4.452	4.120	4.096	6.695

Almost all adjustment constants (D) have negative sign, meaning that efforts are needed to deter the desire to migrate of those regions. It is found also that the value of adjustment constant was negative at first, but after several years the value become positive, meaning that efforts to deter the movement of people should be changed by efforts to encourage the movement of population. The zero value of adjustment constant is represented by the movement from region VI to region III. The zero value of adjustment constant indicates that an effort to deter or to encourage the movement of people is not necessary. (see Table 7)

The movement of interregional migration is dominated by the movement from region II to region I, but the estimation results show that estimated migration decrease in the period of 1981 to 1990, and begin to increase then. The domination of this movement is likely caused by the closeness the distance of both two regions, and actually the movement of migration from region II to region I has been occurred since long time ago, so that informations about region I received by people in region II is stronger than the remainder of the interregional movement. The lowest estimated interregional migration is represented by the movement from region VI to region III, it is likely caused by the low the number of population in both two regions and maybe the attractiveness of both two regions is likely equal.

The expected interregional migration is presented in Table 8. During the period from 1981 to 1990, expected interregional migration is guessed to decline, because of the decreasing of regional attractiveness as the rate of regional income

Table 7. Estimated Adjustment Constant for 1981 to 2000

from region I to (unit: person)

Year	reg. II	reg. III	reg. IV	reg. V	reg. VI
1981	−4,193	−9	−123	11	−62
1982	−4,197	−27	−125	−9	−64
1983	−4,199	−28	−125	−9	−65
1984	−4,202	−28	−125	−10	−65
1985	−4,204	−28	−125	−10	−66
1986	−4,206	−28	−126	−10	−66
1987	−4,208	−28	−126	−11	−66
1988	−4,211	−28	−126	−11	−67
1989	−4,213	−28	−126	−11	−67
1990	−4,214	−29	−126	−12	−68
1991	−4,213	−29	−126	−11	−68
1992	−4,213	−29	−126	−11	−68
1993	−4,213	−29	−126	−11	−68
1994	−4,212	−29	−126	−11	−68
1955	−4,212	−29	−126	−10	−68
1966	−4,211	−29	−126	−10	−68
1997	−4,211	−29	−126	−10	−68
1988	−4,210	−29	−126	−10	−67
1999	−4,210	−29	−126	−9	−67
2000	−4,209	−29	−126	−9	−67

Table 7 (cont'd)

from region II to

Year	reg. I	reg. III	reg. IV	reg. V	reg. VI
1981	−64,753	−669	−993	−364	−473
1982	−64,968	−641	−997	−245	−457
1983	−65,065	−643	−998	−250	−459
1984	−65,160	−645	−999	−256	−461
1985	−65,254	−647	−999	−262	−462
1986	−65,346	−649	−1,000	−267	−464
1987	−65,436	−652	−1,001	−273	−466
1988	−65,525	−654	−1,002	−279	−468
1989	−65,613	−656	−1,003	−285	−469
1990	−65,694	−658	−1,004	−290	−456
1991	−65,676	−658	−1,004	−292	−455
1992	−65,658	−658	−1,004	−294	−455
1993	−65,640	−658	−1,004	−296	−454
1994	−65,621	−659	−1,003	−297	−454
1995	−65,603	−659	−1,003	−299	−453
1996	−65,585	−659	−1,003	−301	−453
1997	−65,566	−659	−1,003	−303	−452
1998	−65,548	−660	−1,003	−305	−452
1999	−65,529	−660	−1,003	−307	−451
2000	−65,510	−660	−1,002	−309	−451

Table 7 (cont'd)

from region III to

Year	reg. I	reg. II	reg. IV	reg. V	reg. VI
1981	−398	−696	−51	7	−20
1982	−414	−696	−52	2	−18
1983	−416	−606	−52	2	−17
1984	−418	−697	−52	2	−17
1985	−420	−697	−52	2	−17
1986	−422	−698	−52	2	−17
1987	−424	−698	−52	2	−17
1988	−426	−698	−52	2	−17
1989	−427	−698	−52	2	−17
1990	−438	−698	−52	2	−14
1991	−438	−698	−52	2	−14
1992	−439	−698	−52	3	−14
1993	−439	−698	−52	3	−14
1994	−439	−698	−52	3	−14
1995	−439	−698	−52	3	−14
1996	−439	−698	−52	3	−14
1997	−439	−698	−52	3	−14
1998	−439	−698	−52	4	−14
1999	−439	−698	−52	4	−14
4000	−439	−698	−52	4	−14

Table 7 (cont'd)

from region IV to

Year	reg. I	reg. II	reg. III	reg. V	reg. VI
1981	−3,068	−744	223	113	−425
1982	−3,239	−745	140	−8	−440
1983	−3,258	−746	141	−10	−443
1984	−3,276	−746	142	−11	−446
1985	−3,295	−747	144	−12	−449
1986	−33,13	−747	145	−14	−452
1987	−3,331	−747	146	−15	−455
1988	−3,349	−748	147	−16	−457
1989	−3,367	−748	149	−17	−460
1990	−3,485	−748	150	−18	−469
1991	−3,487	−748	152	−15	−469
1992	−3,488	−748	154	−12	−468
1993	−3,490	−748	156	−8	−468
1994	−3,491	−748	158	−5	−467
1995	−3,493	−748	160	−1	−467
1996	−3,494	−748	162	2	−466
1997	−3,496	−748	164	6	−466
1998	−3,498	−748	166	9	−465
1999	−3,499	−747	168	13	−465
2000	−3,501	−747	170	16	−464

Table 7 (cont'd)

from region V to

Year	reg. I	reg. II	reg. III	reg. IV	reg. VI
1981	−321	−462	14	−313	−479
1982	−349	−463	9	−313	−496
1983	−352	−463	9	−314	−499
1984	−356	−463	9	−314	−502
1985	−359	−464	9	−315	−506
1986	−362	−464	9	−315	−509
1987	−365	−464	10	−316	−512
1988	−368	−465	10	−316	−515
1989	−371	−465	10	−316	−518
1990	−391	−468	10	−317	−529
1991	−391	−468	10	−317	−528
1992	−391	−468	10	−317	−527
1993	−391	−468	10	−317	−527
1994	−390	−468	10	−316	−526
1995	−390	−468	11	−316	−526
1996	−390	−467	11	−316	−525
1997	−390	−467	11	−316	−524
1998	−390	−467	11	−316	−524
1999	−390	−467	11	−316	−523
2000	−390	−467	11	−315	−523

