The Interregional Impact of Fiscal Decentralization in Indonesia: Inter Regional Social Accounting Matrix Model

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ABSTRACT

Undang-undang 22/0 dan 25/99 telah merubah pola hubungan pusat-daerah di Indoensia dari pola sentralistik menjadi desentralisis yang efektif berlaku sejak bulan Januari 2001. Lebih jauh pemerintah juga mengeluarkan Peraturan Pemerintah (PP) yang mengatur lebih detail tentang kewajiban dan kewenangan daerah, hutang daerah dan hal lainnya, [1] selain beberapa sektor penting seperti sistem peradilan, agama, keamanan dan hal lain yang masih dibawah tanggung-jawab dan kewenangan pemerintah pusat.

Konsekuensi langsung dari perubahan ini adalah pemerintah harus mengatur pemerataan dan sustainabilitas anggaran antar daerah. Mengingat karakteristik antar daerah sangat bervariasi dalam hal kandungan sumber daya alam, dan sumber daya manusia, dan juga selepas krisis yang menerpa Indonesia, maka permasalahan yang dihadapi pemerintah pusat dalam menjalankan proses desentralisasi ini, menjadi tidak ringan.

Satu hal yang jelas, implementasi proses desentralisasi ini, akan mengurangi penerimaan pemerintah pusat secara langsung sementara agenda peningkatan kesejahteraan, penurunan kesenjangan dan upaya peningkatan pertumbuhan lintas wilayah, sudah didepan mata.

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[1] Undang-Undang 22/1999

Paper Objectives

1. Constructing social Interregional Social Accounting Matrices (IRSAM) which has fiscal decentralization account and grouped into two macro region Java and Outer Java and seven micro region, Western Java (Including Jakarta), Central Java, Eastern Java, Sumatera, Kalimantan, Sulawesi and The Eastern Island of Indonesia.
2. Updating the IRSAM account under the RAS method.
3. Calculating the income and output multiplier from the government expenditure.
4. Simulating the impact of financial transfer mechanism between central and local government through current General Purposes Grant (DAU), Specific Purposes Grant (DAK) and Balancing Fund of tax and natural resource income (Bagi Hasil).

Methodology

This paper utilized Interregional Social Accounting Matrix 102 x 102 frame work as analysis tools[2]. The IRSAM matrix split Indonesia into two macro regions, Java and Other Java and seven micro regions as mentioned above.

Basically Social Accounting Matrix is a matrix represents the total income and expenditure of whole economics parties in the spot of time. It has four main blocks three of them is endogenous such as Factor of Production, Institutions and Production Activity. The single other block is exogenous one that captured the transactions from abroad. The row of the matrices represents the incomes, and the column is the expenditures side. The sum of income always equal with the sum of expenditures, this assumption come from the balance sheet principal as double entry book keeping.

As the data framework, the SAM designed to convey a set of information within particular context. Although there is no standard structure for the SAM (because of its dependence on the objectives of the study), the major connection among its principal account can be recognized in comparable causal interrelationship. Figure 1.1 illustrates the major interrelationships among accounts in any generic, simplified SAM, as shown in figure 1.2. The structure of the production activities is similar to that any input-output table, in which the production activities may be specified according to some criteria, such as type of commodity, level of technology and prevailing form of organization. These production activities generates a flow of value added, which accrues to various types of factors of production. In any SAM table, the respective factors of production may be classified according labor skills, types of capital, or land classification. The resulting factorial income distribution shows the major source of income for each institutional account, which is divided according to household by socio-economic groups, companies and government.

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[2] The IRSAM used is 102 x 102 IRSAM for 1990 constructed by Luky Eko Wurryanto (1996) in the PhD dissertation Regional Program at Cornell University. For Analyzing the current condition the IRSAM for 90 has been updated to IRSAM for 99 under the RAS method

Figure 2.1 Simplified Structure of SAM table

		Expenditure				
		Factor	Institution	Production	Others	Total
INCOME	Factors	0	0	T_{13} Factorial Income Distribution	X_1 Factor Income from Abroad	Y_1 Income of factors
	Institution	T_{21} Income distribution to Household and other institution	T_{22} Transfers, Taxes, and Subsidies	0	X_2 Transfer from abroad	Y_2 Income of Institution
	Production	0	T_{32} Final Demand	T_{33} Intermediate Demand	X_3 Export and Investment	Y3 Total output
	Others	L_1 Factor Income to Abroad	L_2 Import, Saving, Indirect tax	L_3 Import of competitive goods	R Balance of Payment	Total Others Income
	Total	Y_{a1} Outlay = Income of factors	Y_{a2} Expenditure of Institution	Y_{a3} Gross Output	Total Others Expenditure	

As mentioned before we will utilize the IRSAM 1990 which has been made by Luky Eko Wuryanto.[3] In order of analyzing current condition the IRSAM 1990 will be updated into IRSAM 1999 using RAS matrix method. For comprehensive understanding before updating the matrix, we would explore the characteristic of the IRSAM 90.

Methodology and Structure of IRSAM 90
The main ingredient of estimating IRSAM 1990 as the follows:
1. Multiregional I/O Table of Indonesia for 199, which was estimated and constructed by National development Planning Agency (BAPPENAS).
2. national I/O Table for Indonesia 1990, which was published by BPS (National Bureau of Statistic)
3. Unpublished SAM 1990 by BPS.
4. National and Regional government budget (APBN and APBD)

Further more the definition of account should be *bottom lined* for analyzing the impact of fiscal decentralization, The IRSAM consist of 4 main accounts as follows:

Factors of Production Accounts
In obtaining regional proportions of factors of production in labor and capital, the only consistent information source that could be used was from the National SAM for 1990. This approach assumed that the micro regions proportions at the sectoral level were similar to the national proportions at corresponding level. To calculate the distribution of capital income from abroad for each micro region, the capital income from abroad in the National SAM for 1990 was assumed to be distributed in the proportion to the total capital income in each micro region. To obtain the sectoral labor and capital income for each macro region, the sectoral labor and capital income from each micro regions was summed up to the corresponding macro region. It should be noted that the total labor and capital income from each micro region did not accrue only to the institutions in the corresponding micro regions. In distributing the factorial income into institutions, which is discussed in the following section, that consideration was taken into account.

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[3] For detail discussion of constructing IRSAM 1990 see Luky Eko Wuryanto, "Fiscal Decentralization And The Economic Performance In Indonesia: An Interregional Computable General Equilibrium Approach, unpublished PhD dissertation Regional Science Program at Cornell University May 1996

Institutional Accounts

In the SAM framework, the factorial income was distributed to the institutional accounts. All of the labor income accrued to house hold in terms of wages and salaries, while the capital income was distributed to household as capital earning and to companies and government as retained profits or undistributed profits. In the case of capital income, this study assumed that the proportions of capital income that accrue to household at the region level were similar to proportions at the national level.

The total labor and capital income from each micro region are not attributable only to households in corresponding micro region because the process of producing 1 unit of commodity, each micro region must utilize input from the other micro regions. To determine the portion of total labor and capital income attributable to households within the region and to household in the other micro regions, information from Multiregional Input-Output table for 1990 was utilized.[4] This approach assumed that the distribution of sectoral factorial income corresponded to each micro region's contribution to production of 1 unit of commodity in particular micro region.

Government Accounts

These accounts were the central focus of this study. The estimation was intended to portray the prevailing varieties of procedures in government budget allocation process. Those accounts were broadly divided into government expenditures for current or routine purposes and government expenditures for investment or capital consumption purposes. A differentiation was also made between accounts for the central government and for the local government.

The term "Government Current Expenditure" includes government budgets for routine purposes and some portion of government budgets for development purposes. For estimating account for current government expenditure, information from the government consumption column of the final demand block in the Multiregional I/O table for 1990 was utilized directly. However, because that information did not differentiate between the consumption of the central and regional government, some data from the Ministry of Finance concerning sectoral allocation of current government expenditure was utilized to calculate the proportions between the two levels of government.

