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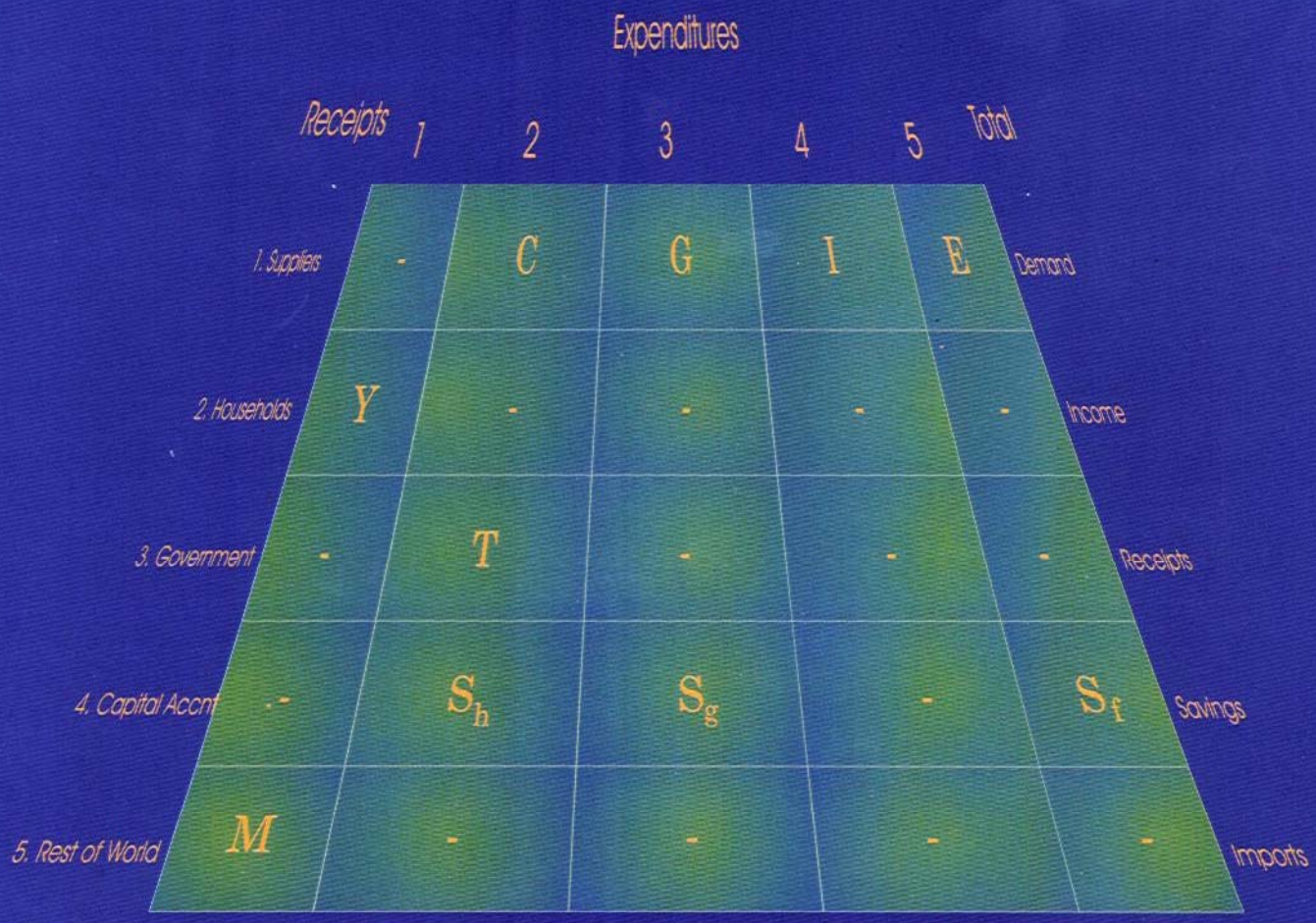

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A 1999 SOCIAL ACCOUNTING MATRIX FOR VIETNAM

