

Chapter 3

Yunnan Macro SAM 2002

Since 1987, China has started to build IO table every 5 years. In 1993, China carried through the GDP accounting according to the basic principles and methods of SNA and now China have established the system of annual and quarterly GDP accounting both by nation and by region. In the last years of 1980s', NBS began to research accounting method of SNA. Therefore, the system of periodic compilation of input-output table is established in China, which is that a large-scale input-output survey will be carried through and the basic input-output table will be compiled when the year ends of 2 or 7, and brief input-output table will be compiled through small-scale survey and adjustment of basic indicators table when the year ends of 0 or 5. In the earlier 1990s', NBS established the basic table and compilation methods of national accounts in China. Up to now, national accounts of 1997-2003 have been compiled. All of above give the essential condition to build a Social Accounting Matrix of both national and regional in China.

The 2002 Yunnan Macro SAM is a “comprehensive, economy-wide data framework” presented in the form of a square matrix. It has two principle objectives: firstly, to organize information about the economic and social structure of Yunnan economy in 2002, and secondly, to provide the statistical basis for the creation of a detail Micro SAM. The basic concept and method adopted to build the Macro SAM is “top to bottom”. Official delivering data, such like Yunnan Input and out table,

Statistics Yearbooks etc., will be used to build the basic framework and then to build some residual terms which could be given reasonable interpretation to balance the matrix.

The author will start from building a structure of Macro SAM for Yunnan, 2002 to create accounts and corresponding indicators which can completely describe the economic flow transferring. Then the author gives a detailed interpretation, discusses the assumption and expected data source for each account which are being used in the Macro SAM. Next, the detailed information about data source and calculation formula are given. Finally, the method and the process of how to balance the Macro SAM will be presented.

3.1 The Structure of the Macro SAM for Yunnan, 2002

The 2002 Social Accounting Matrix for Yunnan is a square matrix, which includes 11 accounts and all transactions among them. The transactions are classified as activities, value added, institution and rest of world. The data sources for the Macro SAM come from Yunnan IO table 2002, China Finance Yearbook 2003, Yunnan Statistical Yearbook 2003, Yunnan Yearbook 2003.

A SAM is a comprehensive, economy-wide data set that contains information about the flow of resources associated with all transactions that have taken place between economic agents in a certain economy during a certain period of a certain economy; in our case the Yunnan province. A Provincial Macro SAM for an open economy with activity account, value added account, institutional account and the rest of the world account presents a snapshot picture of economy for Yunnan Province, China 2002.

The Macro SAM is constructed with 11 accounts that related directly to those in Table3.1.

Table 3.1 accounts of the Macro SAM for Yunnan, 2002

Order	Accounts	Order	Accounts
1	Commodity-Activity (CA)	7	Local Government Extra-Budget System (Gov-E)
2	Value added-Labor (VA-L)	8	Central Government (Gov-C)
3	Value added-Capital (VA-K)	9	Capital Account (CAP)
4	Household	10	Rest of Mainland China (ROMC)
5	Enterprise	11	Rest of World (ROW)
6	Provincial Government (Gov-L)		

Source: Jianwu, He, (2005), evaluation of industrial competitiveness of Yunnan province based on CGE model. Development research center, State Council of the People's Republic of China

The 2002 Macro SAM for Yunnan is a square matrix comprising 12 rows and columns forming separate accounts in the economy by accounts listing above. The framework of a Macro Sam is constructed by 31 cells which present all transaction of economy for Yunnan province. A descriptive macro SAM for Yunnan is shown in table3.2. The column represent the expenditure (or input) of the account to other accounts and the row represent the income (or output) of the account from other account.