The estimation of government investment account was accomplished mainly utiliozed the data of realizatiuon of government budget for investment in 1989/90 and 1990/91 fiscal years. This data available from Ministry of Finance and The BAPPENAS (National development Planning Agency)

It should be realized that there is classification difference between the terms "sector" in government budget documents and the terms in production activities, some conversion matrix had to be adopted. The matrix ideally would be a result of comprehensive study of every item of expenditure in the government investment activities. Because the approach was considered impractical of the scope of this study a conversion matrix from secondary

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[4] For detailed discussion see, Luky Eko Wurryanto, "Fiscal Decentralization and The Economic Performance in Indonesia: An Interregional Computable General Equilibrium Approach," unpublished PhD. Dissertations, Regional Science Program at Cornell University, May 1996

type information based on Stavenuiter's work implemented in department of Man power was employed.[5]

Production Activities

The entries for the accounts were transferred directly from the entries in the intermediate demand block of the Multi Regional I/O table for 1990 after the adjustment procedure were done. It should be notes that for some typical SAM formats, entries that are transferred from an input-output table must be formatted in consumer price framework. One main reason for doing so is to have the best representation for the demand structure of the SAM table, which emerging institution account. That only be achieved through incorporating the institution's demand structure in consumer price format. However, there is the difference, in any economy, between the demand structure from producer' standpoint (supply side) and forma the consumer standpoint (demand side) because of trade and transport constraints. Therefore, the estimated IRSAM must add some account to reconcile the differences. In particular IRSAM framework, the differences were reconciled with the inclusion of separate account called trade and transport margin.

Others Account

These accounts include export and import, subsidies to production sectors, indirect taxes, element of central/local government revenues and expenditures, private investment, private capital account, government and private borrowing. The export, indirect taxes, private investment entries were obtained directly from adjusted Multi Regional I/O Table. The private investment entries were checked with data concerning private investment realization from National Investment Coordinator Board (BKPM).

Table 2.3 IRSAM 90 102 x 102 Classification

	Specification	Account
Factors	Labor Western Java and Jakarta	1
	Labor Central Java	3
	Labor Eastern Java	5
	Labor Sumatera	44
	Labor Kalimantan	46
	Labor Sulawesi	48
	Labor Eastern Island	51
	Capital Western Java and Jakarta	2
	Capital Central Java	4
	Capital Eastern Java	6
	Capital Sumatera	45
	Capital Kalimantan	47
	Capital Sulawesi	49
	Capital Eastern Island	51
Institution	Household Western Java and Jakarta	7
	Household Central Java	8
	Household Eastern Java	9
	Companies Java	10
	Household Sumatera	52
	Household Kalimantan	53
	Household Sulawesi	54
	Household Eastern Island	55

[5] For further discussion see Stan Stavenuiter, "Input Output Analysis for Indonesian Employment Planing," a summary report, April 1987, department of Man Power, UNDP/.ILO. The conversion matrix that study is presented in Appendix C

Table 2.3 IRSAM 90 102 x 102 Classification, continued

	Specification	Account
	Companies Outer Java	56
	Local Government Routine Expenditure	11,57
	Local Government Investment in Economic Infrastructure	12,58
	Local Government Investment in Social Infrastructure	13,59
	Local Government Invest in Gen Services & others	14,60
	Central Government Routine Expenditure	15,61
	Central Government Investment in Agriculture	16,62
	Central Government Investment in Industry and Mining	17,63
	Central Government Investment in Energy	18,64
	Central Government Investment Transport and Tourism	19,65
	Central Government Investment in Education	20,66
	Central Government Investment in Health	21,67
	Central Government Investment Housing and Water Supp.	22,68
	Central Government Investment in General Services	23,69
	Central Government Investment other	24,70
	Specified Development Transfer in Road Improvement	25,71
	Specified Development Transfer in Primary Education	26,72
	Specified Development Transfer in Health Facilities	27,73
	Specified Development Transfer in Reforestation	28,74
Production	Food Crops	29,75
Activity	Estate Crops	30,76
	Livestock	31,77
	Forestry	32,78
	Fisheries	33,79
	Mining	34,80
	Food Beverages and Tobacco	35,81
	Textile	36,82
	Wood Production and Construction	37,83
	Paper, Metal Product, and other manufacturing	38,84
	Chemicals, Basic Metal, and non metal product	39,85
	Electricity, Gas and Water	40,86
	Trade, Hotel and Restaurant	41,87
	Transportation and Communication	42,88
	Finance, Real Estate, Pub Adm. And Other Services	43,89
Exogenous	Trade and Transport Margin	90
	Indirect taxes	91
	Subsidies	92
	Local Government Current: Java	93
	Local Government Current: outside Java	94
	Local Government investment: Java	95
	Local Government investment: outside Java	96
	Central Government Current	97
	Central Government Investment	98
	Development Transfer	99
	Private Capital	100
	Rest of the world	101

Updating and Constructing IRSAM 1999

To meet the objectives of the paper as mentioned above we aggregated the IRSAM 102 x 102 sectors into 30 x 30 with two macro region: Java and Outer Island and 7 household micro regions: Western Java and Jakarta, Central Java, Eastern Java, Sumatera, Kalimantan Sulawesi, and Eastern Island.

Table 3.1 IRSAM 90 30x30

1	JAVA	Factor Prod
2		HHW Java
3		HHC Java
4		HHE Java
5		Companies
6		Regional Government Current
7		Regional Government Investment
8		Central Government Current
9		Central Government Investment
10		Agriculture
11		Mining
12		Manufacture
13		Utilities
14		Services
15	Outer JAVA	Factor Prod
16		Household Sumatera
17		Household Kalimantan
18		Household Sulawesi
19		Household Eastern Island
20		Companies
21		Regional Government Current
22		Regional Government Investment
23		Central Government Current
24		Central Government Investment
25		Agriculture
26		Mining
27		Manufacture
28		Utilities
29		Services
30		Exogenous

In updating the matrices within RAS method, we estimate the account of destination matrix as follows[6]:

1. The value of exogenous factors expenditures account estimate from the amount of return on foreign capital which is transferred to the origin country, the data from National SAM 1999[7] was utilized. In terms of income, the value estimate from the return on Indonesia investment abroad and wages/salaries obtained by the Indonesian labor (TKI) which is transferred into domestic. The same data from National SAM 1999 (account no. 1-23) was utilized.

2. Value of Exogenous household expenditure is accumulation from: imports, savings, indirect taxes. The data of income side estimate from institutional transfer from abroad. The data source is National SAM for 99 (account no.24-33). To distribute them into regional account the proportion of IRSAM for 1990 was utilized.

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[6] Extended discussion can be found in Satria Utama, "The Interregional Impact of Fiscal Decentralization in Indonesia: Inter Regional Social Accounting Matrix Model." unpublished Bachelor thesis, Economic Program at University of Indonesia, May 2003.
[7] Natinal Social Accounting Matrix for 1999, Bereau of Statistic Centre (BPS)

3. Values of companies exogenous expenditure come from retain earnings and foreign transfer conducted by company. The income side utilized data transferred income from abroad. All the data utilized National SAM 1999 (account no. 34), then distributed to Java and Other Island region equal to the proportion of IRSAM 1990.

4. Data of disaggregated of Government Account refers to the national and regional budget (APBN & APBD) 1998-1999 and 1999-2000.[8] The regional budgets data estimates from balance sheet consolidation of provinces and municipalities. In order to then avoiding double counting in calculation, we screened the balance sheet of provinces and municipalities and deduct the transfer payment from province to municipals. To distribute the amount of Central Government expenditure to the region the DAU and DAK proportions was utilized.

5. The exogenous amount of production activity is the export and import values and the indirect taxes minus subsidies. The income side value comes from data of investment in Indonesia which has increased production capacity. The data from National SAM 1999 (consolidated account no. 36–73) National Input-Output for 1999 were compared and utilized. For distributing to the each region the proportion of IRSAM 1990 utilized as reference.