Hanoi, October 2001

CENTRAL INSTITUTE FOR ECONOMIC MANAGEMENT

A 1999 SOCIAL ACCOUNTING MATRIX FOR VIETNAM

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List of Abbreviations

AFTA	ASEAN Free Trade Area
ANZ	Australia and New Zealand
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CEPT	Common Effective Preferential Tariff
CGE	Computable General Equilibrium
CIEM	Central Institute for Economic Management
CIF	Cost-Insurance-Freight
EU	European Union
FDI	Foreign Direct Investment
FOB	Free-On-Board
GDP	Gross Domestic Product
GSO	General Statistics Office
HDI	Human Development Indicators
I/O	Input-Output
IMF	International Monetary Fund
MOF	Ministry of Finance
NAFTA	North American Free Trade Agreement
NIAS	Nordic Institute for Asian Studies
OECD	Organization for Economic Cooperation and Development
ROW	Rest of the World
SAM	Social Accounting Matrix
SNA	System of National Accounts
SOE	State Owned Enterprise
UN	United Nations
UNDP	United Nations Development Programme
US	United States
VAT	Value Added Tax
VLSS	Vietnam Living Standards Survey
VND	Vietnam Dong

Preface

The process of establishing a socialist-oriented market economy in Vietnam can be compared to travelling a long, winding road through dangerous mountains and huge river valleys. Great achievements have been accomplished in Vietnam in the 15 years following the initiation of the *Doi Moi* reform process in 1986. However, we have only come part of the way to overcoming the dual challenges of poverty and underdevelopment. Major challenges lie ahead of us. On this journey, our policymakers will continuously have to face complex choices and trade offs. Trying to help establish a sound basis for well founded responses to economic policy dilemmas is therefore an overarching aim of the activities of CIEM. All our research is geared towards providing scientifically sound, yet practical and relevant economic policy advice.

In order to reinforce the capacity of Vietnamese researchers in carrying out their tasks, CIEM initiated in mid-2001 a programme of institutional collaboration with the Nordic Institute of Asian Studies (NIAS). This collaboration is supported financially by the Danish government through Danida, as a component of the integrated Danish support to the Vietnamese reform process. We are grateful for this support, and the overall purpose of the CIEM/NIAS project is being achieved on a day-to-day basis through a combination of on-the-job training, formal courses, upgrading of research facilities, and collaborative research initiatives.

The first of the collaborative research initiatives under the CIEM/NIAS umbrella is entitled *Globalisation and Vietnam in the international economy - policy issues and modern analytical tools.* The choice and design of an appropriate development strategy is no easy task in an increasingly global and competitive economic environment where traditional industrialisation models are unlikely to be effective. Vietnam will therefore, in the years to come, have to consider how the country is going to:

(i) Make optimal use of existing opportunities in international markets, and extend these opportunities into the future.

(ii) Put in place an enabling environment for economic activity, including in particular well functioning financial and credit systems.

(iii) Ensure that the future pattern of growth alleviates poverty and generates employment effectively.

Appropriate policy advice on these intricate challenges cannot, however, be formulated without adequate and timely data and information on the structure of the

economy. Such data are indispensable to inform effective economic policy. Moreover, information must be available in a format that is amenable to economic analyses that rely on up-to-date analytical tools. Traditional physical input-output (I/O) planning was characteristic of central planning in the past. In modern economy-wide studies, Social Accounting Matrices (SAMs) and Computable General Equilibrium (CGE) models that take account of supply and demand behaviour and the mediating role of market institutions have become the analytical tools of choice to take their place in support of economywide policy design and implementation.[1]

The present volume, which is the first published output of the CIEM/NIAS project, was designed to document a 1999 SAM for Vietnam and offers an overview of the Vietnamese economy as it emerges from the SAM. Suggestions and comments on both the present volume and our reflections on future research priorities are always welcome.

Hanoi, October 2001

Dinh Van An

Acting President of CIEM

[1] For introductory surveys of SAMs and CGEs, see King (1985) and Dervis, de Melo and Robinson (1982).

1. Introduction

Vietnam has come a long way since the *doi moi* reform process was initiated in 1986. The past 15 years have witnessed one of the best performances in the world in terms of both economic growth and poverty reduction. People's living standards have improved significantly, and the country's socio-economic achievements are also impressive from a human development perspective. Wide-ranging institutional reform has been introduced, including a greater reliance on market forces in the allocation of resources and the determination of prices. A shift from an economy dominated by the state and co-operative sectors to a situation where the private sector and foreign investment account for a relatively high proportion of GDP can also be noted. Important strides have been made over a relatively short time span to further the transition from a centrally planned to a socialist market economy. Nevertheless, Vietnam remains a poor country according to the Human Development Index (HDI).[2] How the country can rapidly and sustainably transform itself and its economy to a more modern society remains a critical policy challenge.