Table 3.2 descriptive Macro SAM for Yunnan, 2002

	CA	VA-L	VA-K	Household	Enterprise	Gov-L	Gov-E	Gov-C	Capital Account	ROMC	ROW
CA	1. Intermediate consumption	-	-	2. Final Private consumption	-	3. Provincial Government consumption	4. Extra-Budgetary consumption	5. Central Government consumption	6. Gross fixed capital formation	7. Outflow to ROMC	8. Export
VA-L	9. Compensation of Employee	-	-	-	-	-	-	-	-	-	-
VA-K	10. Depreciation & Operating surplus	-	-	-	-	-	-	-	-	-	-
Household	-	11. Compensation of employec distributed to household	12. Transfers to household	-	-	13. Transfers to Household	-	14. Transfers to household	-	-	-
Enterprise	-	-	15. Capital income distr. To enterprise	-	-	-	-	-	-	-	-
Gov-L	16. Provincial government Indirect taxes	-	-	17. household Income tax	18. enterprise Income tax	-	19. Central Gov transfer to Provincial Gov	-	-	-	-
Gov-E	20. Extra-budgetary Income	-	-	-	-	-	-	-	-	-	-
Gov-C	21. Import tax (incl. tariff) + Indirect taxes	-	-	-	22. Enterprise Income tax	23. Local Gov. transfer to central Gov	-	-	-	24. central -gov expenditures in Yunnan comes from outside of Yunnan	-
Capital Account	-	-	-	25. Household savings	26. Enterprise savings	27. Local-gov saving	-	-	-	28. ROMC saving	29. Foreign saving
ROMC	30. Inflow from ROMC	-	-	-	-	-	-	-	-	-	-
ROW	31. Imports	-	-	-	-	-	-	-	-	-	-

Source: Jianwu, He, (2005), evaluation of industrial competitiveness of Yunnan province based on CGE model. Development research center, State Council of the People's Republic of China

3.2 Accounts Explanation and Cell Entries for the Macro SAM

For easier description of the relation of the flows of goods and services among different accounts, I prefer to use abbreviations to explain it as in table3.3.

Table 3.3 descriptive Macro SAM in Abbreviation for Yunnan, 2002

	CA	VA-L	VA-K	Household	Enterprise	Gov-L	Gov-E	Gov-C	Capital Account	ROMC	ROW	ROWSUM
CA	C _I	-	-	C _F	-	G _L	G _E	G _C	I	X _D	X _W	AD
VA-L	W	-	-	-	-	-	-	-	-	-	-	Y _{FL}
VA-K	RK	-	-	-	-	-	-	-	-	-	-	Y _{FK}
Household	-	W	RK _H	-	-	G _{TLH}	-	G _{TCH}	-	-	-	Y _H
Enterprise	-	-	RK _E	-	-	-	-	-	-	-	-	Y _E
Gov-L	T _{IDL}	-	-	T _{HI}	T _{EIL}	-	-	G _{TCL}	-	-	-	Y _{GL}
Gov-E	T _{EB}	-	-	-	-	-	-	-	-	-	-	Y _{GE}
Gov-C	T _M +T _{IDC}	-	-	-	T _{EIC}	G _{TLC}	-	-	-	G _{CROMC}	-	Y _{GC}
Capital Account	-	-	-	S _H	S _E	S _G	-	-	-	S _D	S _W	S
ROMC	M _D	-	-	-	-	-	-	-	-	-	-	Y _{ROM} c
ROW	M _W	-	-	-	-	-	-	-	-	-	-	Y _{ROW}
COLSUM	AS	E _{FL}	E _{FK}	E _H	E _E	E _{GL}	E _{GE}	E _{GC}	I	E _{ROMC}	E _{ROW}	

Source: Designed by the author

3.2.1 Accounts Explanation

A. Commodity & Activity:

In 2002 Yunnan Macro SAM, commodity and activity was consolidated as one account because there is only a use table in it, but no longer a make table. It is because I assume that a make table is not available or accessible in the real economy. Then the

consolidation of commodity and activity gives rise to a new commodity & activity account (CA).