Table 7 (cont'd)

from region VI to

Year	reg. I	reg. II	reg. III	reg. IV	reg. V
1981	−154	−120	2	−93	14
1982	−163	−139	0	−92	0
1983	−165	−131	0	−92	0
1984	−166	−131	0	−92	0
1985	−168	−131	0	−93	0
1986	−168	−132	0	−93	0
1987	−169	−132	0	−93	0
1988	−169	−132	0	−94	0
1989	−170	−132	0	−94	0
1990	−177	−144	0	−95	0
1991	−177	−144	0	−94	0
1992	−177	−144	0	−94	0
1993	−177	−144	0	−94	1
1994	−177	−144	0	−94	1
1995	−177	−144	0	−94	1
1996	−177	−143	0	−93	1
1997	−177	−143	0	−93	2
1998	−177	−143	0	−93	2
1999	−177	−143	0	−93	2
2000	−178	−143	0	−93	3

Table 8. Estimated Interregional Migration for 1981 to 2000

from region I to (unit : person)

Year	reg. II	reg. III	reg. IV	reg. V	reg. VI
1981	158,969	5,834	5,096	3,458	1,085
1982	158,991	5,874	5,099	3,529	1,074
1983	159,012	5,914	5,103	3,601	1,063
1984	159,034	5,955	5,106	3,675	1,053
1985	159,056	5,996	5,106	3,750	1,043
1986	159,077	6,037	5,112	3,827	1,033
1987	159,099	6,078	5,115	3,906	1,023
1988	159,120	6,120	5,118	4,986	1,013
1989	159,142	6,161	5,121	4,068	1,003
1990	159,169	6,204	5,125	4,151	1,003
1991	159,196	6,246	5,128	4,236	1,004
1992	159,223	6,289	5,131	4,323	1,004
1993	159,250	6,332	5,135	4,412	1,005
1994	159,277	6,375	5,138	4,503	1,005
1995	159,304	6,419	5,141	5,595	1,006
1996	159,332	6,463	5,145	4,689	1,006
1997	159,359	6,507	5,145	4,786	1,007
1998	159,386	6,552	5,151	4,884	1,007
1999	159,413	6,597	5,155	4,984	1,008
2000	159,440	6,642	5,158	5,086	1,008

Table 8 (cont'd)

from region II to

Year	reg. I	reg. III	reg. IV	reg. V	reg. VI
1981	608,271	79,574	35,296	22,452	6,769
1982	605,532	79,866	35,308	22,699	6,671
1983	602,805	80,158	35,320	22,948	6,575
1984	600,090	80,452	35,331	23,201	6,479
1985	597,387	80,747	35,343	23,456	6,385
1986	594,696	81,042	35,355	23,714	6,293
1987	592,018	81,339	35,366	23,975	6,202
1988	589,351	81,637	35,378	24,238	6,112
1989	586,697	81,937	35,390	24,505	6,023
1990	587,234	82,237	35,402	24,774	6,024
1991	587,772	82,538	35,414	25,047	6,024
1992	588,311	82,840	35,426	25,322	6,025
1993	588,849	83,144	35,439	25,601	6,025
1994	589,389	83,449	35,451	25,882	6,026
1995	589,929	83,754	35,463	26,167	6,026
1996	590,469	84,061	35,476	26,455	6,027
1997	591,010	84,369	35,488	26,746	6,028
1998	591,551	84,678	35,501	27,040	6,028
1999	592,093	84,989	35,513	27,337	6,029
2000	592,635	85,300	35,525	27,638	6,029

Table 8 (cont'd)

from region III to

Year	reg. I	reg. II	reg. IV	reg. V	reg. VI
1981	4,126	27,189	2,231	880	261
1982	4,120	27,192	2,232	297	258
1983	4,115	27,196	2,233	916	256
1984	4,109	27,200	2,235	934	253
1985	4,104	27,203	2,236	953	251
1986	4,098	27,207	2,238	972	248
1987	4,093	27,211	2,239	992	246
1988	4,087	27,215	2,240	1,012	243
1989	4,082	27,218	2,242	1,032	241
1990	4,088	27,223	2,243	1,053	246
1991	4,094	27,228	2,245	1,075	241
1992	4,100	27,232	2,246	1,096	241
1993	4,105	27,237	2,248	1,119	241
1994	4,111	27,242	2,249	1,141	241
1995	4,117	27,246	2,250	1,164	242
1996	4,123	27,251	2,252	1,188	242
1997	4,129	27,256	2,253	1,212	242
1998	4,135	27,260	2,255	1,236	242
1999	4,141	27,265	2,256	1,262	242
2000	4,147	27,270	2,258	1,287	242

Table 8 (cont'd)

from region IV to

Year	reg. I	reg. II	reg. III	reg. V	reg. VI
1981	32,167	30,807	28,035	24,822	7,491
1982	32,162	30,812	28,227	25,332	7,418
1983	32,158	30,816	28,420	25,852	7,346
1984	32,153	30,820	28,615	26,383	7,274
1985	32,149	30,824	28,811	26,925	7,203
1986	32,144	30,829	29,008	27,478	7,133
1987	32,140	30,833	29,207	28,042	7,063
1988	32,135	30,837	29,407	28,618	6,994
1989	32,130	30,841	29,608	29,206	6,926
1990	32,183	30,846	29,811	29,806	6,927
1991	32,236	30,852	30,015	30,418	6,928
1992	32,289	30,857	30,221	31,043	6,929
1993	32,342	30,862	30,428	31,680	6,930
1994	32,395	30,868	30,638	32,331	6,931
1995	32,448	30,873	30,846	32,995	6,933
1996	32,502	30,878	31,057	33,672	6,934
1997	32,555	30,883	31,270	34,364	6,935
1998	32,609	30,889	31,484	35,070	6,936
1999	32,662	30,894	31,699	35,790	6,937
2000	32,716	30,899	31,917	36,525	6,939

Table 8 (cont'd)

from region V to

Year	reg. I	reg. II	reg. III	reg. IV	reg. VI
1981	5,153	19,763	1,911	11,964	8,415
1982	5,153	19,766	1,924	11,969	8,333
1983	5,152	19,769	1,937	11,974	8,252
1984	5,151	19,772	1,951	11,979	8,171
1985	5,150	19,774	1,964	11,983	8,091
1986	5,150	19,777	1,977	11,988	8,013
1987	5,149	19,780	1,991	11,993	7,934
1988	5,148	18,782	2,005	11,997	7,857
1989	5,147	19,785	2,018	12,002	7,780
1990	5,156	19,785	2,032	12,007	7,781
1991	5,164	19,785	2,046	12,012	7,783
1992	5,173	19,785	2,060	12,017	7,784
1993	5,181	19,785	2,074	12,022	7,785
1994	5,190	19,785	2,088	12,027	7,787
1995	5,198	19,785	2,103	12,032	7,788
1996	5,207	19,785	2,117	12,037	7,789
1997	5,215	19,785	2,132	12,042	7,791
1998	5,224	19,785	2,146	12,047	7,792
1999	5,233	19,785	2,161	12,052	7,793
2000	5,241	19,785	2,176	12,057	7,795