In parallel with the domestic reforms, Vietnam has started a process of opening up its economy to regional and global economic forces that will shape the international economic environment in which the future growth process of Vietnam will have to take place. Vietnam joined the Association of South East Asian Nations (ASEAN) in 1995, and is also a member of the Asia-Pacific Economic Co-operation (APEC). The central economic and trade programme of co-operation for ASEAN is the ASEAN Free Trade Area (AFTA), and AFTAs key instrument is a Common Effective Preferential Tariff (CEPT). By joining ASEAN, Vietnam has therefore already undertaken international commitments in the area of trade policy that are bound to have a profound impact on opportunities for economic development. This is particularly so in light of the intense competition that characterises today's global markets, and the attendant rapid evolution in science and technology. To understand the impact of these choices and come up with appropriate policy responses are important tasks for Vietnamese policymakers. The same goes for commitments to other trade initiatives like the World Trade Organisation (WTO).

While the progress achieved over the past 15 years is indeed remarkable in the modern history of Vietnam, it is clear that modern Vietnam faces tremendous challenges in the area of economic policy analysis. The search for how best organise and facilitate a socialist-oriented market economy, an overarching goal articulated at the Ninth Party Congress in April of 2001, is no easy one. Traditional tools of analysis are not well suited in the emerging market economy, context where relative

[2] Vietnam is ranked as number 101 in the UNDP Human Development Report 2001. For further details, see http://www.undp.org/hdr2001/indicators/

prices assume a more prominent role in the allocation of resources. In such a situation, modern techniques of quantitative economic modelling and policy simulation have to be relied upon. Of particular relevance are Computable General Equilibrium (CGE) models and their underlying data framework, referred to as a Social Accounting Matrix (SAM), analytical tools that have become cornerstones in present-day economywide policy analysis.

The genesis of the SAM approach goes back to the Nobel Laureate Richard Stone's pioneering work on social accounting, and during the past 25 years a variety of formalisations have appeared in the academic literature.[3] In essence, the SAM is an economywide accounting device that captures the many interdependencies among sectors and institutions in the economy. As such, the SAM becomes the basis for detailed multiplier analyses that go well beyond more traditional input-output multiplier analysis, and also forms the informational basis for the building and calibration of a variety of applied general equilibrium models. Such models are important analytical tools for policy support. They take explicit account of the importance of price-mediated resource allocation, the hallmark of a market economy, and are therefore well suited to analyse issues such as the impact of liberalisation with respect to domestic and international markets.

Summing-up, the SAM provides a closed form, economywide accounting of linkages between activities (and/or commodities), factors, households, domestic institutions (e.g., investment, government), and foreign institutions in a tabular format that is transparent and amenable both to multiplier analysis similar to that popularised by Leontief and more sophisticated CGE analyses. These include for example studies focusing on the economic impact of initiatives such as WTO accession. The relevance of such analyses in the present phase of Vietnamese interaction with the global economy and the international institutions dealing with trade issues can hardly be exagerated.[4]

An interesting SAM for Vietnam was published by the United Nations already in the mid-1990s.[5] While much of the theoretical analysis and overview in this document remains valid, the SAM in reference is much aggregated and relies on a

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[3] See e.g., Stone (1981), Pyatt and Round (1985), and King (1985) for a layperson's introduction.

[4] It is reiterated that the SAM is in effect a comprehensive, disaggregated and consistent data system that captures many of the interdependencies that exist within our socio-economic system. As such, the SAM is ideally suited for use as a conceptual framework in exploring the impact of changes in economic policies on the whole interdependent socio-economic system, including the structure of production, and factorial and income distributions.

[5] The major purpose of this SAM was to document a coherent data framework underlying a set of macroeconomic policy-simulations and short-term forecasting exercises. For example, the SAM was used to implement a model designed to evaluate the impact of alternative modes of financing possible increases in the government wage bill. Hence, the focus of the UN SAM was very aggregate in nature and as such is comparable to what we in this volume refer to as the MacroSAM.

now outdated 1989 10-sector I/O table. Various other contributions to this area of work exist such as the SAM for Central Vietnam, underpinning the study by Bautista (2000), a working paper by Nielsen (2001), and the thesis by Huong (2000). However, until now there is no SAM reflecting the economic structure of Vietnam in the aftermath of the Asian financial crisis, taking into account the substantial changes in exports and imports over the past few years.