The account is used to describe the aggregate demand and aggregate supply in the specific regional market (Yunnan). The aggregate demand corresponds to the first column of Macro SAM, and the aggregate supply corresponds to the first row of it. The SAM implies several equivalent equations in provincial market as following:

$$\begin{aligned} \diamond \quad \mathbf{GPP} &= \mathbf{C}_F + \mathbf{G}_L + \mathbf{G}_E + \mathbf{G}_C + \mathbf{I} + \mathbf{X}_D + \mathbf{X}_W - \mathbf{M}_D - \mathbf{M}_W \text{ or} \\ &= \mathbf{W} + \mathbf{RK} + \mathbf{T}_{IDL} + \mathbf{T}_{EB} + \mathbf{T}_M + \mathbf{T}_{IDC} \end{aligned}$$

$$\diamond \quad \mathbf{AS} = \mathbf{AD}$$

$$\diamond \quad \mathbf{AS} = \mathbf{C}_I + \mathbf{FI} + \mathbf{T}_{NI} + \mathbf{M}$$

Where

$$\mathbf{T}_{NI} = \mathbf{T}_{IDL} + \mathbf{T}_{EB} + \mathbf{T}_M + \mathbf{T}_{IDC}$$

$$\mathbf{FI} = \mathbf{W} + \mathbf{RK}$$

$$\mathbf{M} = \mathbf{M}_D + \mathbf{M}_W$$

\mathbf{C}_I = Intermediate input

$$\diamond \quad \mathbf{AD} = \mathbf{C} + \mathbf{G}_P + \mathbf{I} + \mathbf{X}_D + \mathbf{X}_W$$

Where

$$\mathbf{C} = \mathbf{C}_I + \mathbf{C}_F$$

$$\mathbf{G}_P = \mathbf{G}_L + \mathbf{G}_E + \mathbf{G}_C$$

\mathbf{I} = investment

$$\mathbf{X} = \mathbf{X}_D + \mathbf{X}_W$$

The values of intermediate consumption, final private consumption, and gross fixed capital formation could be attained directly from provincial IO table and putted in to a Macro SAM. The detail interpretation is listing as bellow:

1. Intermediate consumption (Commodity-Activity, Commodity-Activity): Total intermediate consumption by productive activity (include imported intermediate input). It is assumed that a make table does not really exist and will be neglected in my research, thus the activity account and commodity account will be aggregated as one item.

2. Final private consumption (Commodity-Activity, Household): This comprises the total expenditure of resident households on the final consumption of goods and services. Household consumption is calculated at market prices, namely the consumer's prices which the household pay; the consumer's prices of goods are the prices the household pay when they obtain the goods, including the transport and commercial expenses paid by the household. In addition to the consumption of goods and services bought by the household directly with money, the expenditure on goods and services obtained by the household in other ways.

3. Local government consumption (Commodity-Activity, Gov-L): The final consumption of Provincial Government on purchasing goods and services from all sectors is calculated by the total Provincial Government expenditure minus transfers to the household.

4. Extra-Budgetary consumption (Commodity-activity, Gov-E): This account is a residual balance term which encompasses the expenditures of government and other public sector, which is financed by extra-budget funds. The approach of it will be introduced in next step.

5. Central government consumption (Commodity-activity, Gov-C):

This comprises the central government's expenditure for purchasing goods and services on Yunnan province. It is a residual term for balancing the total expenditure and total income of central government consumption in Yunnan province. The further interpretation of method will be given in the next step.

6. Gross fixed capital formation (Commodity-activity, CAP): The capital accounts contain all transactions relating to investment and stock change.

7. Outflow to rest of mainland China (Commodity-activity, ROMC):

Total outflow of goods and services from Yunnan to ROMC is a residual which is equal to the total outflow minus export.

8. Export (Commodity, ROW): the total exports of goods and services to the rest of the world.

B. Factor:

In factor account, there are 3 equivalent equations for balance factor account.

See as following:

$$\diamond E_F = Y_F$$

$$\diamond E_F = E_{FL} + E_{FK}$$

$$= W + RK$$

$$= W + RK_H + RK_E$$

$$\diamond Y_F = Y_{FL} + Y_{FK}$$

$$= W + RK$$

Where

$RK = \text{Depreciation} + \text{Operating surplus}$

Factor account includes the compensation of employee, depreciation & operating surplus. It is categorized by Value added of labor, and value added of capital.