Table 8 (cont'd)

from region VI to

Year	reg. I	reg. II	reg. III	reg. IV	reg. V
1981	1,772	6,307	606	4,047	2,488
1982	1,771	6,318	610	4,049	2,537
1983	1,771	6,329	614	4,052	2,587
1984	1,771	6,340	618	4,054	2,638
1985	1,771	6,351	622	4,057	2,690
1986	1,770	6,362	626	4,059	2,743
1987	1,770	6,372	630	4,062	2,797
1988	1,770	6,383	635	4,064	2,852
1989	1,770	6,394	639	4,067	2,909
1990	1,772	6,394	643	4,070	2,966
1991	1,775	6,394	647	4,072	3,024
1992	1,778	6,394	652	4,075	3,084
1993	1,781	6,394	656	4,078	3,145
1994	1,784	6,394	660	4,080	3,207
1995	1,787	6,394	665	4,083	3,270
1996	1,790	6,394	669	4,086	3,334
1997	1,793	6,394	673	4,088	3,400
1998	1,796	6,394	678	4,091	3,467
1999	1,799	6,394	682	4,093	3,535
2000	1,802	6,394	684	4,096	3,605

falls. During the period from 1991 to 2000, the rate of regional income growth is hoped to increase resulting to the increasing the estimated interregional migration.

5. 3. *Multi Regional Input Output*

Note that in our model control input is represented by policy on regional income growth. As it has been proved in several studies, the impact of policy on income growth in a given region will not limit merely to that region, rather, the impact will also be received by other connected regions. That is to say, there is interconnection upon income growth among regions. In this connection, Multi Regional Input Output has been claimed as the most effective tool to help formulate a policy upon regional income growth.

To give a more detail on the informations upon interconnection among regions in Indonesia, we enclose the matrix of Multi Regional Input Output of Indonesia for 1980 in Appendix. (the method used in constructing the MRIO table can be seen in (1)). The division of region is same with this present paper, while the division of sector is as follows: (1) main staple food, (2) other agricultural product, (3) forestry, (4) livestock, (5) fishery, (6) mining, (7) manufacturing, (8) electricity, (9) gas and water, (10) trade, (11) transportation, (12) financial, (13) public administration, (14) services.

6. Conclusion

We have extensively discussed the role of control in projecting the interregional migration. The main aim of control input in our model is, represented by regional income growth policy, to bring the path of adaptive output to closer and closer to the path of reference output so that since somewhere in the planning period, the target of interregional migration will be fully realized, and this is characterized by the zero difference between target output and adaptive output.

We faced with difficulty, at first, because the dynamic equation we used compels us to employ the policy control in nonsquare matrix form. This problem, however has been overcame by employing Moore-Penrose inverse matrix, which its application in migration study is relatively rare. Since Moore-Penrose inverse matrix is actually the main caused of our model for becoming uncontrollable, alternatively, we introduce an adjustment constant which aim at keeping the reference become controllable.

In general, MRAIM can be used in various kind of planning so that this model is hoped can nullify the chronic problem inherent in the planning i. e, the frequently occurs the gap between target and actual output. To doing so, it is necessary to modify the model here and there, but the concept not, associated to the condition nd situation faced.

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Appendix

Table 1. The Indonesian Multiregional Idput Output Table (1980)

From Region I to Region I

Sector													
0.027119	0.000065	0.001370	0.0	0.000086	0.0	0.029786	0.0	0.017517	0.001843	0.000005	0.0	0.0	0.001109
0.000021	0.067714	0.002103	0.0	0.0	0.0	0.029208	0.0	0.000009	0.002767	0.000001	0.0	0.0	0.000159
0.001649	0.000797	0.141245	0.0	0.000129	0.0	0.002200	0.0	0.0	0.016083	0.000529	0.0	0.0	0.003519
0.000132	0.001226	0.000254	0.000254	0.013204	0.004087	0.000004	0.006393	0.0	0.028428	0.000843	0.000126	0.0	0.000115
0.0	0.0	0.000078	0.0	0.052258	0.0	0.001434	0.0	0.0	0.005197	0.000022	0.0	0.0	0.000935
0.000037	0.002042	0.000253	0.004988	0.005942	0.041437	0.012271	0.087328	0.044066	0.003682	0.038022	0.000800	0.0	0.002998
0.005270	0.006980	0.007237	0.003324	0.013122	0.004149	0.043896	0.010473	0.043859	0.008785	0.006800	0.002520	0.0	0.030571
0.0	0.001210	0.000287	0.001668	0.000567	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	0.006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.043274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.012015	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	0.012244	0.001127	0.027343	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.013604	0.0	0.032179

From Region I to Region II

Sector													
0.010752	0.000026	0.000543	0.0	0.000034	0.0	0.011810	0.0	0.006945	0.000731	0.000002	0.0	0.0	0.000440
0.000001	0.002100	0.000065	0.0	0.0	0.0	0.000906	0.0	0.000000	0.000086	0.000000	0.0	0.0	0.000005
0.000182	0.000088	0.015627	0.0	0.000014	0.0	0.000243	0.0	0.0	0.001779	0.000059	0.0	0.0	0.000389
0.000000	0.000001	0.000000	0.000014	0.000004	0.000000	0.000007	0.0	0.000030	0.000001	0.000000	0.0	0.0	0.000000
0.0	0.0	0.000051	0.0	0.034529	0.0	0.000948	0.0	0.0	0.003434	0.000014	0.0	0.0	0.000618
0.000019	0.001049	0.000130	0.002562	0.003052	0.022180	0.006302	0.044847	0.022630	0.001891	0.019527	0.000411	0.0	0.001539
0.001618	0.002143	0.002223	0.001021	0.004030	0.001288	0.013480	0.003216	0.013469	0.002698	0.002088	0.000774	0.0	0.009388
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region I to Region III

Sector													
0.000111	0.000000	0.000006	0.0	0.000000	0.0	0.000122	0.0	0.000072	0.000008	0.000000	0.0	0.0	0.000005
0.000001	0.002066	0.000064	0.0	0.0	0.0	0.000891	0.0	0.000000	0.000034	0.000000	0.0	0.0	0.000005
0.001782	0.000861	0.152572	0.0	0.000139	0.0	0.002376	0.0	0.0	0.017373	0.000571	0.0	0.0	0.003801
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000057	0.003179	0.000394	0.007764	0.009249	0.064497	0.019100	0.135927	0.068590	0.005731	0.059183	0.001245	0.0	0.004666
0.000189	0.000250	0.000259	0.000119	0.000470	0.000150	0.001571	0.000375	0.001569	0.000314	0.000243	0.000090	0.0	0.001094
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region I to Region IV