This volume, organised in five sections, is meant to help fill this important gap, by presenting a SAM for the year 1999. The table we estimated and present here has a level of disaggregation comparable to the largest older SAMs, which is necessary for detailed research and might be useful for historical comparisons. It also relies exclusively on official sources for the latest domestic economic data and upon the most recently available information on international trade. Domestic data sources include information from the Government Statistical Office (GSO), in particular a 1996, 97 sector I/O table (GSO, 1999), a 1997-98 nationally representative household survey (GSO, 2000) and a document summarising official information according to the UN System for National Accounts (SNA) for the 1990-2000 period (GSO, 2001).[6] Data on international trade were obtained from the COMTRADE database (UNSO, 2001), and data on domestic trade barriers came from official sources.

On the production side, the 1999 Vietnam SAM covers 97 activities and 97 counterpart commodities, including eight agricultural sectors, two agricultural service sectors, and 13 food processing sectors, commensurate with the importance of agricultural activities to the Vietnamese economy.[7] There are also 13 different factors of production (labour and capital with labour disaggregated by urban-rural, gender and three skill levels), and five household types (rural farmers, rural self-employed, non farm rural wage-earners, urban self-employed, and urban wage-earners). In addition, enterprises are divided into three groups (state owned, non-state private and foreign-invested companies). Finally, in addition to accounts for the recurrent state budget and the savings-investment balance, trade has been disaggregate among 94 trading partners and one for net foreign transfers.

These data were combined with meticulous analytical methods and careful attention to data quality and the resulting 1999 Vietnam SAM reveals an economic structure that has rapidly evolved since the Asian crisis, particularly in the trade-oriented sectors that will be most critical to Vietnam's growth and modernisation policies. We believe this database sets new timeliness and quality standards for the kind of economic information needed to support improved policy analysis in Vietnam

[6] See UN (1968) for a complete reference on SNA accounting standards.

[7] See Annex 1 for a complete list of sectors.

in accordance with the most up-to-date and modern analytical techniques and principles available.

Summing-up, the present volume presents a SAM that is in effect a comprehensive, disaggregated and consistent data system that captures many of the interdependencies that exist within our socio-economic system. As such, the SAM is ideally suited for use as a conceptual framework in exploring the impact of changes in economic policies on the whole interdependent socio-economic system, including the structure of production, and factorial and income distributions. Finally, the volume is organised in five sections. After a brief introduction, we present and discuss in Section 2 the structure of the Vietnamese economy as it emerges from the 1999 SAM. The construction of the tables themselves is documented in detail in Sections 3 and 4, respectively, and conclusions and perspectives regarding future work are offered in Section 5.

2. Economic Structure and Economic Development in Vietnam

The social accounting matrix is most intensively used as a database for multiplier studies and to calibrate policy simulation models. Because of the economywide scope and detailed accounts, however, direct inspection of the SAM tableau can also reveal much about underlying economic structure. In this section, we demonstrate this kind of direct SAM analysis with a table aggregated from the new 1999 Vietnam SAM. The purpose of this exercise is both pedagogical and practical, to reveal the complexity of the SAM as an information set and to show how even cursory inspection of it can yield important insights for economic development policy. Far from being just a static picture or "time slice" of an economy in transition, the 1999 SAM reveals much about the economic past, present, and future potential of the Vietnamese economy.

For the purposes of discussing detailed economic structure, we chose to aggregate the 97 activity and commodity categories in the 1999 SAM into 30 each. The resulting aggregate SAM is listed in Annex 2 for reference, with 94 trading partners aggregated into 13 regions. The sectoral aggregation was chosen to capture the diversity of the economy at a reasonably detailed level, and geographic aggregation was chosen to capture the major trading partners and regions facing Vietnam.

2.1 The MacroSAM

Before examining more disaggregated accounts, we review the overall Vietnamese economy with a MacroSAM. This table is essentially a double entry representation of the usual macroeconomic accounting identities, and it is used to calibrate the

aggregate consistency of the more detailed activity, commodity, factor, and other institutional accounts in the disaggregated SAM. Table 2.1 depicts an open-economy MacroSAM with a government sector in terms of the macro accounting identities. Note that in this case intermediate goods are netted out.[8]

With these macro accounts in mind, now consider a tableau of generic MacroSAM accounts for Vietnam, given in Table 2.2. These include intermediate goods explicitly, and further decompose production into activity and commodity accounts. While there is a little more detail in this table, it still represents a double entry accounting version of classical macro accounts. This table was then calibrated to 1999 Vietnam data, and the result is given in Table 2.3.