9. Compensation of employee (VA-L, Commodity-Activity): Labor factor earn income from employment in domestic production activities.

10. Depreciation & operating surplus (VA-K, Commodity-Activity): value added of capital.

C. Institution:

Institution accounts include household, enterprise, government which implies the following equivalent relations:

$$\diamond E_H = Y_H$$

Where

$$E_H = C_F + T_{HI} + S_H$$

$$Y_H = W + R_{KH} + G_{TLH} + G_{TCH}$$

$$\diamond E_E = Y_E$$

Where

$$E_E = T_{EIL} + T_{EIC} + S_E$$

$$Y_E = RK_E$$

$$\diamond EGL = YGL$$

Where

$$E_{GL} = G_L + G_{TLH} + G_{TLC} + S_G$$

$$Y_{GL} = T_{IDL} + T_{HI} + T_{EIL} + G_{TCL}$$

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$$EGC = YGC$$

Where

$$E_{GC} = G_C + G_{TCH} + G_{TCL}$$

$$Y_{GC} = T_M + T_{IDC} + T_{EIC} + G_{TLC} + G_{CROMC} + Y_{GC}$$

$$\diamond EGE = YGE$$

Where

$$E_{GE} = G_E$$

$$Y_{GE} = T_{EB}$$

11. Compensation of employee distributed to household (Household, Commodity-Activity): Household earns the majority of their income from factors.

12. VA- Capital transfer to Household (Household, VA-K): This is a residual balancing term which represents the capital revenue contribution to household. Because the total income and total expenditure of household should be the same, therefore, the author assumes that the household's capital revenue from factor market should equal to the column total of household which represent the total expenditure of household subtracts the income of household getting from factor market, subsidies from local government to household, and subsidies from central government to household.

13. Local Government Subsidy and transfer on household (Household, Gov-L): This is the total local government subsidies for households, which includes expenditures for pensions and relief funds for social welfare, retired persons in administrative department and subsidies to social security programs.

14. Central Governmental Subsidy and transfer on household

(Household, Gov-C): The product of total central government subsidies on household and the ratio of population by Yunnan over China.

15. Capital Income distributed to enterprise (Enterprise, VA-K): This

represents the total capital compensation of enterprise.

16. Local governmental indirect tax (GOV-L, Commodity-Activity):

The revenue of government by taxing on production

17. Household' income taxes (GOV-L, Household): These are the total

household income taxes to provincial government.

18. Enterprise income taxes (Gov-L, Enterprise): The total enterprise

income taxes imposed by local government.

19. Inter-government transfer (Gov-L, Gov-C): The transfer from

central government to local government.

20. Extra-budget Fee (Gov-E, Commodity-Activity): The total fee

imposed on production at extra-budget level. This represents total net taxes on production less total budgetary taxes and subsidies on production.

21. Import taxes and central governmental indirect taxes (Gov-C,

Commodity-Activity). As commodity and activity are aggregated as one account, the cell includes tow parts in term of the tariff and other import tax and the indirect taxes transferring to central government.

22. Enterprise Income tax to Central Government (Gov-C, Enterprise):

The total enterprise income taxes imposed by central government.

23. Inter-government transfer (Gov-C, Gov-L): The transfer of the local

government to the central government.

24. Central government expenditure (Gov-C, ROMC): The expenditures of the central government of Yunnan coming from outside of Yunnan.

This cell will be adjusted in the following step.

D. Capital accounts

The account includes the gross capital formation and stock change. It implies the following equivalent relations:

$$\diamond I = S$$

$$\text{Where } S = S_H + S_E + S_G + S_D + S_W$$

25. Household saving (CAP, Household): Household saving contains the implied total household capital outflow which is equal to total revised implied disposable income minus the total implied expenditures.

26. Enterprise saving (CAP, Enterprise): This cell describes the enterprise savings which is obtained by balancing the total income and the total expenditure of enterprises. Since the only revenue of enterprises is obtained from VA-capital, it is possible to start with the capital revenue of enterprise and subtract the enterprise's income taxes to local government and central government to get enterprise savings.