6. RAS method of Updating IRSAM

After completing estimate the total and exogenous variable, the total of endogenous variable[1] was found. They were calculated as result of deducting the total and the exogenous account. The next pace is iterates the origin matrix using RAS method as follows:

1. First estimating the endogenous income "Shadow" matrix (Z) by multiplying input coefficient 1990 $\{A(0)\}$ with the output value of 1999 $\{X(1)\}$

2. Summing the columns side, as the result we obtained the income endogenous shadow transaction matrix $\{U^1\}$. The $\{U^1\}$ is compared with the matrix $\{U(1)\}$. Since the destination matrix is not identical with the base year, the value must be different. Figure the ratio (R). After that, multiply the matrix $A(0)$ with the value of ratio, as the result labeled (A^1). Repeating the first step, we multiply the matrix (A^1) with $\{X(1)\}$, the result is (Z^1) whose equal total columns with the total income of 1999 matrix.

3. Next sum the row from (Z^1) to get the expenditure endogenous shadow matrix $\{V^1\}$. Then we compared the value with total expenditure of matrix 1999. It should be different, and now we calculate the ratio between them, the result labeled matrix S. Then multiply the matrix (A^1) with the S, the result is matrix (A^2) when we multiply this matrix with $\{X(1)\}$ we found matrix (Z^2) whose the sum of the rows equal to the expenditure of endogenous accounts 1999 $\{V(1)\}$.

4. Repeating the first step by summing the column then adjust the matrix as the step above to get the A^3 matrix which is equal to the endogenous income of IRSAM 99. For the rows we applied the same formula to obtained the shadow matrix which equal to the endogenous expenditure of 1999.

5. The iterations in this study stop in the step of 69 iterations. The reason is the matrix shown divergences. The tolerance level of acceptance is the deviations not more than 5 % from destination matrix.[9]

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[8] ¼ from previous fiscal year (1998-1999) and ¾ current fiscal year (1999-2000)

[9] See, Adji Pratikto, " Dampak Pengeluaran Pembangunan Pemerintah terhadap Perekonomian Propinsi DKI Jakarta," unpublished Master Degree thesis, Economic Program at University of Indonesia, August 2002

Table 3.2 The Generalize IRSAM 99 (updated) 30 x 30

		1	2	3	4	5	6	7	8	9	10
						JAWA					
JAWA	1 Faktor Produksi	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	140.451,18
	2 RT. DKI + JABAR	184.363,78	162,69	12,88	8,57	260,02	18,78	0,00	356,87	0,00	0,00
	3 RT JATENG	100.489,69	11,57	99,77	15,21	187,85	16,59	0,00	127,56	0,00	0,00
	4 RT JATIM	119.303,76	1,76	1,23	147,65	196,67	17,16	0,00	342,30	0,00	0,00
	5 Perusahaan	72.484,73	0,00	0,00	0,00	12.169,94	0,00	0,00	0,00	0,00	0,00
	6 Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	7 Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	8 Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	9 Angg. Pemb Pusat	0,00	0,00	0,00	0,00	0,00	0,00	3,45	40,55	28,13	27.228,11
	10 Pertanian	0,00	21.145,83	13.327,75	18.463,83	0,00	0,00	0,00	0,00	0,00	273,73
	11 Pertambangan	0,00	8,58	0,00	0,00	0,00	1.514,52	4.316,74	8.148,72	20.155,88	39.697,17
	12 Manufaktur	0,00	65.977,12	33.558,76	52.895,47	0,00	56,32	0,00	296,72	0,00	246,20
	13 Utilities	0,00	1.670,06	625,73	1.055,90	0,00	9.993,75	132,76	53.770,34	692,43	8.951,30
	14 Jasa	0,00	79.758,65	31.904,17	50.777,56	0,00	0,00	0,00	0,00	0,00	0,00
LUAR JAWA	15 Faktor Produksi	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	16 RT. SUMATERA	22.403,90	15,90	12,39	1,65	0,00	0,00	0,00	0,00	0,00	0,00
	17 RT. KALIMANTAN	6.351,59	5,37	2,14	4,30	0,00	0,00	0,00	0,00	0,00	0,00
	18 RT. SULAWESI	12.960,98	2,41	0,68	3,91	0,00	0,00	0,00	0,00	0,00	0,00
	19 RT. BG. TIMUR IND.	17.348,87	4,90	1,61	9,27	0,00	0,00	0,00	0,00	0,00	0,00
	20 Perusahaan	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	21 Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	22 Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	23 Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	24 Angg. Pemb Pusat	0,00	6.247,80	342,89	515,75	0,00	0,00	0,00	22,15	0,00	2.861,56
	25 Pertanian	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6,72
	26 Pertambangan	0,00	4.013,27	1.547,86	1.018,91	0,00	0,00	0,00	362,09	137,67	1.177,53
	27 Manufaktur	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	28 Utilities	0,00	789,76	872,54	837,21	0,00	0,00	0,00	305,66	0,00	118,64
	29 Jasa	0,00	40.434,18	22.769,44	25.028,26	168.349,82	0,00	0,00	0,00	0,00	20.985,19
	30 Eksogen	36.762,55	220.249,87	105.079,85	150.783,44	181.164,30	11.617,12	4.452,95	63.772,96	21.014,11	241.997,34
	Total	572.469,85	217.817,34	103.968,34	149.084,77	181.878,72	11.463,39	4.392,10	62.966,21	20.726,94	238.968,28
	Pengeluaran Aktual	602.225,33	2.432,54	1.111,52	1.698,68	-714,42	153,73	60,85	806,75	287,17	3.029,06
	Selisih	-29.755,49	1,12	1,07	1,14	-0,39	1,34	1,39	1,28	1,39	1,27
	Perbedaan (%)	-4,94									

Table 3.2 The Generalize IRSAM 99 (*updated*) 30×30, continued

Columns 12–16 are grouped under "Jawa"; columns 17–20 are grouped under "Luar Jawa".

Region	No	Account	11	12	13	14	15	16	17	18	19	20
				Jawa					Luar Jawa			
JAWA	1	Faktor Produksi	25.937,12	155.892,91	4.507,24	272.028,00	0,00	0,00	0,00	0,00	0,00	0,00
	2	RT. DKI+JABAR	0,00	0,00	0,00	0,00	32.479,84	25,16	7,05	4,54	7,31	0,00
	3	RT JATENG	0,00	0,00	0,00	0,00	2.930,31	3,04	0,01	0,11	3,21	0,00
	4	RT JATIM	0,00	0,00	0,00	0,00	28.975,95	2,00	5,99	1,23	2,82	0,00
	5	Perusahaan	0,00	0,00	0,00	0,00	43.907,24	0,00	0,00	0,00	0,00	0,00
	6	Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	7	Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	8	Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	9	Angg. Pemb Pusat	0,00	0,00	0,00	0,00	0,00	0,00	1.464,31	0,00	0,00	0,00
	10	Pertanian	8,47	129.664,97	0,00	19.084,63	0,00	2.698,86	0,00	0,00	0,00	0,00
	11	Pertambangan	232,09	19.097,94	879,20	60,27	0,00	16.616,79	10.622,43	8.416,30	12.335,99	0,00
	12	Manufaktur	3.403,13	507.292,35	9.639,22	142.926,28	0,00	220,90	96,22	101,15	163,52	0,00
	13	Utilities	19,81	6.242,60	4.023,75	8.802,02	0,00	6.892,09	380,25	2.067,18	1.798,44	0,00
	14	Jasa	5.074,03	65.519,13	1.073,57	144.290,26	0,00	0,00	0,00	0,00	0,00	0,00
LUAR JAWA	15	Faktor Produksi	0,00	0,00	0,00	0,00	0,00	223,44	3,23	2,72	0,69	224,0
	16	RT. SUMATERA	0,00	0,00	0,00	0,00	127.284,73	1,68	78,29	1,52	0,17	56,2
	17	RT. KALIMANTAN	0,00	0,00	0,00	0,00	39.157,31	4,58	0,27	27,46	0,74	76,8
	18	RT. SULAWESI	0,00	0,00	0,00	0,00	27.865,06	0,79	0,59	0,57	29,24	84,5
	19	RT. BG. TIMUR IND.	0,00	0,00	0,00	0,00	27.623,93	0,00	0,00	0,00	0,00	6.565,0
	20	Perusahaan	0,00	0,00	0,00	0,00	67.372,73	0,00	0,00	0,00	0,00	0,00
	21	Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	22	Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	23	Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	24	Angg. Pemb Pusat	0,00	0,00	0,00	4.634,55	0,00	0,00	6.549,57	6.573,97	6.993,09	0,00
	25	Pertanian	6,07	29.975,84	0,00	35,69	0,00	23.655,03	0,00	0,00	0,00	0,00
	26	Pertambangan	84,71	46.712,88	2.981,85	7.971,61	0,00	0,00	5.532,63	6.437,12	3.730,18	0,00
	27	Manufaktur	15,90	38.191,61	3.353,58	0,00	0,00	41.044,25	155,39	125,23	129,74	0,00
	28	Utilities	0,00	0,00	0,00	3.117,80	0,00	605,04	9.872,97	8.388,72	9.895,11	0,00
	29	Jasa	86,94	1.407,27	8,01	42.285,42	22.909,47	32.566,22	11.492,07	9.441,81	10.756,27	75.949,6
	30	Eksogen	382,51	303.877,41	71,79		420.506,57	27.773,90				
		Total	35.250,78	1.303.874,91	26.538,21	645.236,54	645.236,57	152.333,77	46.261,26	41.589,64	45.846,52	82.956,3
		Pengeluaran Aktual	34.773,26	1.290.199,77	26.176,13	636.998,85	442.573,98	150.660,64	45.795,70	41.155,79	45.373,24	83.346,6
		Selisih	477,51	13.675,14	362,08	8.237,69	-22.067,41	1.673,13	465,56	433,85	473,28	-390,3
		Perbedaan (%)	1,37	1,06	1,38	1,29	-4,99	1,11	1,02	1,05	1,04	-0,4