Sector													
0.000016	0.000000	0.000001	0.0	0.000000	0.0	0.000017	0.0	0.000010	0.000001	0.000000	0.0	0.0	0.000001
0.000000	0.000034	0.000001	0.0	0.0	0.0	0.000015	0.0	0.000000	0.000001	0.000000	0.0	0.0	0.000000
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000009	0.000512	0.000063	0.001250	0.001489	0.010383	0.003075	0.021882	0.011042	0.000923	0.009528	0.000200	0.0	0.000751
0.004481	0.005935	0.006154	0.002826	0.011158	0.003566	0.037327	0.008906	0.037296	0.007470	0.005782	0.002143	0.0	0.025996
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region I to Region V

Sector													
0.000032	0.000000	0.000002	0.0	0.000000	0.0	0.000035	0.0	0.000020	0.000002	0.000000	0.0	0.0	0.000001
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.000010	0.0	0.006742	0.0	0.000085	0.0	1.0	0.000670	0.000003	0.0	0.0	0.000121
0.000005	0.000256	0.000032	0.000626	0.000745	0.005198	0.001539	0.010954	0.005527	0.000462	0.004769	0.000100	0.0	0.000376
0.005427	0.007189	0.007454	0.003423	0.013514	0.004319	0.045209	0.010786	0.045171	0.009048	0.007004	0.002595	0.0	0.031486
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region I to Region VI

Sector													
0.000507	0.000001	0.000026	0.0	0.000002	0.0	0.000557	0.0	0.000328	0.000034	0.000000	0.0	0.0	0.000021
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000086	0.000042	0.007368	0.0	0.000007	0.0	0.000115	0.0	0.0	0.000839	0.000028	0.0	0.0	0.000184
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.000002	0.0	0.001534	0.0	0.000042	0.0	0.0	0.000153	0.000001	0.0	0.0	0.000027
0.000009	0.000505	0.000062	0.001233	0.001468	0.010240	0.003032	0.021580	0.010889	0.000910	0.009396	0.000198	0.0	0.000741
0.000024	0.000032	0.000033	0.000015	0.000060	0.000019	0.000200	0.000048	0.000200	0.000040	0.000031	0.000011	0.0	0.000139
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region II to Region I

Sector													
0.099848	0.000240	0.005044	0.0	0.000316	0.0	0.109670	0.0	0.064497	0.006786	0.000020	0.0	0.0	0.004085
0.000032	0.099949	0.003104	0.0	0.0	0.0	0.043112	0.0	0.000013	0.004085	0.000001	0.0	0.0	0.000235
0.000188	0.000091	0.016073	0.0	0.000015	0.0	0.000250	0.0	0.0	0.001830	0.000060	0.0	0.0	0.000400
0.000028	0.000265	0.000055	0.002855	0.000884	0.000001	0.001383	0.0	0.006148	0.000104	0.000027	0.0	0.0	0.000025
0.0	0.0	0.000037	0.0	0.024893	0.0	0.000683	0.0	0.0	0.002475	0.000010	0.0	0.0	0.000445
0.000060	0.003351	0.000415	0.008184	0.009750	0.067986	0.020133	0.143280	0.072300	0.006041	0.062384	0.001312	0.0	0.004918
0.028254	0.037424	0.038804	0.017820	0.070354	0.022486	0.235357	0.056153	0.235159	0.047101	0.036460	0.012909	0.0	0.163913
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region II to Region II

Sector													
0.128521	0.000309	0.006492	0.0	0.000407	0.0	0.141164	0.0	0.083018	0.008734	0.000026	0.0	0.0	0.005258
0.000050	0.157932	0.004905	0.0	0.0	0.0	0.068123	0.0	0.000021	0.006455	0.000002	0.0	0.0	0.000372
0.002310	0.001117	0.197827	0.0	0.000180	0.0	0.003081	0.0	0.0	0.022526	0.000741	0.0	0.0	0.004928
0.000117	0.001089	0.000225	0.011724	0.003629	0.000004	0.005677	0.0	0.025242	0.000429	0.000112	0.0	0.0	0.000102
0.0	0.0	0.000034	0.0	0.022881	0.0	0.000628	0.0	0.0	0.002275	0.000009	0.0	0.0	0.000409
0.000084	0.004685	0.000580	0.011442	0.013631	0.095049	0.028148	0.200315	0.101080	0.008445	0.087217	0.001834	0.0	0.006876
0.032375	0.042883	0.044464	0.020420	0.080616	0.025765	0.269685	0.064343	0.269458	0.053971	0.041778	0.015480	0.0	0.187820
0.0	0.001210	0.000287	0.001668	0.000576	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	0.006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.034274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.012015	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	0.012244	0.001127	0.027343	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.013604	0.0	0.032179

Table 1 (cont'd)

From Region II to Region III

Sector													
0.099277	0.000239	0.005015	0.0	0.000314	0.0	0.109043	0.0	0.064128	0.006747	0.000020	0.0	0.0	0.004061
0.000048	0.152212	0.004728	0.0	0.0	0.0	0.065655	0.0	0.000021	0.006221	0.000002	0.0	0.0	0.000358
0.000163	0.000079	0.013975	0.0	0.000013	0.0	0.000218	0.0	0.0	0.001591	0.000052	0.0	0.0	0.000348
0.000002	0.000017	0.000004	0.000184	0.000057	0.000000	0.000089	0.0	0.000396	0.000007	0.000002	0.0	0.0	0.000002
0.0	0.0	0.000101	0.0	0.068350	0.0	0.001876	0.0	0.0	0.006797	0.000028	0.0	0.0	0.001222
0.000024	0.001353	0.000167	0.003304	0.003936	0.027445	0.008128	0.057841	0.029187	0.002438	0.025184	0.000530	0.0	0.001986
0.027582	0.036534	0.037881	0.017397	0.068681	0.021951	0.229760	0.054817	0.229566	0.045981	0.035593	0.013188	0.0	0.160014
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region II to Region IV