27. Government savings (CAP, Local-gov): This cell describes the local government savings which is equal to the balance of total income of local government subtracts the consumption of local government, transfer to central government and transfer to household.

28. ROMC savings (CAP, ROMC): This term describes the investment from the rest of mainland China.

29. Foreign savings (CAP, ROW): This term describes the foreign investment on Yunnan. Because Yunnan is an export reliance province that the export is bigger than import, therefore, this term should be negative for balance international inflow and outflow.

E. ROMC & ROW

Since this is a provincial SAM, the trade with outside of Yunnan will be separated as two parts in terms of the rest of mainland of China (ROMC) and the rest of world (ROW). The columns represent sell goods and services to outside and the rows represent that buy from outside. It implies the following equivalent relations:

$$\diamond X = M$$

$$\text{Where } X = E_{\text{ROMC}} + E_{\text{ROW}}$$

$$M = Y_{\text{ROMC}} + Y_{\text{ROW}}$$

$$\diamond E_{\text{ROW}} = Y_{\text{ROW}}$$

$$\text{Where } E_{\text{ROW}} = X_{\text{W}} + S_{\text{W}}$$

$$Y_{\text{ROW}} = M_{\text{W}}$$

$$\diamond E_{\text{ROMC}} = Y_{\text{ROMC}}$$

$$\text{Where } E_{\text{ROMC}} = X_{\text{D}} + G_{\text{CROMC}} + S_{\text{D}}$$