Table 3.2 The Generalize IRSAM 99 (updated) 30 x 30, continued

#	Region		21	22	23	24	25	26	27	28	29	30 Eksogen	Total
1		Faktor Produksi	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3.408,89	602.225,33
2		RT. DKI + JABAR	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	109,85	217.817,34
3		RT JATENG	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	83,43	103.968,34
4		RT JATIM	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	86,24	149.084,77
5		Perusahaan	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	53.316,81	181.878,72
6		Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11.463,39	11.463,39
7		Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4.392,10	4.392,10
8	JAWA	Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	62.966,21	62.966,21
9		Angg. Pemb Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	20.726,94	20.726,94
10		Pertanian	0,00	0,00	0,00	0,00	79,51	0,00	1.919,79	0,00	146,05	3.664,02	238.968,28
11		Pertambangan	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	14.221,44	34.773,26
12		Manufaktur	0,00	0,00	11.558,97	7.704,59	15.263,84	10.659,18	41.006,34	931,15	32.994,58	232.564,24	1.290.199,77
13		Utilities	0,00	0,00	308,53	0,00	81,18	28,45	691,45	207,12	1.238,48	0,00	26.176,13
14		Jasa	0,00	0,00	7.265,39	179,71	3.069,92	14.964,48	8.271,02	72,14	15.327,20	124.773,08	636.998,85
15		Faktor Produksi	0,00	0,00	0,00	0,00	114.613,65	137.814,14	58.425,89	1.082,98	129.150,72	1.486,59	442.573,98
16		RT. SUMATERA	11,54	0,00	379,78	0,00	0,00	0,00	0,00	0,00	0,00	96,68	150.660,64
17		RT. KALIMANTAN	3,14	0,00	109,72	0,00	0,00	0,00	0,00	0,00	0,00	24,16	45.795,70
18		RT. SULAWESI	3,56	0,00	176,08	0,00	0,00	0,00	0,00	0,00	0,00	33,22	41.155,79
19		RT. BG. TIMUR IND.	4,85	0,00	227,90	0,00	0,00	0,00	0,00	0,00	0,00	36,21	45.373,24
20		Perusahaan	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	9.408,85	83.346,63
21		Angg. Rutin Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11.436,65	11.436,65
22	LUAR JAWA	Angg. Pemb Pemda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	29.305,51	29.305,51
23		Angg. Rutin Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	91.563,04	91.563,04
24		Angg. Pemb Pusat	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	30.140,31	30.140,31
25		Pertanian	0,00	12,09	112,16	35,34	31.656,16	79,28	83.802,42	0,00	13.938,57	5.629,18	223.643,49
26		Pertambangan	0,00	0,00	0,00	0,00	45,31	2.393,54	98.692,73	1.297,34	25,89	54.226,57	206.503,24
27		Manufaktur	920,72	29.004,03	5.778,27	22.016,07	31.367,58	10.317,94	107.589,58	2.883,25	50.509,56	115.261,84	490.183,05
28		Utilities	79,51	0,00	514,39	0,00	248,33	78,57	1.373,14	868,22	3.273,73	0,00	7.451,28
29		Jasa	10.566,95	694,87	66.316,77	621,77	7.719,40	14.557,04	18.476,16	192,63	57.713,12	66.438,18	311.563,76
30		Eksogen	0,00	0,00	0,00	0,00	22.289,61	18.218,05	75.677,55	19,37	11.389,36	244.304,01	1.191.167,63
		Total	11.590,27	29.711,00	92.747,96	30.557,49	226.434,50	209.110,68	495.926,07	7.554,20	315.707,27	1.191.167,63	
		Pengeluaran Aktual	11.436,65	29.305,51	91.563,04	30.140,31	223.643,49	206.503,24	490.183,05	7.451,28	311.563,76	1.191.167,40	

Table 3.3

Structure of Income Multipliers on Government Expenditure Account Injection
(Based on Generalized IRSAM 99)

JAVA	Reg Govt Curr	Reg Govt Inv	Cen Govt Curr	Cen Govt Inv	OUT. JAVA	Reg Govt Curr	Reg Govt Inv	Cen Govt Curr	Cen Govt Inv
JAVA	0.353	0.240	0.355	0.240	HHW Java	0.196	0.166	0.215	0.185
	0.186	0.123	0.185	0.123	HHC Java	0.076	0.065	0.091	0.080
	0.233	0.160	0.235	0.160	HHE Java	0.144	0.121	0.153	0.131
	0.773	0.523	0.775	0.523	Java	0.416	0.352	0.459	0.395
%	77.930	73.356	77.807	73.190	%	45.067	45.482	50.434	52.209
	0.105	0.095	0.106	0.096	HH Sumatera	0.283	0.235	0.248	0.199
	0.031	0.029	0.032	0.029	HH Kalimantan	0.087	0.072	0.076	0.061
	0.038	0.031	0.038	0.031	HH Sulawesi	0.068	0.056	0.062	0.050
	0.045	0.036	0.046	0.036	HH Eastern Island	0.070	0.058	0.066	0.053
	0.219	0.190	0.221	0.192	Outer Island	0.508	0.421	0.451	0.362
%	22.070	26.644	22.193	26.810	%	54.933	54.518	49.566	47.791
Total	0.991	0.713	0.996	0.715	Total	0.924	0.773	0.910	0.757
%	100.000	100.000	100.000	100.000	%	100.000	100.000	100.000	100.000

Table 3.4
Structure of Output Multiplier on Government Account Injection
Based on Generalized IRSAM for 1999

JAVA	Reg Govt Curr	Reg Govt Inv	Cen Govt Curr	Cen Govt Inv	OUT. JAVA	Reg Govt Curr	Reg Govt Inv	Cen Govt Curr	Cen Govt Inv
Agriculture	0.327	0.352	0.326	0.351	Agriculture	0.188	0.165	0.220	0.213
Mining	0.024	0.036	0.024	0.036	Mining	0.016	0.013	0.019	0.019
Manufact	1.494	2.327	1.486	2.313	Manufact	0.964	0.836	1.171	1.223
Utilities	0.049	0.028	0.049	0.028	Utilities	0.026	0.019	0.031	0.021
Services	1.627	0.486	1.606	0.489	Services	0.411	0.339	0.525	0.374
Java	3.522	3.228	3.491	3.217	Java	1.605	1.372	1.965	1.851
%	85.679	84.211	85.134	83.870	%	38.856	33.950	48.107	46.426
Agriculture	0.161	0.163	0.163	0.165	Agriculture	0.331	0.441	0.298	0.370
Mining	0.106	0.133	0.107	0.135	Mining	0.177	0.359	0.166	0.300
Manufact	0.219	0.217	0.228	0.226	Manufact	0.654	1.590	0.564	1.231
Utilities	0.003	0.003	0.003	0.003	Utilities	0.028	0.011	0.023	0.009
Services	0.101	0.088	0.108	0.089	Services	1.335	0.269	1.069	0.226
Outer Island	0.589	0.605	0.610	0.619	Outer Island	2.525	2.669	2.120	2.136
%	14.321	15.789	14.866	16.130	%	61.144	66.050	51.893	53.574
Total	4.111	3.833	4.101	3.836	Total	4.130	4.041	4.085	3.987
%	100.000	100.000	100.000	100.000	%	100.000	100.000	100.000	100.000