2.2 Supply, Demand, and Value Added

Table 2.4 presents a variety of disaggregated economic statistics extracted from the SAM.[9] In column 1, for example, shares of economywide gross output are given for all 30 sectors and aggregates representing primary, industry, and service activities. As one would expect for an economy at Vietnam's stage of development, most of output is concentrated in primary and secondary activities. Even these statistics understate the importance of the rural and food sector, which provide employment to over two-thirds of the population, because of the large subsistence or non-market component of agricultural output.

There are many indications that Vietnam's agricultural potential could be expanded significantly and sustainably, but ideally this would be done in ways that respond to more attractive output prices and greater value-added capture. In terms of the latter, this would mean shifting the composition of crops toward higher value varieties. More domestic food processing capacity could also be developed, independently or in foreign partnership, and preferable located in rural regions where the income gains would be most significant.

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[8] See Reinert and Roland-Holst (1997) for a more extensive introduction to MacroSAMs and SAM estimation.

[9] The sectoral classification used in the following tables is based on a distinction among primary, secondary and tertiary sectors that is different from the classification used by the GSO. For example, GSO classifies Mining as a secondary sector of production together with Industry. Abbreviations used in Table 2.4 are the following: X = output, Sd = supply for domestic market, E = exports, C = consumption, I = investment, Dd = demand for domestically produced products, M = import, VA = value added, LVA = labour value added, KVA = capital value added.

Table 2.1: An Open-Economy MacroSAM with a Government Sector

	Expenditures					
Receipts	1	2	3	4	5	Total
1. Suppliers	-	C	G	I	E	Demand
2. Households	Y	-	-	-	-	Income
3. Government	-	T	-	-	-	Receipts
4. Capital Accnt.	-	S_h	S_g	-	S_f	Savings
5. Rest of World	M	-	-	-	-	Imports
Total	Supply	Expenditure	Expenditure	Investment	ROW	

Additional Variables:

$t_{42} = S_h$ = private savings
$t_{32} = T$ = tax payments
$t_{43} = S_g$ = government savings
$t_{15} = E$ = exports
$t_{45} = S_f$ = foreign savings
$t_{51} = M$ = imports
$t_{13} = G$ = government spending

Accounting Identities:

1. $Y + M = C + G + I + E$ (GNP)
2. $C + T + S_h = Y$ (Income)
3. $G + S_g = T$ (Govt. Budget)
4. $I = S_h + S_g + S_f$ (Saving-Investment)
5. $E + S_f = M$ (Trade Balance)

Table 2.2: A MacroSAM for Vietnam - Generic Macro Accounts

Receipts	Expenditures								
	1. Activities (97)	*2. Commodities (97)*	*3. Factors (13)*	*4. Private Households (5)*	*5. Enterprises (3)*	*6. Recurrent State (1)*	*7. Investment Savings (1)*	*8. Rest of World (94+1)*	*9. Total*
1. Activities (97)		Marketed Production							Total Sales
2. Commodities (97)	Intermediate Consumption			Private Consumption		State Consumption	Investment	Exports	Total Commodity Demand
3. Factors (13)	Value Added								Value Added
4. Private Households (5)			Wages, Salaries and Other Benefits		Distributed Profits and Social Security	Social Security and Other Current Transfers to Households		Net Foreign Transfers to Households	Private Household Income
5. Enterprises (3)			Gross Profits					Net Foreign Transfers to Enterprises	Enterprise Income
6. Recurrent State (1)	Indirect Taxes	Consumption Taxes plus Import Tariffs	Factor Taxes	Income Taxes	Enterprise Income Taxes			Net Foreign Transfers to State	State Revenue
7. Investment Savings (1)				Household Savings	Retained Earnings & Enterprise Savings	State Savings		Net Capital Inflows (=Foreign Savings)	Total Savings
8. Rest of World (94+1)		Imports							Imports
9. Total	Total Payments	Total Commodity Supply	Total Factor Payments	Allocation of Private Household Income	Total Enterprise Expenditure	Allocation of State Revenue	Total Investment	Total Foreign Exchange	