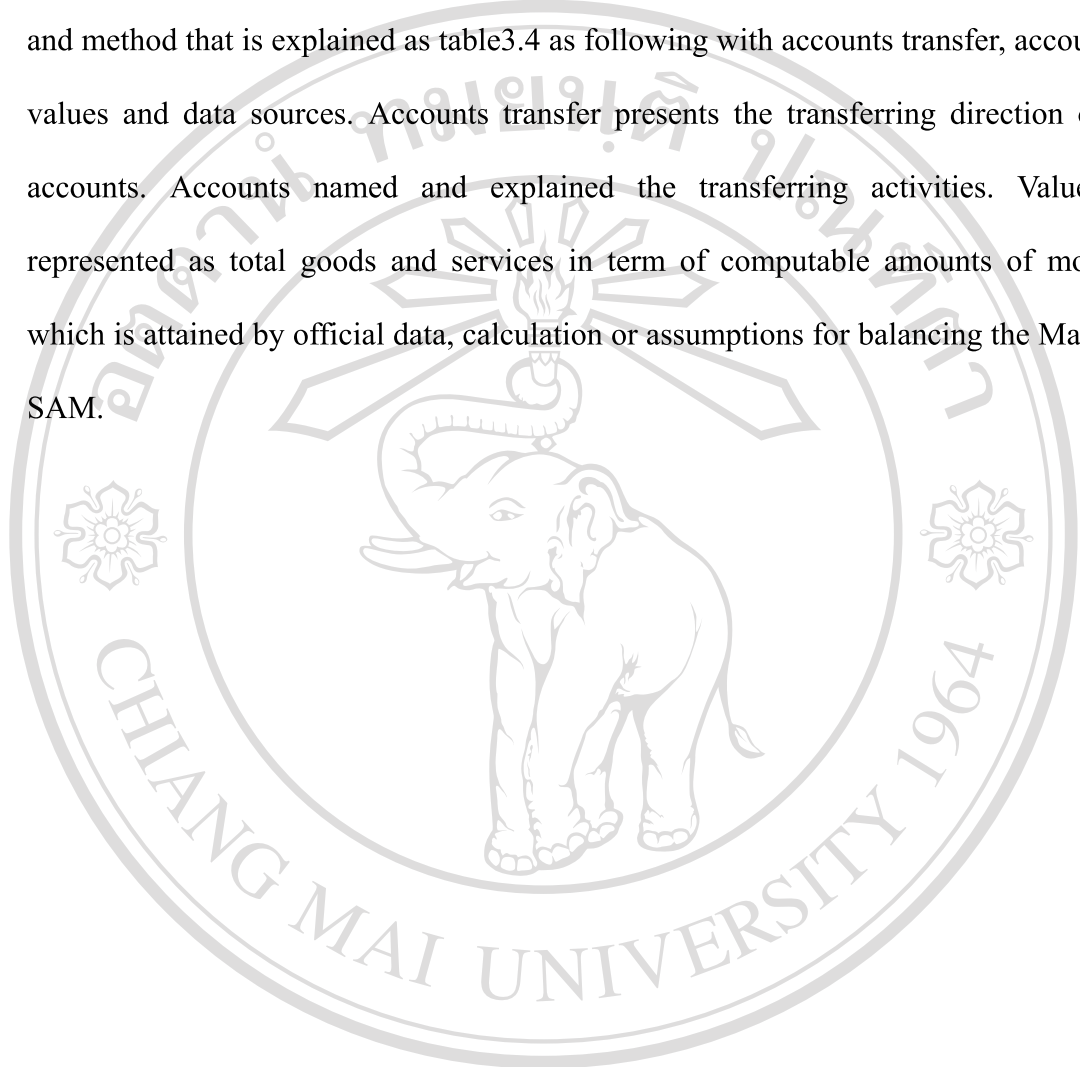
$$Y_{\text{ROMC}} = M_{\text{D}}$$

30. Interregional inflow (ROMC, Commodity-Activity): This cell describes the total inflow of goods and services from the ROMC. It is calculated by the total inflow minus the import.

31. Import (ROW, Commodity-Activity): The total import of goods and services.

3.2.2 Cells Entries

The Macro SAM contains totally 31 cells obtained as different data sources and method that is explained as table 3.4 as following with accounts transfer, accounts, values and data sources. Accounts transfer presents the transferring direction of 2 accounts. Accounts named and explained the transferring activities. Value is represented as total goods and services in term of computable amounts of money which is attained by official data, calculation or assumptions for balancing the Macro SAM.



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Table 3.4 value determination of Macro SAM

order	Accounts transfer	Accounts	Value	Data Sources
1	CA-- CA	Intermediate consumption	2,736.97	2002 Yunnan I/O table
2	CA-- Household	Final Private consumption	1,024.60	2002 Yunnan I/O table
3	CA-- Gov-L	Provincial Government consumption	451.34	2003 Yunnan Statistical Yearbook
4	CA-- Gov-E	Extra-Budgetary consumption	50.31	2002 Yunnan I/O table
5	CA-- Gov-C	Central Government consumption	203.26	Residual
6	CA-- CAP	Gross fixed capital formation	887.49	2002 Yunnan I/O table
7	CA-- ROMC	Outflow to ROMC	763.05	2002 Yunnan I/O table
8	CA-- ROW	Export	118.38	2003 Yunnan Yearbook
9	VA-L-- CA	Compensation of Employee	1,020.49	2002 Yunnan I/O table
10	VA-KI --CA	Depreciation & Operating surplus	725.41	2002 Yunnan I/O table
11	Household -- VA-L	Compensation of employee distributed to household	1,020.49	2002 Yunnan I/O table
12	Household -- VA-K	VA-capital Transfers to household	160.61	Residual
13	Household -- Gov-L	Local-gov Transfers to Household	75.55	2003 Yunnan Statistical Yearbook
14	Household -- Gov-C	Central-gov Transfers to household	1.97	2003 China Statistical Yearbook
15	Enterprise -- VA-K	Capital income distr. To enterprise	564.80	Residual
16	Gov-L -- CA	Provincial government Indirect taxes	171.55	2003 China Statistical Yearbook
17	Gov-L-- Household	household Income tax	9.45	2003 China Statistical Yearbook
18	Gov-L-- Enterprise	enterprise Income tax	25.76	2003 China Statistical Yearbook
19	Gov-L-- Gov-C	Central gov transfer to provincial gov	335.29	2003 Yunnan Statistical Yearbook
20	Gov-E -- CA	Extra-budgetary Income	50.31	2002 Yunnan I/O table
21	Gov-C -- CA	Import tax (incl. tariff) + Indirect taxes	494.94	2003 Yunnan Yearbook & 2002 Yunnan I/O table
22	Gov-C -- Enterprise	Enterprise Income tax	31.09	2003 Yunnan Statistical Yearbook
23	Gov-C -- Gov-L	Local gov. transfer to central gov	14.50	2003 Yunnan Statistical Yearbook
24	Gov-C -- ROMC	Central government expenditures in Yunnan comes from outside of Yunnan	<i>Nextstep</i>	Residual
25	CAP -- Household	Household saving	224.58	China Data-Online
26	CAP -- Enterprise	Enterprise saving	507.94	Residual
27	CAP -- Gov-L	Local government saving	0.67	Residual
28	CAP -- ROMC	ROMC saving	215.25	Residual
29	CAP -- ROW	Foreign saving	-52.41	Residual
30	ROMC -- CA	Inflow from ROC	978.30	2002 Yunnan I/O table
31	ROW -- CA	Imports	65.97	2003 Yunnan Yearbook