DATA ANALYSIS

Multiplier Effect of Government Account Injection

From the table 3.3 above the effect of Government Account Injection focused on Income Multiplier Analysis. When government current (both local and central) expenditure originated in Java, the effect accrued most in Java Region (77.93% from regional and 77.807% from central). The *spillover* impact is the rest (22.069% from regional and 22.192% from central). While the injection originated from Outer Java its impact distribute more equally between Java and Outer Java. The magnitude of multiplier effect in Java reach 45.066% and the rest accrued in the origin region, Outer Island (54.933 %). The data indicates that the Indonesian economic still dependent with the Java region. This phenomenon also showed that most of the labor forces or capital utilized in Outer Java came from Java. The similar condition accrued in the government investment spending as shown in table 3.3

When we observed more, the best strategy in injecting government account is through the intergovernmental transfer from Outer Java, from the data above expenditures spend from local government (both current and investment) has greater effect than the central government direct expenditure. The other advantage of injected government account through the local it also generate greater intra-regional income.

In terms of output multiplier we obtained that the multiplier effect from the Government Current Account both from regional and central in all regions is always greater than the Government Investment Account. The reason is in government current expenditures, the values of sectional (or total) output multiplier reflect only the sectoral (or total) output increase (demanded) for 1 rupiah of government consumption. In government investment expenditure, the values of sectoral (or total) output multipliers reflect only the sectoral (or total) output increase (demanded) for 1 rupiah of government purchases on investment goods during the construction period. Thus, similarly to case of income multipliers, the output multipliers in the government investment expenditure do not capture the additional output generated by the increase of economic growth that can be expected as completed investment projects would presumably improve the general production capacity.

Examining the effect of government injection to the production activities, we conclude that the highest impact from government current expenditures (both in Java and Outer Java) are always found in services sector. When the spending originates from Java, multiplier effect reach 85.67 % in Java, and the Outer Island received the rest, 14.321 %. In the other hand while the injection originated in Outer Java, Java region received 38.856 % of the output multiplier. From the table 3.4 above showed that the income multiplier while the injection originated from the Outer java is created greater multiplier and more equally.

Output multiplier analysis also shows while the multiplier output accrued not in the origin region (such as the injection originated from Java and the multiplier discussed is in Outer Java) most of them impact the manufacture sector as the highest. The main reason why services received the highest multiplier impact is the most of the current expenditures component is routine spending or purchase regularly. The services sectors characterized the same type.

In term of Government Investment Expenditure in both regions highest value of output multiplier is always found in manufacturing sector. The condition is the same for both

Central and Local Government. It is considerate because most of the investment spending is to purchase capital goods which utilized to increase the production capacity. And most of them is produced by manufacturing sectors.

Further more the same phenomenon repeated, the spending in investment originates from Java has less spill over effect than spending originates from Outer Java. It shown in the table 4.4 that the government injection in investment from java result 84.21 % multiplier effect in Java and just only 15.789 %. The same condition also worked in Central Government Investment account. It showed that the supply for capital goods and services in the Outer Island still dependent from Java region industries. The Best strategy in government spending is allocating the investment in Outer Java. In addition to provide the vacancies for labor force, allocating injection in Outer Java also reducing the disparities between two regions and also promote the region's manufacturing activities.

The Structural Path Analysis

After calculating the multiplier effect, we would explore the structural path of the injection of government account. The objectives of observing it is to show the *path* from the government account injection to the household. By knowing this path, we recognize which sector and household in the IRSAM for 1999 system influences much to the income distribution.

Figure 4.1 Structural Path of Java Local Government Routine injection
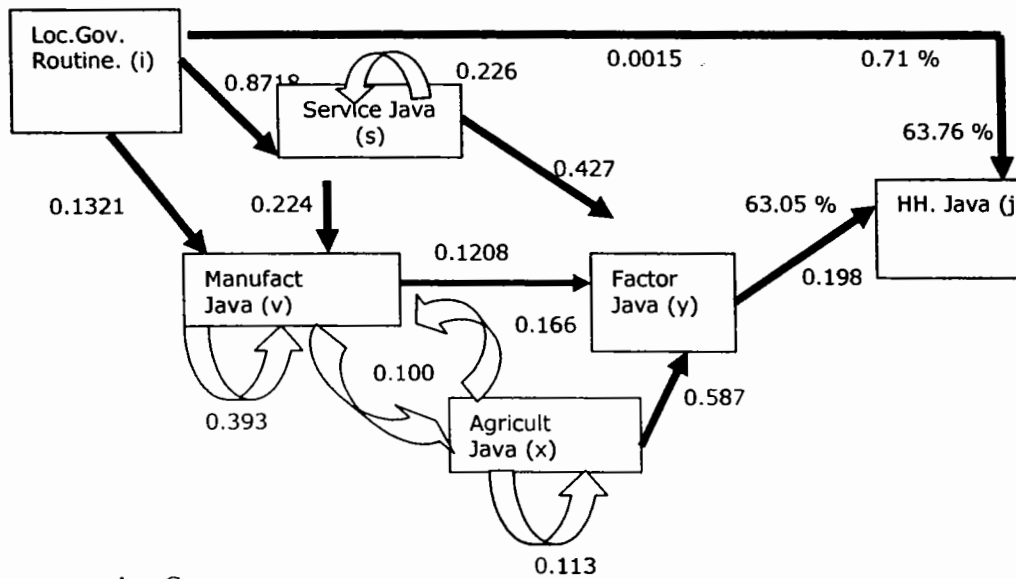
1. C_{ji}

2. $C_{si} \cdot C_{ys} \cdot C_{jy}[1-C_{ss}]^{-1}$

3. $[(C_{si} \cdot C_{vs})+C_{vi}] \cdot C_{yv} \cdot C_{jy}[1-C_{vv}-C_{ss}-(C_{xv} \cdot C_{vx})]^{-1}$

4. $[(C_{si} \cdot C_{vs})+C_{vi}] \cdot C_{xv} \cdot C_{yx} \cdot C_{jy}[1-C_{vv}-C_{xx}-C_{ss}-(C_{xv} \cdot C_{vx})]^{-1}$

Figure 4.2 Structural Path of Java Local Government Investment Injection
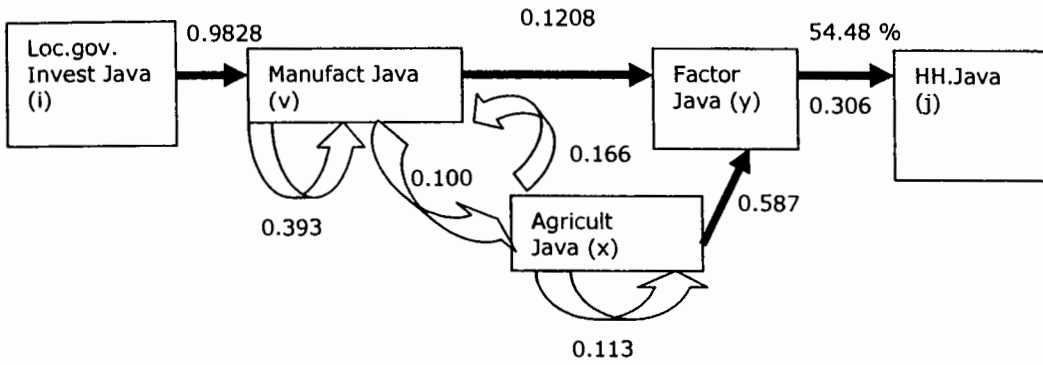
1. $\quad C_{vi} \cdot [1 - C_{vv} - C_{xv} \cdot C_{vx}]^{-1} \cdot C_{yv} \cdot C_{jy}$