Table 2.3: Macroeconomic SAM for Vietnam

Receipts (Bill. VND)	Expenditures (Bill. VND)								
	1. Activities (97)	*2. Commodities (97)*	*3. Factors (13)*	*4. Private Households (5)*	*5. Enterprises (3)*	*6. Recurrent State (1)*	*7. Investment Savings (1)*	*8. Rest of World (94+1)*	*9. Total*
1. Activities (97)		746,354							746,354
2. Commodities (97)	365,579			276,192		25,498	110,503	199,836	977,608
3. Factors (13)	352,975								352,975
4. Private Households (5)			246,806		32,451	27,549		3,538	310,344
5. Enterprises (3)			93,439					4,138	97,577
6. Recurrent State (1)	27,800	20,000	12,730	1,900	17,400			2,400	82,230
7. Investment Savings (1)				32,252	47,726	29,183		1,342	110,503
8. Rest of World (94+1)		211,254							211,254
9. Total	746,354	977,608	352,975	310,344	97,577	82,230	110,503	211,254	

More detailed inspection reveals that over half of gross output is in primary and light industry sectors, with the highly capital intensive-type industry accounting for less than 8% of total output. Primarily because of capital insufficiency, Vietnamese industry is only beginning the path to modernisation and manufacturing diversification commensurate with its population size and resource base. For this reason, processed food, construction materials, and labour-intensive light industries dominate its secondary sector.

Excluding the construction sector, only about one third of Vietnam's gross output takes the form of marketable services. Service output, employment, and value added are the hallmarks of developed countries, the average in the OECD being 65%, and Vietnam is only beginning to develop this component of economic activity. As incomes and rural-urban migration rise over time, however, the share of services in overall output will grow substantially.

The second column of Table 2.4 gives sectoral shares of domestic supply, i.e. domestic output delivered to the domestic market. Generally, the differences between these and the gross output shares are better understood by reference to Column 3, which gives the corresponding export shares, a measure of supply-side trade dependence for each sector. Despite its heavy reliance on primary sector activities, Vietnamese exports are already more concentrated in sectors classified as industrial (40.22% against 31.89%). The main reason for this is the Textile and Apparel sector, which accounts for 14.81% of total exports in 1999.

More detailed examination of these shares reveals many opportunities for Vietnamese development, however. For example, food and non-food crops, such as rice and coffee, have significant export shares already but are generally thought to be producing well below their long term output and revenue potential. Likewise, the Oil and Gas sector has a significant share of 1999 exports, but is only beginning to develop its long term potential by overcoming capital constraints.

Table 2.4: Structure of Supply Demand, and Value Added for Vietnam, 1999

(all figures in percentages except as indicated)