Source: collected and design by the author

In table3.4, the residual terms which are marked by using italic font and underlining have been assumed to balance the Macro SAM that will be explained in the following part.

3.3 Building and Balancing the Macro SAM

This section has 3 steps to build a final Macro SAM in terms of an unbalanced Macro SAM, the process to balance the Macro SAM and the 2002 Macro SAM for Yunnan.

3.3.1 An Unbalance Macro SAM

The data derived from last section will be simply put into correspond cells in table3.5 in the section. For obtaining a balanced SAM in next two steps, 8 residual terms is assumed to balance the Macro SAM which has economic interpretations. The Major assumption is that the whole economy system should satisfy a basic regulation in terms of the total input being equal to total output. Based on this approach, the total revenue for each account should also be equal to total expenditure of itself. The same concept will be used to balance table3.5.

Table 3.5 Yunnan Macro SAM 2002 (unbalanced)

1	A	B	C	D	E	F	G	H	I	J	K	L	M
2		CA	VA-L	VA-K	Household	Enterprise	Gov-L	Gov-E	Gov-C	CAP	ROMC	ROW	ROWSUM
3	CA	2,736.97			1,024.60		451.34	50.31	203.26	887.49	763.05	118.38	6,235.40
4	VA-L	1,020.49											1,020.49
5	VA-K	725.41											725.41
6	Household		1,020.49	160.61			75.55		1.97				1,258.63
7	Enterprise			564.80									564.80
8	Gov-L	171.55			9.45	25.76			335.29				542.05
9	Gov-E	50.31											50.31
10	Gov-C	494.94				31.09	14.50				<i>Step 2</i>		540.53
11	CAP				224.58	507.94	0.67				215.25	-52.41	896.03
12	ROMC	978.30											978.30
13	ROW	65.97											65.97
14	COLSUM	6,243.94	1,020.49	725.41	1,258.63	564.80	542.05	50.31	540.53	887.49	978.30	65.97	
15	error (%)	-0.14	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00	

Source: calculated by the author

In table 3.5, all the collected data are appropriately put into corresponding cells. Beside the accounts mentioned above, the author uses one column and one row to sum up each row and column. An additional row was used to calculate the percentage of ROWSUM over corresponding CLOSUM which can apparently see how many errors between row cells and column cells. The residual terms which are marked by bold and italic font were determined by the method in table 3.6.