2. $\quad C_{vi} \cdot [1 - C_{vv} - C_{xx} - (C_{xv} \cdot C_{vx})]^{-1} \cdot C_{xv} \cdot C_{yx} \cdot C_{jy}$

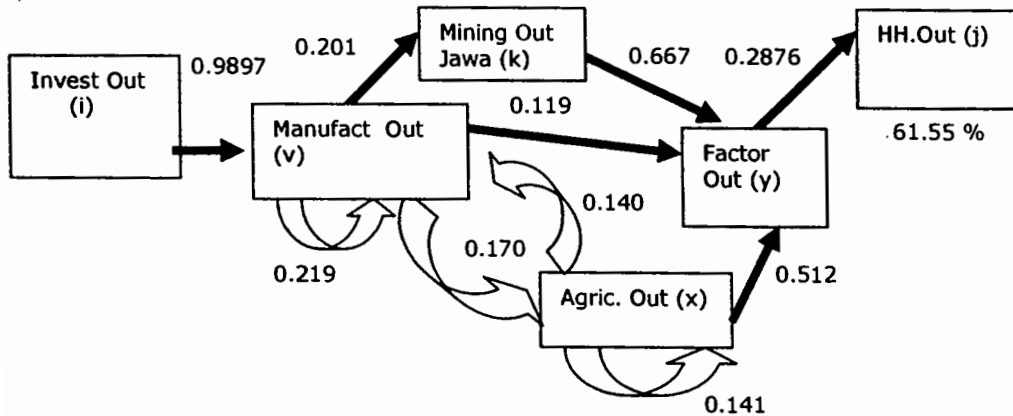Figure 4.3 Structural Path of Outer Island Local Government Routine Injection
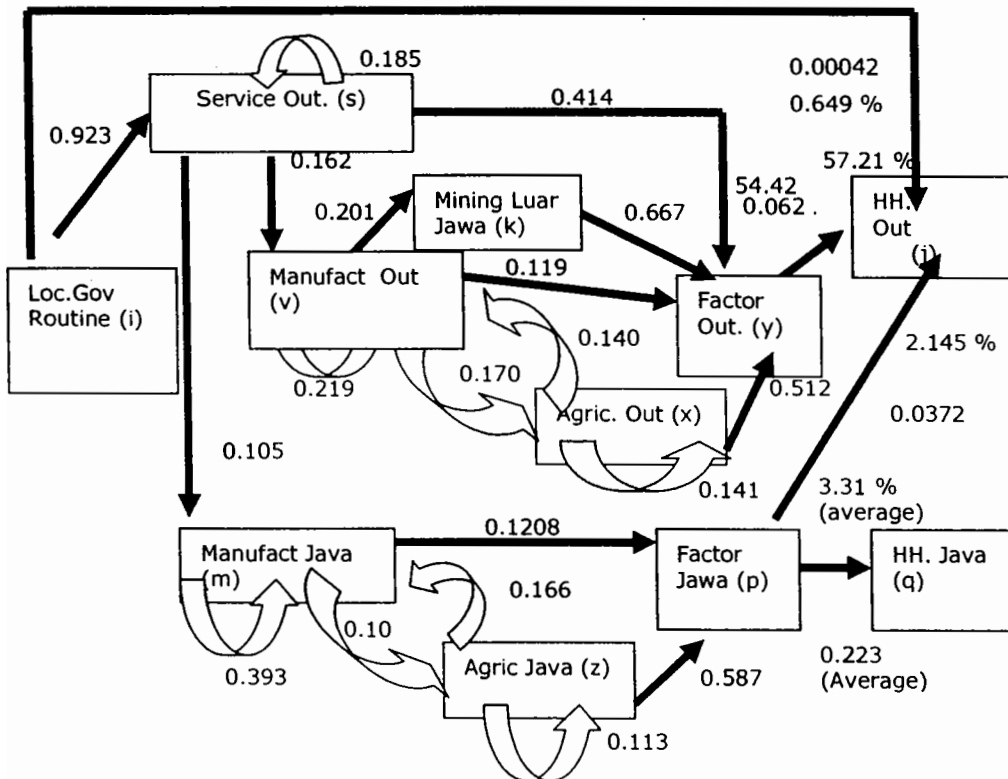
Value added in Outer Island

1. C_{ji}

2. $C_{si} \cdot C_{ys} \cdot C_{jy} [1 - C_{ss}]^{-1}$

3. $C_{si} \cdot C_{vs} \cdot C_{jy} \cdot [(C_{ky} \cdot C_{yk}) + Cyv] \cdot [1 - C_{ss} - C_{vv} - (C_{xv} \cdot C_{vx})]^{-1}$

4. $C_{si} \cdot C_{vs} \cdot C_{xv} \cdot C_{yx} \cdot C_{jy} [1-C_{ss}-C_{vv}-C_{xx}-(C_{xv} \cdot C_{vx})]^{-1}$

5. $C_{si} \cdot C_{ms} \cdot C_{pm} \cdot C_{jp} [1-C_{ss}-C_{mm}-(C_{zm} \cdot C_{mz})]^{-1}$

6. $C_{si} \cdot C_{ms} \cdot C_{zm} \cdot C_{pz} \cdot C_{jp} [1-C_{ss}-C_{mm}-C_{zz}(C_{zm} \cdot C_{mz})]^{-1}$

Value added in Java

1. $C_{si} \cdot C_{ms} \cdot C_{pm} \cdot C_{qp} [1-C_{ss}-C_{mm}-(C_{zm} \cdot C_{mz})]^{-1}$

2. $C_{si} \cdot C_{ms} \cdot C_{zm} \cdot C_{pz} \cdot C_{qp} [1-C_{ss}-C_{mm}-C_{zz}(C_{zm} \cdot C_{mz})]^{-1}$

Figure 4.4 Structural Path of Outer Island Local Government Investment Injection

1. $C_{vi} \cdot C_{jy} \cdot [(C_{ky} \cdot C_{yk}) + Cyv] \cdot [1 - C_{vv} - (C_{xv} \cdot C_{vx})]^{-1}$

2. $C_{vi} \cdot C_{xv} \cdot C_{yx} \cdot C_{jy} [1- C_{vv}-C_{xx}-(C_{xv} \cdot C_{vx})]^{-1}$