Sector													
0.070414	0.000169	0.003557	0.0	0.000223	0.0	0.077340	0.0	0.045484	0.004785	0.000014	0.0	0.0	0.002881
0.000039	0.122504	0.003805	0.0	0.0	0.0	0.052841	0.0	0.000017	0.005007	0.000001	0.0	0.0	0.000288
0.000169	0.000082	0.014473	0.0	0.000013	0.0	0.000225	0.0	0.0	0.001648	0.000054	0.0	0.0	0.000361
0.000034	0.000313	0.000065	0.003374	0.001045	0.000001	0.001634	0.0	0.007265	0.000123	0.000032	0.0	0.0	0.000029
0.0	0.0	0.000042	0.0	0.028447	0.0	0.000781	0.0	0.0	0.002829	0.000012	0.0	0.0	0.000509
0.000022	0.001208	0.000150	0.002950	0.003514	0.024506	0.007257	0.051646	0.026061	0.002177	0.022487	0.000473	0.0	0.001773
0.028402	0.037619	0.039007	0.017913	0.070721	0.022603	0.236585	0.056446	0.236386	0.047347	0.036650	0.013580	0.0	0.164768
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	00.	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region II to Region V

Sector													
0.103241	0.000248	0.005215	0.0	0.000327	0.0	0.113398	0.0	0.066689	0.007016	0.000021	0.0	0.0	0.004224
0.000043	0.135155	0.004198	0.0	0.0	0.0	0.058298	0.0	0.000018	0.005524	0.000002	0.0	0.0	0.000318
0.000642	0.000310	0.054956	0.0	0.000050	0.0	0.000856	0.0	0.0	0.006258	0.000206	0.0	0.0	0.001369
0.000056	0.000517	0.000107	0.005565	0.001723	0.000002	0.002695	0.0	0.011983	0.000204	0.000053	0.0	0.0	0.000049
0.0	0.0	0.000072	0.0	0.048315	0.0	0.001326	0.0	0.0	0.004804	0.000020	0.0	0.0	0.000864
0.000030	0.001686	0.000209	0.004118	0.004906	0.034208	0.010130	0.072093	0.036379	0.003039	0.031389	0.000660	0.0	0.002475
0.024346	0.032247	0.033436	0.015355	0.060622	0.019375	0.202800	0.048385	0.202628	0.040586	0.031416	0.011641	0.0	0.141238
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region II to Region VI

Sector													
0.071317	0.000171	0.003603	0.0	0.000226	0.0	0.078333	0.0	0.046068	0.004847	0.000014	0.0	0.0	0.002918
0.000046	0.144187	0.004478	0.0	0.0	0.0	0.062194	0.0	0.000019	0.005893	0.000002	0.0	0.0	0.000339
0.002134	0.001031	0.182724	0.0	0.000167	0.0	0.002845	0.0	0.0	0.020807	0.000684	0.0	0.0	0.004552
0.000027	0.000247	0.000051	0.002660	0.000824	0.000001	0.001288	0.0	0.005728	0.000097	0.000025	0.0	0.0	0.000023
0.0	0.0	0.000019	0.0	0.013078	0.0	0.000359	0.0	0.0	0.001301	0.000005	0.0	0.0	0.000234
0.000015	0.000842	0.000104	0.002055	0.002449	0.017074	0.005056	0.035984	0.018158	0.001517	0.015667	0.000330	0.0	0.001235
0.024315	0.032206	0.033394	0.015336	0.060545	0.019351	0.202543	0.048323	0.202372	0.040534	0.031376	0.011626	0.0	0.141059
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region III to Region I

Sector													
0.004837	0.000012	0.000244	0.0	0.000015	0.0	0.005313	0.0	0.003124	0.000329	0.000001	0.0	0.0	0.000198
0.000001	0.002561	0.000080	0.0	0.0	0.0	0.001105	0.0	0.000000	0.000105	0.000000	0.0	0.0	0.000006
0.001224	0.000592	0.104852	0.0	0.000096	0.0	0.001633	0.0	0.0	0.011939	0.000393	0.0	0.0	0.002612
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.000003	0.0	0.002345	0.0	0.000064	0.0	0.0	0.000233	0.000001	0.0	0.0	0.000042
0.000009	0.000493	0.000061	0.001204	0.001434	0.010001	0.002962	0.021076	0.010635	0.000889	0.009177	0.000193	0.0	0.000724
0.000130	0.000173	0.000179	0.000082	0.000324	0.000104	0.001085	0.000259	0.001084	0.000217	0.000168	0.000062	0.0	0.000756
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region III to Region II

Sector													
0.000095	0.000000	0.000005	0.0	0.000000	0.0	0.000105	0.0	0.000061	0.000006	0.000000	0.0	0.0	0.000004
0.000000	0.000632	0.000020	0.0	0.0	0.0	0.000272	0.0	0.000000	0.000026	0.000000	0.0	0.0	0.000001
0.000547	0.000264	0.046802	0.0	0.000043	0.0	0.000729	0.0	0.0	0.005329	0.000175	0.0	0.0	0.001166
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.000019	0.0	0.012562	0.0	0.000345	0.0	0.0	0.001249	0.000005	0.0	0.0	0.000225
0.000002	0.000135	0.000017	0.000329	0.000392	0.002736	0.000810	0.005766	0.002910	0.000243	0.002511	0.000053	0.0	0.000198
0.000048	0.000064	0.000066	0.000030	0.000120	0.000038	0.000400	0.000095	0.000399	0.000080	0.000062	0.000023	0.0	0.000278
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region III to Region III

Sector

0.011609	0.000028	0.000586	0.0	0.000037	0.0	0.012751	0.0	0.007499	0.000789	0.000002	0.0	0.0	0.000475
0.000002	0.007837	0.000243	0.0	0.0	0.0	0.003380	0.0	0.000001	0.000320	0.000000	0.0	0.0	0.000018
0.000908	0.000439	0.077751	0.0	0.000071	0.0	0.001210	0.0	0.0	0.008849	0.000291	0.0	0.0	0.001936
0.000031	0.000286	0.000059	0.003083	0.000954	0.000001	0.001493	0.0	0.006639	0.000113	0.000030	0.0	0.0	0.000027
0.0	0.0	0.000016	0.0	0.010526	0.0	0.000289	0.0	0.0	0.001047	0.000004	0.0	0.0	0.000188
0.000024	0.001326	0.000164	0.003239	0.003859	0.026908	0.007968	0.056708	0.028615	0.002391	0.024690	0.000519	0.0	0.001947
0.000254	0.000336	0.000348	0.000160	0.000632	0.000202	0.002113	0.000504	0.002112	0.000423	0.000327	0.000121	0.0	0.001472
0.0	0.001210	0.000287	0.001668	0.000576	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	0.006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.034274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.012015	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	0.012244	0.001127	0.027343	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.013604	0.0	0.032179

From Region III to Region IV

Sector

0.000174	0.000000	0.000009	0.0	0.000001	0.0	0.000192	0.0	0.000113	0.000012	0.000000	0.0	0.0	0.000007
0.000000	0.000495	0.000015	0.0	0.0	0.0	0.000214	0.0	0.000000	0.000020	0.000000	0.0	0.0	0.000001
0.001708	0.000826	0.146279	0.0	0.000133	0.0	0.002278	0.0	0.0	0.016657	0.000548	0.0	0.0	0.003644
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000026	0.001468	0.000182	0.003586	0.004272	0.029787	0.008821	0.062776	0.031677	0.002647	0.027333	0.000575	0.0	0.002155
0.000120	0.000159	0.000165	0.000076	0.000299	0.000095	0.001000	0.000238	0.000999	0.000200	0.000155	0.000057	0.0	0.000696
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region III to Region V