Table 3.6 the method to balancing Macro SAM in table3.5

Account number*	Account transfer	Assumption	Calculation formula
5	CA – Gov-C	Central Government consumption	M10-SUM(I6,I8)
12	Household – VA-K	VA-capital Transfers to household	E14-SUM(C6,G6,I6)
15	Enterprise -- VA-K	Capital income distr. To enterprise	M5-D6
25	CAP -- Enterprise	Enterprise saving	M7-SUM(F8,F10)
26	CAP – Gov-L	Local government saving	M8-SUM(G3,G6,G10)
27			Balancing in step 2
28	CAP -- ROMC	ROMC saving	M12-K3
29	Capital -- ROW	Foreign saving	M13-L3

Source: calculated by the author

*note: the numbers correspond to the account cell in table 3.2

3.3.2 The Process of the Macro SAM Balancing

Within step 1, the Macro SAM is still unbalanced and the error value in B15 and J15 cells in table5.5 still present -14% and 96% error. Therefore one more step was needed to balance it. Table3.7 shows a balanced Macro SAM and table3.8 gives the basic process to balance the Macro SAM.

Table 3.7 Yunnan Macro SAM 2002 (balanced)

16	A	B	C	D	E	F	G	H	I	J	K	L	M
17		CA	VA-L	VA-K	Household	Enterprise	Gov-L	Gov-E	Gov-C	CAP	ROMC	ROW	ROWSUM
18	CA	2,736.97	-	-	1,024.60	-	451.34	50.31	211.80	887.49	763.05	118.38	6,243.94
19	VA-L	1,020.49	-	-	-	-	-	-	-	-	-	-	1,020.49
20	VA-K	725.41	-	-	-	-	-	-	-	-	-	-	725.41
21	Household	-	1,020.49	160.61	-	-	75.55	-	1.97	-	-	-	1,258.63
22	Enterprise	-	-	564.80	-	-	-	-	-	-	-	-	564.80
23	Gov-L	171.55	-	-	9.45	25.76	-	-	335.29	-	-	-	542.05
24	Gov-E	50.31	-	-	-	-	-	-	-	-	-	-	50.31
25	Gov-C	494.94	-	-	-	31.09	14.50	-	-	-	8.54	-	549.07
26	CAP	-	-	-	224.58	507.94	0.67	-	-	-	206.71	-52.41	887.49
27	ROMC	978.30	-	-	-	-	-	-	-	-	-	-	978.30
28	ROW	65.97	-	-	-	-	-	-	-	-	-	-	65.97
29	COLSUM	6,243.94	1,020.49	725.41	1,258.63	564.80	542.05	50.31	549.07	887.49	978.30	65.97	
30	error (%)	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Source: calculated by the author

Table 3.8 the method to balancing Macro SAM in 2st step

Since	Commodity-Activity	sumcol-sumrow=	M3-B15=8.54
5	Comm-Activity --Central-gov	Central-gov expenditure	I3+8.54=211.80
24	Central-gov -- ROMC	Central-gov expenditure in Yunnan from ROMC	8.54
28	Capital account -- ROMC	ROMC saving	K11-8.54=206.71

Source: calculated by the author

3.3.3 Yunnan Macro SAM, 2002

Finally, a 2002 macro SAM for Yunnan with a 11 rows and 11 columns matrix has been built in table 3.9. The analysis for the Macro SAM will be given in following chapters.

Table 3.9 a 2002 Macro SAM for Yunnan

	CA	VA-L	VA-K	Household	Enterprise	Gov-L	Gov-E	Gov-C	CAP	ROMC	ROW	ROWSUM
CA	2,737	-	-	1,025	-	451	50	212	887	763	118	6,244
VA-L	1,020	-	-	-	-	-	-	-	-	-	-	1,020
VA-K	725	-	-	-	-	-	-	-	-	-	-	725
Household	-	1,020	161	-	-	76	-	2	-	-	-	1,259
Enterprise	-	-	565	-	-	-	-	-	-	-	-	565
Gov-L	172	-	-	9	26	-	-	335	-	-	-	542
Gov-E	50	-	-	-	-	-	-	-	-	-	-	50
Gov-C	495	-	-	-	31	14	-	-	-	9	-	549
CAP	-	-	-	225	508	1	-	-	-	207	-52	887
ROMC	978	-	-	-	-	-	-	-	-	-	-	978
ROW	66	-	-	-	-	-	-	-	-	-	-	66
COLSUM	6,244	1,020	725	1,259	565	542	50	549	887	978	66	

Source: calculated by the author

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