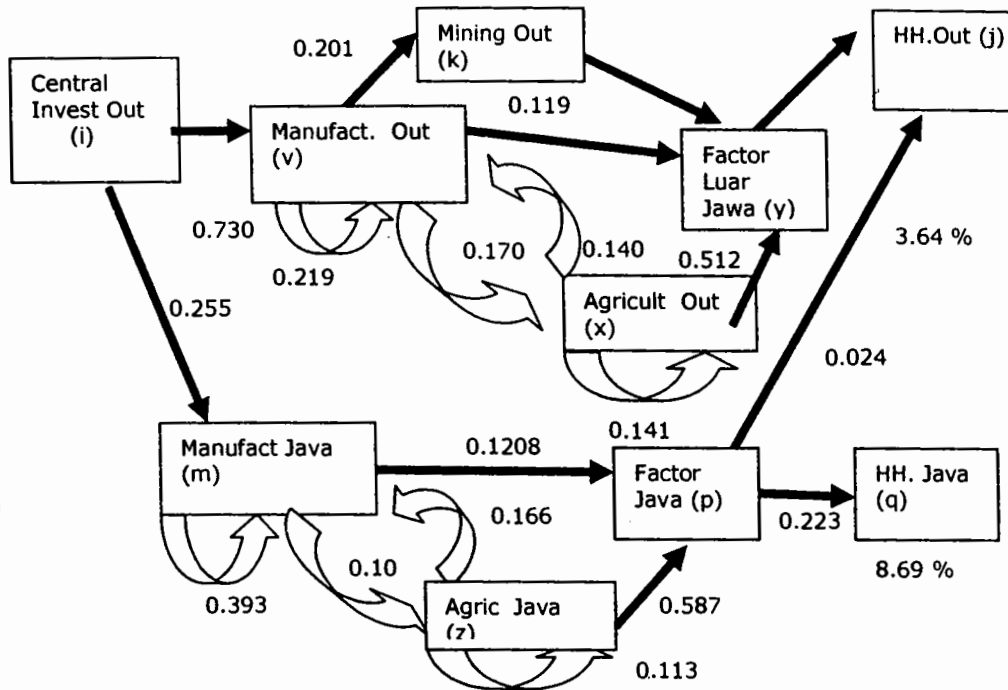Figure 4.5 Structural Path of Central Government Routine Injection from Outer Island
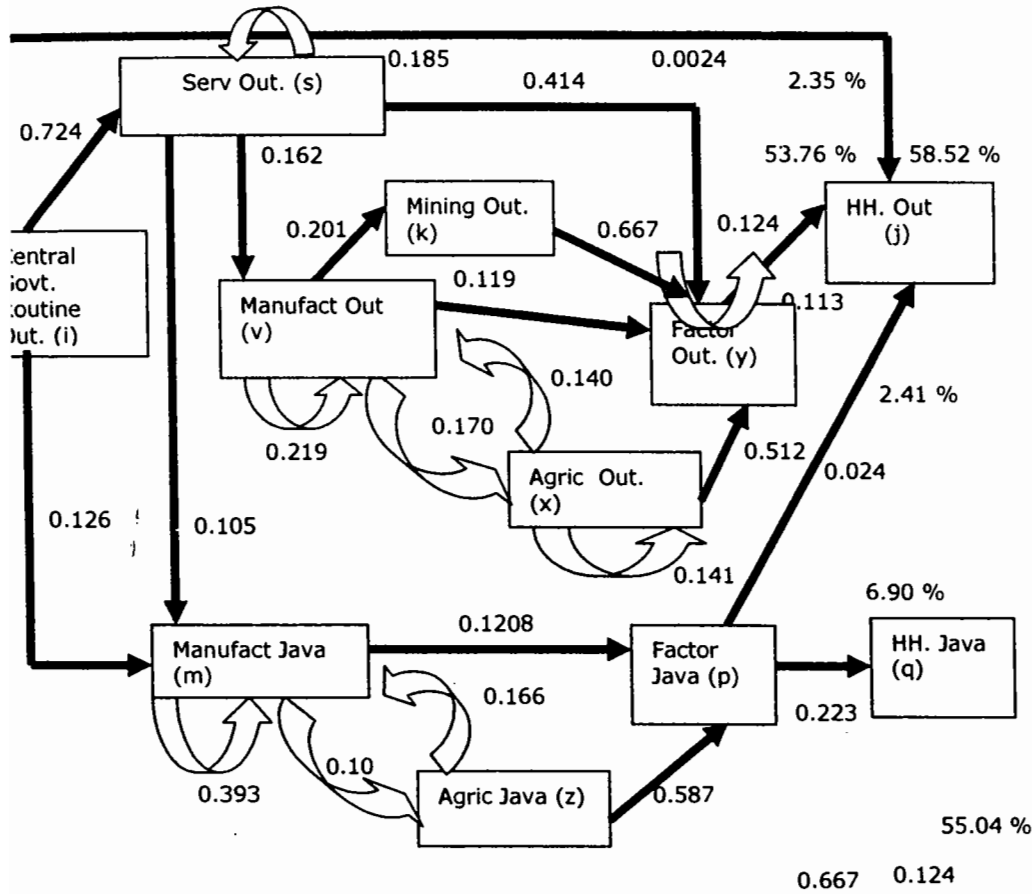
Additional Value added in Java

1. $[(C_{si} \cdot C_{ms}) + C_{mi}] \cdot C_{pm} \cdot C_{qp} [1 - C_{ss} - C_{mm} - (C_{zm} \cdot C_{mz})]^{-1}$

2. $[(C_{si} \cdot C_{ms}) + C_{mi}] \cdot C_{zm} \cdot C_{pz} \cdot C_{qp} [1 - C_{ss} - C_{mm} - C_{zz}(C_{zm} \cdot C_{mz})]^{-1}$

Figure 4.5
Structural Path of Central Government Investment Injection from Outer Island

From the structural path analysis above, we conclude the main sectors in Java are Services, Manufacture and Agriculture. In the outer Island the main sectors which evolve much in distributing income are Manufacturing, Services, Mining, and Agriculture. From the path above we also noticed that the injection account from Java Island effect insignificantly to the outer island, but the injection from outer island increase the income of Java's industries and household significantly. When we observe the central government account expenditures, we could see that the central government injection from the Outer Island region has a greater spill over effect to the Java, rather than the injection from the local government.

From the structural path above, the best strategy is allocating the expenditures from local government through intergovernmental transfer from the outer island

Shock Variable Simulation

As mentioned above, after implementing the decentralization in fiscal policy, central government of Indonesia not involves much in managing local budget allocation. Central government transferred the fund to the region through General Purposes Grant (DAU), Specific Purposes Grant (DAK), and Balancing Fund (BF) which consists of tax sharing, and natural resource income sharing

This section would explore the impact regional government budget for the fiscal year 2002 and the compare with the initial matrix of IRSAM 99. The objective is to know whether the budget allocation of regional government of 2002 is generate equal income, reducing the disparities and encourage the national economic growth.

Before implies the simulations the following assumption should be noted:

1. The sock variables utilized are DAU, DAK and BF of fiscal year 2002. All the data compiled from Dirjen Perimbangan Keuangan pusat dan Daerah, Ministry of Finance, Indonesia

2. All the transferred payment distributed to both current and investment expenditures of region government.

3. DAK is subject to be earmarked the allocation must in the following sectors: Infrastructure (road and irrigation), government Infrastructure, Public Health and Public Education. The consequence is DAK can be only utilized through Regional Investment Expenditure Account

4. DAU is the grant that local government has authority in its allocation, under the definition, we assumed that the most routine expenditures financed from DAU. The main reason is the only DAU grant is fixed amount and distributed by the central government in the early fiscal year. The distribution of DAU for routine and investment purposes depend on the ratio of SDO and INPRES before fiscal decentralization.

5. Balancing Finance which consist of income sharing on tax and natural resources do not have fix income scheduled, also the payment of BF is not all in early fiscal year, under this condition we generate assumption that all the fund is allocated in regional investment expenditure.

In analyzing utilized shock variable considered the result of income and output multiplier above, then the analysis restricted under the following scenarios:

1. Scenario I, the simulation utilized shock variable DAU, DAK, BF then distributed as the proportion of IRSAM 99. The objective behind this simulation is to estimate the actual income of the whole economics with the current government expenditure. It also means that government has no authority change the allocation behavior to preferred sectors and household.

2. Scenario II. In this scene the local government has authority to change allocation of the budget. The scenario will allocate the budget to the sectors depend on the value of the global influence. The objectives behind this simulation are to optimize the income of whole economics and to measure the disparities among the region.

3. Scenario III. In this scenario the expenditure will be allocated in the sectors which have significant value in global influence. The difference from simulation II is it also considered the magnitude of direct influence to the factors. The objective of this simulation is to optimize the household income significantly.

4. Scenario IV, in this simulation the transferred fund will be allocated almost in the same proportion in all sectors and household. The allocation based on the sum of the global influence of all sectors.