Sector													
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.001176	0.000569	0.100736	0.0	0.000092	0.0	0.001569	0.0	0.0	0.011471	0.000377	0.0	0.0	0.002510
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000030	0.001665	0.000206	0.004066	0.004844	0.033778	0.010003	0.071187	0.035921	0.003001	0.030995	0.000652	0.0	0.002444
0.000014	0.000018	0.000019	0.000009	0.000034	0.000011	0.000114	0.000027	0.000114	0.000023	0.000018	0.000007	0.0	0.000080
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region III to Region VI

Sector													
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000188	0.000006	0.0	0.0	0.0	0.000081	0.0	0.000000	0.000008	0.000000	0.0	0.0	0.000000
0.000175	0.000085	0.014971	0.0	0.000014	0.0	0.000233	0.0	0.0	0.001705	0.000056	0.0	0.0	0.000373
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000059	0.003303	0.000409	0.008068	0.009611	0.067018	0.019847	0.141240	0.071271	0.005955	0.061496	0.001293	0.0	0.004848
0.000079	0.000104	0.000108	0.000050	0.000196	0.000063	0.000657	0.000157	0.000656	0.000131	0.000102	0.000038	0.0	0.000457
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region IV to Region I

Sector													
0.013226	0.000032	0.000668	0.0	0.000042	0.0	0.014527	0.0	0.008544	0.000899	0.000003	0.0	0.0	0.000541
0.000000	0.000290	0.000009	0.0	0.0	0.0	0.000125	0.0	0.000000	0.000012	0.000000	0.0	0.0	0.000001
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000025	0.000233	0.000048	0.002512	0.000778	0.000001	0.001216	0.0	0.005409	0.000092	0.000024	0.0	0.0	0.000022
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000001	0.000000	0.000003	0.000003	0.000024	0.000007	0.000050	0.000025	0.000002	0.000022	0.000000	0.0	0.000002
0.000621	0.000822	0.000852	0.000391	0.001545	0.000494	0.005169	0.001233	0.005165	0.001035	0.000801	0.000297	0.0	0.003600
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region IV to Region II

Sector													
0.006074	0.000015	0.000307	0.0	0.000019	0.0	0.006671	0.0	0.003923	0.000413	0.000001	0.0	0.0	0.000248
0.000002	0.007069	0.000220	0.0	0.0	0.0	0.003049	0.0	0.000001	0.000289	0.000000	0.0	0.0	0.000017
0.000006	0.000003	0.000498	0.0	0.000000	0.0	0.000008	0.0	0.0	0.000057	0.000002	0.0	0.0	0.000012
0.000018	0.000163	0.000034	0.001757	0.000544	0.000001	0.000851	0.0	0.003783	0.000064	0.000017	0.0	0.0	0.000015
0.0	0.0	0.000003	0.0	0.002099	0.0	0.000058	0.0	0.0	0.000209	0.000001	0.0	0.0	0.000038
0.000000	0.000019	0.000002	0.000046	0.000055	0.000382	0.000113	0.000806	0.000407	0.000034	0.000351	0.000007	0.0	0.000028
0.000127	0.000168	0.000174	0.000080	0.000316	0.000101	0.001057	0.000252	0.001056	0.000211	0.000164	0.000061	0.0	0.000736
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region IV to Region III

Sector													
0.013179	0.000032	0.000666	0.0	0.000042	0.0	0.014475	0.0	0.008513	0.000896	0.000003	0.0	0.0	0.000539
0.000001	0.002988	0.000093	0.0	0.0	0.0	0.001289	0.0	0.000000	0.000122	0.000000	0.0	0.0	0.000007
0.000099	0.000048	0.008469	0.0	0.000008	0.0	0.000132	0.0	0.0	0.000964	0.000032	0.0	0.0	0.000211
0.000233	0.002164	0.000448	0.023305	0.007214	0.000008	0.011284	0.0	0.050177	0.000852	0.000223	0.0	0.0	0.000204
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000025	0.000003	0.000060	0.000072	0.000502	0.000149	0.001058	0.000534	0.000045	0.000460	0.000010	0.0	0.000036
0.005942	0.007870	0.008160	0.003737	0.014795	0.004728	0.049493	0.011808	0.049452	0.009905	0.007667	0.002841	0.0	0.034469
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region IV to Region IV

Sector													
0.049670	0.000119	0.002509	0.0	0.000157	0.0	0.054556	0.0	0.032085	0.003376	0.000010	0.0	0.0	0.002032
0.000008	0.024176	0.000751	0.0	0.0	0.0	0.010428	0.0	0.000003	0.000988	0.000000	0.0	0.0	0.000057
0.000990	0.000478	0.084768	0.0	0.000077	0.0	0.001320	0.0	0.0	0.009652	0.000317	0.0	0.0	0.002112
0.000194	0.001804	0.000374	0.019428	0.006014	0.000006	0.009407	0.0	0.041830	0.000710	0.000186	0.0	0.0	0.000170
0.0	0.0	0.000017	0.0	0.011600	0.0	0.000318	0.0	0.0	0.001153	0.000005	0.0	0.0	0.000207
0.000047	0.002592	0.000321	0.006332	0.007543	0.052596	0.015576	0.110847	0.055934	0.004673	0.048263	0.001015	0.0	0.003805
0.001155	0.001530	0.001587	0.000729	0.002877	0.000920	0.009624	0.002296	0.009616	0.001926	0.001491	0.000552	0.0	0.006703
0.0	0.001210	0.000287	0.001668	0.000576	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	00006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.034274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.010215	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	0.012244	0.001127	0.027343	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.013604	0.0	0.032179

Table 1 (cont'd)

From Region IV to Region V

Sector													
0.002728	0.000007	0.000138	0.0	0.000009	0.0	0.002996	0.0	0.001762	0.000185	0.000001	0.0	0.0	0.000112
0.000001	0.001707	0.000053	0.0	0.0	0.0	0.000736	0.0	0.000000	0.000070	0.000000	0.0	0.0	0.000004
0.000229	0.000111	0.019612	0.0	0.000018	0.0	0.000305	0.0	0.0	0.002233	0.000073	0.0	0.0	0.000489
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000001	0.000030	0.000004	0.000073	0.000087	0.000609	0.000180	0.001284	0.000648	0.000054	0.000559	0.000012	0.0	0.000044
0.003915	0.005186	0.005377	0.002469	0.009749	0.003116	0.032615	0.007781	0.032587	0.006527	0.005052	0.001872	0.0	0.022714
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region IV to Region VI

Sector													
0.051161	0.000123	0.002584	0.0	0.000162	0.0	0.056194	0.0	0.033047	0.003477	0.000010	0.0	0.0	0.002093
0.000008	0.025440	0.000790	0.0	0.0	0.0	0.010973	0.0	0.000003	0.001040	0.000000	0.0	0.0	0.000060
0.000231	0.000112	0.019770	0.0	0.000018	0.0	0.000308	0.0	0.0	0.002251	0.000074	0.0	0.0	0.000493
0.000012	0.000113	0.000023	0.001216	0.000377	0.000000	0.000589	0.0	0.002619	0.000044	0.000012	0.0	0.0	0.000011
0.0	0.0	0.000003	0.0	0.002306	0.0	0.000063	0.0	0.0	0.000229	0.000001	0.0	0.0	0.000041
0.000015	0.000816	0.000101	0.001992	0.002373	0.016548	0.004901	0.034876	0.017599	0.001470	0.015185	0.000319	0.0	0.001197
0.009840	0.013033	0.013514	0.006206	0.024501	0.007831	0.081965	0.019556	0.081896	0.016403	0.012697	0.004705	0.0	0.057084
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region V to Region I

Sector													
0.013480	0.000032	0.000681	0.0	0.000043	0.0	0.014806	0.0	0.008707	0.000916	0.000003	0.0	0.0	0.000551
0.000000	0.000171	0.000005	0.0	0.0	0.0	0.000074	0.0	0.000000	0.000007	0.000000	0.0	0.0	0.000000
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000088	0.000823	0.000170	0.008860	0.002743	0.000003	0.004290	0.0	0.019076	0.000324	0.000085	0.0	0.0	0.000077
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000001	0.000000	0.000001	0.000002	0.000012	0.000004	0.000025	0.000013	0.000001	0.000011	0.000000	0.0	0.000001
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region V to Region II

Sector													
0.011656	0.000028	0.000589	0.0	0.000037	0.0	0.012803	0.0	0.007529	0.000792	0.000002	0.0	0.0	0.000477
0.000000	0.001024	0.000032	0.0	0.0	0.0	0.000442	0.0	0.000000	0.000042	0.000000	0.0	0.0	0.000002
0.000000	0.000000	0.000026	0.0	0.000000	0.0	0.000000	0.0	0.0	0.000003	0.000000	0.0	0.0	0.000001
0.000139	0.001296	0.000268	0.013956	0.004320	0.000005	0.006757	0.0	0.030048	0.000510	0.000134	0.0	0.0	0.000122
0.0	0.0	0.000007	0.0	0.004961	0.0	0.000136	0.0	0.0	0.000493	0.000002	0.0	0.0	0.000089
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000106	0.000141	0.000146	0.000067	0.000265	0.000085	0.000885	0.000211	0.000885	0.000177	0.000137	0.000051	0.0	0.000617
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region V to Region III

Sector													
0.034382	0.000083	0.001737	0.0	0.000109	0.0	0.037764	0.0	0.022209	0.002337	0.000007	0.0	0.0	0.001407
0.000002	0.005225	0.000162	0.0	0.0	0.0	0.002254	0.0	0.000001	0.000214	0.000000	0.0	0.0	0.000012
0.000009	0.000004	0.000734	0.0	0.000001	0.0	0.000011	0.0	0.0	0.000084	0.000003	0.0	0.0	0.000018
0.000008	0.000076	0.000016	0.000815	0.000252	0.000000	0.000395	0.0	0.001756	0.000030	0.000008	0.0	0.0	0.000007
0.0	0.0	0.000001	0.0	0.000612	0.0	0.000017	0.0	0.0	0.000061	0.000000	0.0	0.0	0.000011
0.000000	0.000005	0.000001	0.000012	0.000014	0.000096	0.000028	0.000201	0.000102	0.000008	0.000088	0.000002	0.0	0.000007
0.000295	0.000391	0.000405	0.000186	0.000734	0.000235	0.002456	0.000586	0.002454	0.000492	0.000380	0.000141	0.0	0.001711
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region V to Region IV

Sector													
0.036444	0.000088	0.001841	0.0	0.000115	0.0	0.040029	0.0	0.023541	0.002477	0.000007	0.0	0.0	0.001491
0.000000	0.001451	0.000045	0.0	0.0	0.0	0.000626	0.0	0.000000	0.000059	0.000000	0.0	0.0	0.000003
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000013	0.000121	0.000025	0.001301	0.000403	0.000000	0.000630	0.0	0.002802	0.000048	0.000012	0.0	0.0	0.000011
0.0	0.0	0.000003	0.0	0.001940	0.0	0.000053	0.0	0.0	0.000193	0.000001	0.0	0.0	0.000035
0.000000	0.000008	0.000001	0.000019	0.000022	0.000155	0.000046	0.000327	0.000165	0.000014	0.000143	0.000003	0.0	0.000011
0.000086	0.000114	0.000118	0.000054	0.000213	0.000068	0.000714	0.000170	0.000713	0.000143	0.000111	0.000041	0.0	0.000497
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region V to Region V

Sector													
0.052128	0.000125	0.002633	0.0	0.000165	0.0	0.057256	0.0	0.033672	0.003543	0.000011	0.0	0.0	0.002133
0.000011	0.033789	0.001049	0.0	0.0	0.0	0.014575	0.0	0.000005	0.001381	0.000000	0.0	0.0	0.000080
0.001004	0.000485	0.085974	0.0	0.000078	0.0	0.001339	0.0	0.0	0.009790	0.000322	0.0	0.0	00002142
0.000218	0.002033	0.000421	0.021888	0.006775	0.000007	0.010598	0.0	0.047126	0.000800	0.000210	0.0	0.0	0.000191
0.0	0.0	0.000036	0.0	0.024440	0.0	0.000671	0.0	0.0	0.002430	0.000010	0.0	0.0	0.000437
0.000040	0.002235	0.000277	0.005460	0.006504	0.045356	0.013432	0.095587	0.048234	0.004030	0.041619	0.000875	0.0	0.003281
0.000576	0.000763	0.000791	0.000363	0.001434	0.000458	0.004798	0.001145	0.004794	0.000960	0.000743	0.000275	0.0	0.003342
0.0	0.001210	0.000287	0.001668	0.000576	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	0.006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.034274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.012015	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	0.012244	0.001127	0.027343	0.001336	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.0	0.032179