Figure 4.6 Consolidated Regional Finance (billion Rupiahs)[10]

	Java	Outer Island
DAU (General Purposes)	31.366,31	45.611,680
DAK (Specific Purposes)	524,145	1.743,855
Balancing Fund	4.929,517	14.272,923

[10] All the local government budget value utilized data from Dirjen Perimbangan Keuangan Pusat dan Daerah, Ministry of Finance, All the data download from www.djpkpd.go.id

Figure 4.7 Distributing of DAU, DAK and BF

	Routine Java	Inv. Java	Routine Outer	Inv. Outer
DAU	29.542,673	1.823,324	38.592,043	7.019,638
DAK		524,145		1.743,855
BF		4.929,517		14.272,923
Total	29.542,673	7.276,986	38.592,043	23.036,416

Figure 4.8 Local Budget Allocations in IRSAM 1999

Java	Routine Java				Investment Java			
	I	II	III	IV	I	II	III	IV
HH. West. +DKI	0.16%	7.29%	12.03%	6.63%	0.00%	0.00%	0.00%	0.00%
HH. Cent. Java	0.14%	3.85%	6.35%	6.44%	0.00%	0.00%	0.00%	0.00%
HH. East. Java	0.15%	4.81%	7.92%	6.76%	0.00%	0.00%	0.00%	0.00%
Agriculture	0.00%	6.41%	6.68%	7.80%	0.08%	9.07%	11.85%	9.73%
Mining	0.00%	0.50%	0.59%	8.33%	0.00%	0.98%	1.45%	10.39%
Manufacture	13.04%	30.72%	21.13%	6.98%	96.94%	63.15%	54.47%	8.70%
Utilities	0.48%	1.00%	0.92%	8.92%	0.00%	0.67%	0.77%	11.13%
Services	86.03%	34.27%	34.01%	8.19%	2.98%	11.17%	13.90%	10.22%
Total Java	100.00%	88.87%	89.64%	60.05%	100.00%	85.04%	82.44%	50.17%
Outer Island								
HH. Sumatera	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HH Kalimantan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HH. Sulawesi	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HH. Eastern Island	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agriculture	0.00%	3.03%	2.94%	7.53%	0.00%	4.03%	4.91%	9.39%
Mining	0.00%	2.12%	2.21%	7.45%	0.00%	3.52%	4.59%	9.29%
Manufacture	0.00%	4.24%	3.48%	7.68%	0.00%	5.46%	5.62%	9.58%
Utilities	0.00%	0.05%	0.05%	9.00%	0.00%	0.06%	0.07%	11.22%
Services	0.00%	1.69%	1.69%	8.29%	0.00%	1.89%	2.37%	10.35%
Total Outer Island	0.00%	11.13%	10.36%	39.95%	0.00%	14.96%	17.56%	49.83%
Total Indonesia	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Java	Routine Outer Island				Investment Outer Island			
	I	II	III	IV	I	II	III	IV
HH. West. +DKI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HH. Cent. Java	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HH. East. Java	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agriculture	0.00%	3.66%	3.87%	7.34%	0.00%	3.68%	4.43%	9.73%
Mining	0.00%	0.32%	0.38%	7.84%	0.00%	0.31%	0.43%	10.39%
Manufacture	0.00%	19.94%	13.93%	6.57%	0.00%	19.70%	15.67%	8.70%
Utilities	0.00%	0.51%	0.48%	8.40%	0.00%	0.42%	0.44%	11.13%
Services	0.00%	7.60%	7.65%	7.72%	0.00%	7.06%	8.10%	10.22%
Total Java	0.00%	32.03%	26.32%	37.88%	0.00%	31.16%	29.07%	50.17%
Outer Island								
HH. Sumatera	0.10%	6.30%	10.54%	6.45%	0.00%	0.00%	0.00%	0.00%

HH Kalimantan	0.03%	1.93%	3.23%	5.95%	0.00%	0.00%	0.00%	0.00%
HH. Sulawesi	0.03%	1.49%	2.49%	6.09%	0.00%	0.00%	0.00%	0.00%
HH. Eastern Island	0.04%	1.54%	2.58%	6.00%	0.00%	0.00%	0.00%	0.00%
Agriculture	0.00%	6.97%	6.88%	7.09%	0.04%	11.06%	12.41%	9.39%
Mining	0.00%	3.87%	4.09%	7.02%	0.00%	9.37%	11.28%	9.29%
Manufacture	7.94%	14.56%	12.12%	7.24%	97.62%	41.96%	39.79%	9.58%
Utilities	0.69%	0.64%	0.61%	8.47%	0.00%	0.26%	0.28%	11.22%
Services	91.17%	30.66%	31.14%	7.81%	2.34%	6.20%	7.17%	10.35%
Total Outer Island	100.00%	67.97%	73.68%	62.12%	100.00%	68.84%	70.93%	49.83%
Total Indonesia	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Figure 4.9 Simulation Result

	Simulation			
Java	I	II	III	IV
HH. West. +DKI	15.1623	684.3460	1,128.1575	622.2002
HH. Cent. Java	7.0729	190.7311	314.4239	318.8665
HH. East. Java	9.1332	297.1505	489.8583	417.8460
Agriculture	1.7955	1,071.5701	1,193.8167	1,609.2862
Mining	0.0000	8.1674	10.5658	148.0361
Manufacture	20,788.0938	32,080.2392	24,270.1872	7,745.9753
Utilities	6.2538	19.7629	18.7127	242.8989
Services	38,004.4164	16,785.4826	16,818.2140	5,468.4435
Total Java	58,831.9279	51,137.4499	44,243.9360	16,573.5528
%	41.702%	57.230%	53.834%	52.237%
Outer Island				
HH. Sumatera	10.1573	642.7151	1,075.9197	657.7053
HH Kalimantan	0.8477	60.3172	100.9723	186.0489
HH. Sulawesi	0.7405	35.9719	60.2178	147.0892
HH. Eastern Island	1.0456	38.4770	64.4113	149.7906
Agriculture	3.8381	1,989.8268	2,112.4284	2,076.8554
Mining	0.0000	1,080.4143	1,258.9310	1,469.0589
Manufacture	36,806.9362	18,754.4231	17,366.5072	5,688.3873
Utilities	7.1473	7.3074	6.9780	120.5470
Services	45,415.5598	15,607.5502	15,895.7155	4,658.3434
Total Outer Island	82,246.2725	38,217.0030	37,942.0812	15,153.8259
%	58.298%	42.770%	46.166%	47.763%
Total Indonesia	141,078.2005	89,354.4529	82,186.0172	31,727.3787
%	100%	100%	100%	100%

Figure 4.9 Disparities and Income

		Simulation			
		I	II	III	IV
1	Disparities among Household	0.893	1.004	1.005	0.607
2	Disparities among industries	1.359	1.292	1.202	0.938
3	Disparities Among Region	0.235	0.204	0.108	0.063
4	Per capita Income. Household (Thousand)	0.214	9.452	15.679	12.118
5	Per Capita Income. Industries (Thousand)	683.753	423.751	382.771	141.701
6	Per Capita Income Total (Thousand)	683.967	433.203	398.449	153.819

From the simulation above we can conclude while the local governments do not have authority to change the budget allocation we can observe that the disparities among the sectors are still occurred widely. From the data we noted all the income distribution impact only in its self region. In the second simulation while the local government assumed has an authority to allocate their budget to the sector depend on their global multiplier. We could see that the Java accounts injection effects less to other region than the injection from the account of Outer Java.

More over we could observe which sectors acquired highest impact of the injection. From the data in Java Island manufacturing, services and agriculture are the sectors dominate the budget allocation and also received highest portion of the output multiplier from Outer Java. In the Outer Island services, manufacturing, mining, and agriculture are prominent sector which effect lots to the whole economics. This phenomenon showed that the manufactures, services, agricultures, and mining have the wide inter and intra linkages among sectors and among region.

When we compare the value of shock variable in Java and outer island, we may see that the Indonesian economies still depend on Java Island. By the data above the percentage of income increasing between Java and Outer Island is narrow range, although the value of shock variable in the Outer Island almost reaches three times than Java's

While the disparities are discussed, the fiscal decentralization program bring opportunity for the region to expenses the budget depend on the local need and priority, the result is the program make possibilities in reducing disparities among region, household and also industrial sectors.

Considering the simulations above, the best strategies are:
1. Injection comes from local government through fiscal decentralization program.
2. Set the priority of expenditures in Outer Island to minimize the economic dependency of Java.
3. Considering the linkages and the multiplier effect of one sector in the whole economies.

Concluding Remarks

The IRSAM model can be utilized as tools of analysis on several simulations of policies, the lack of this model it is only snapshot one period time.

From the Multiplier, Structural Path and the Shock Variable analysis we summarized that the economic behavior of Indonesia still dependent with Java Island. Thus the

development plan should set to empower the economics potency of the Outer Island. More over from household income analysis we also note that the lack capacity of human resources in the Outer Island should be improved. The last good point is the fiscal decentralization has the opportunity to achieve its objectives to encourage the national economics growth and reducing the disparities among region through its intergovernmental transferred payment using General Purposes Grant (DAU), Specific Purposes Grant (DAK), and the Balancing Fund (Dana Bagi Hasil).

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