From Region V to Region VI

Sector													
0.028911	0.000069	0.001460	0.0	0.000092	0.0	0.031755	0.0	0.018675	0.001965	0.000006	0.0	0.0	0.001183
0.000000	0.000239	0.000007	0.0	0.0	0.0	0.000103	0.0	0.000000	0.000010	0.000000	0.0	0.0	0.000001
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000229	0.002127	0.000440	0.022898	0.007088	0.000008	0.011087	0.0	0.049302	0.000837	0.000219	0.0	0.0	0.000200
0.0	0.0	0.000090	0.0	0.060781	0.0	0.001668	0.0	0.0	0.006044	0.000025	0.0	0.0	0.001087
0.000000	0.000001	0.000000	0.000001	0.000002	0.000012	0.000004	0.000025	0.000013	0.000001	0.000011	0.000000	0.0	0.000001
0.000007	0.000009	0.000009	0.000004	0.000017	0.000005	0.000057	0.000014	0.000057	0.000011	0.000009	0.000003	0.0	0.000040
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region VI to Region I

Sector													
0.000048	0.000000	0.000002	0.0	0.000000	0.0	0.000052	0.0	0.000031	0.000003	0.000000	0.0	0.0	0.000002
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000003	0.000005	0.000005	0.000002	0.000009	0.000003	0.000029	0.000007	0.000029	0.000006	0.000004	0.000002	0.0	0.000020
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region VI to Region II

Sector													
0.001443	0.000003	0.000073	0.0	0.000005	0.0	0.001585	0.0	0.000932	0.000098	0.000000	0.0	0.0	0.000059
0.000001	0.001929	0.000060	0.0	0.0	0.0	0.000832	0.0	0.000000	0.000079	0.000000	0.0	0.0	00000005
0.000016	0.000008	0.001337	0.0	0.000001	0.0	0.000021	0.0	0.0	0.000152	0.000005	0.0	0.0	0.000033
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.000004	0.0	0.002449	0.0	0.000067	0.0	0.0	0.000244	0.000001	0.0	0.0	0.000044
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region VI to Region III

Sector													
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000376	0.000012	0.0	0.0	0.0	0.000162	0.0	0.000000	0.000015	0.000000	0.0	0.0	0.000001
0.000101	0.000049	0.008679	0.0	0.000008	0.0	0.000135	0.0	0.0	0.000988	0.000033	0.0	0.0	0.000216
0.000001	0.000006	0.000001	0.000060	0.000019	0.000000	0.000029	0.0	0.000130	0.000002	0.000001	0.0	0.0	0.000001
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000017	0.000023	0.000024	0.000011	0.000043	0.000014	0.000143	0.000034	0.000143	0.000029	0.000022	0.000008	0.0	0.000099
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region VI to Region IV

Sector													
0.001840	0.000004	0.000093	0.0	0.000006	0.0	0.002021	0.0	0.001188	0.000125	0.000000	0.0	0.0	0.000075
0.000007	0.022042	0.000685	0.0	0.0	0.0	0.009508	0.0	0.000003	0.000901	0.000000	0.0	0.0	0.000075
0.000194	0.000094	0.016623	0.0	0.000015	0.0	0.000259	0.0	0.0	0.001893	0.000062	0.0	0.0	0.000414
0.000033	0.000311	0.000064	0.003347	0.001036	0.000001	0.001621	0.0	0.007206	0.000122	0.000032	0.0	0.0	0.000029
0.0	0.0	0.000056	0.0	0.037502	0.0	00.01029	0.0	0.0	0.003729	0.000016	0.0	0.0	0.000671
0.000002	0.000100	0.000012	0.000245	0.000291	0.002031	0.000602	0.004281	0.002160	0.000180	0.001864	0.000039	0.0	0.000147
0.000031	0.000041	0.000042	0.000019	0.000077	0.000025	0.000257	0.000061	0.000257	0.000051	0.000040	0.000015	0.0	0.000179
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1 (cont'd)

From Region VI to Region V

Sector

0.000428	0.000001	0.000022	0.0	0.000001	0.0	0.000470	0.0	0.000277	0.000029	0.000000	0.0	0.0	0.000018
0.000000	0.000068	0.000002	0.0	0.0	0.0	0.000029	0.0	0.000000	0.000003	0.000000	0.0	0.0	0.000000
0.000010	0.000005	0.000865	0.0	0.000001	0.0	0.000013	0.0	0.0	0.000099	0.000003	0.0	0.0	0.000022
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000000	0.000015	0.000002	0.000036	0.000043	0.000299	0.000088	0.000630	0.000318	0.000027	0.000274	0.000006	0.0	0.000022
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

From Region VI to Region VI

Sector

0.006661	0.000016	0.000336	0.0	0.000021	0.0	0.007316	0.0	0.004303	0.000453	0.000001	0.0	0.0	0.000272
0.000000	0.000632	0.000020	0.0	0.0	0.0	0.000272	0.0	0.000000	0.000026	0.000000	0.0	0.0	0.000001
0.000436	0.000211	0.037737	0.0	0.000034	0.0	0.000581	0.0	0.0	0.004251	0.000140	0.0	0.0	0.000930
0.000007	0.000063	0.000013	0.000675	0.000209	0.000000	0.000327	0.0	0.001454	0.000025	0.000006	0.0	0.0	0.000006
0.0	0.0	0.000003	0.0	0.001789	0.0	0.000049	0.0	0.0	0.000178	0.000001	0.0	0.0	0.000032
0.000008	0.000422	0.000052	0.001030	0.001227	0.008555	0.002533	0.018030	0.009098	0.000760	0.007850	0.000165	0.0	0.000619
0.000010	0.000014	0.000014	0.000006	0.000026	0.000008	0.000086	0.000020	0.000086	0.000017	0.000013	0.000005	0.0	0.000060
0.0	0.001210	0.000287	0.001668	0.000576	0.001186	0.003980	0.139897	0.000806	0.010579	0.004246	0.006325	0.0	0.018506
0.001339	0.005992	0.002174	0.011409	0.001915	0.004648	0.001407	0.030508	0.001696	0.007439	0.015827	0.057834	0.0	0.011652
0.006387	0.024324	0.034274	0.005694	0.032405	0.006916	0.054955	0.026443	0.136747	0.021284	0.013810	0.011372	0.0	0.052702
0.003744	0.021016	0.012015	0.004066	0.009872	0.004161	0.019735	0.013692	0.029160	0.018755	0.092717	0.017282	0.0	0.018033
0.004908	0.011065	0.006155	0.017539	0.032405	0.028992	0.007987	0.013299	0.013594	0.031848	0.035246	0.025549	0.0	0.023223
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.000210	00012244	0.001127	0.027343	0.001336	0.007447	0.001648	0.015697	0.001022	0.010353	0.112786	0.013604	0.0	0.032179