		1	2	3	4*	5	6	7	8	9*	10	11	12
		X	Sd	E	E/Sd	C	I	Dd	M	M/Dd	VA	LVA	KVA
1	Rice	7.79	6.04	4.91	0.22	2.02	0.80	6.75	0.00	0.00	9.01	12.47	0.98
2	Raw Rubber	0.21	0.04	0.72	4.88	0.00	0.00	0.16	0.06	0.22	0.24	0.21	0.32
3	Coffee Beans	0.71	0.04	3.88	28.50	0.00	0.00	0.56	0.31	0.34	0.82	0.96	0.52
4	Other Crops	4.17	4.01	2.68	0.18	6.57	0.00	1.77	2.05	0.70	6.64	9.18	0.74
5	Livestock	3.50	3.24	0.30	0.03	7.95	0.39	3.29	0.02	0.00	3.65	4.94	0.66
6	Other Agriculture	0.47	0.46	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.40	0.46	0.27
7	Forestry	0.98	0.95	0.32	0.09	0.51	0.00	0.47	0.24	0.31	1.52	2.01	0.38
8	Fishery	2.85	2.09	4.00	0.51	3.25	0.00	2.37	0.69	0.18	3.28	4.26	1.01
9	Coal	0.80	0.41	1.28	0.84	0.31	0.25	0.66	0.00	0.00	0.91	0.86	1.04
10	Oil and Gas	3.63	0.04	13.23	95.38	0.00	0.14	0.66	0.51	0.47	6.71	1.49	18.86
11	Mining	1.55	1.43	0.56	0.10	0.00	0.03	2.37	0.31	0.08	0.73	0.71	0.75
	All Primary	26.67	18.74	31.89	13.98	20.60	1.60	19.58	4.19	0.13	33.92	37.53	25.52
12	Meat and Dairy	0.58	0.71	0.19	0.07	1.25	0.00	0.81	0.66	0.50	0.34	0.33	0.34
13	Beverage and Tobacco	2.27	2.54	0.61	0.06	6.26	0.06	1.91	1.89	0.60	2.62	1.77	4.58
14	Seafood	1.32	0.96	1.07	0.30	0.71	0.03	1.68	0.00	0.00	0.95	1.08	0.64
15	Other Proc Food	8.42	8.25	1.30	0.04	20.96	-0.17	14.42	2.06	0.09	2.54	2.24	3.23
16	Mfg Materials	5.18	5.85	2.04	0.09	1.80	0.16	7.16	3.53	0.30	3.18	2.17	5.53
17	Chemicals	2.17	5.99	3.57	0.16	2.71	0.86	3.12	16.17	3.15	1.21	1.13	1.39
18	Technical Mfg	1.02	3.85	3.69	0.26	5.19	5.38	1.37	12.93	5.75	0.65	0.64	0.69
19	Vehicles	0.88	2.21	0.96	0.12	2.43	1.03	1.41	4.95	2.13	0.34	0.39	0.21
20	Other Machinery	1.08	6.14	2.37	0.10	0.95	16.49	1.34	19.08	8.69	0.81	0.78	0.87
21	Textile and Apparel	4.26	3.80	14.81	1.04	4.76	1.21	5.64	12.80	1.38	2.86	2.85	2.88
22	Other Industry	2.32	3.73	9.61	0.69	2.90	0.31	2.75	11.44	2.53	1.85	1.78	2.01
	All Industry	29.48	44.03	40.22	0.28	49.92	25.37	41.62	85.52	1.25	17.34	15.17	22.38
23	Elec, Gas, Water	2.26	2.16	0.07	0.01	1.05	0.00	1.56	0.07	0.03	2.89	3.14	2.29
24	Construction	10.70	10.10	0.00	0.00	0.00	68.15	14.18	0.00	0.00	7.49	5.11	13.02
25	Trade	8.96	6.04	9.01	0.40	3.47	4.80	5.01	0.00	0.00	12.89	14.75	8.56
26	Transportation	3.23	2.91	5.14	0.47	1.91	0.07	3.11	3.65	0.71	3.29	2.59	4.91
27	Hotel and Restaurant	3.30	1.78	6.87	1.03	3.54	0.00	3.84	1.78	0.28	2.70	2.12	4.03
28	Personal Services	1.88	1.80	1.29	0.19	3.12	0.00	0.97	1.17	0.74	2.82	3.64	0.91
29	Commercial Services	6.35	5.85	4.03	0.18	7.16	0.00	4.50	2.98	0.40	8.13	4.58	16.39
30	Public Services	7.17	6.58	1.47	0.06	9.24	0.00	5.64	0.65	0.07	8.54	11.35	1.99
	All Service	43.84	37.23	27.88	0.24	29.49	73.02	38.80	10.30	0.16	48.74	47.30	52.10
	All Economy	100.00	100.00	100.00	14.50	100.00	100.00	100.00	100.00	1.54	100.00	100.00	100.00
		* Figures in these columns are simple ratios, with group weighted averages.											

In manufacturing, even a cursory review of column 3 indicates that Vietnam has not yet captured the export potential of dynamic growth sectors elsewhere in ASEAN, including technology, consumer durables, and even vehicles. These sectors not only leverage external demand for domestic employment and capacity development, but accelerate modernisation and confer many growth externalities on the domestic economy. In other economies of the region, the primary catalysts for development of these sectors were foreign capital and sustained state commitments to human capital development via education and labour market liberalisation.

A more focused comparison between production for domestic and external markets can be made with the ratios given in the fourth column of Table 2.4. Here the export orientation of certain sectors, such as cash crops and energy, comes into very high relief. Several agricultural sectors, including rice and fishery, are still directing the vast majority of their output to domestic markets, while their export potential at the margin is only beginning to be realised. Given that rice is an inferior good, its export potential at the margin of a growing economy is considerable. Conversely, fishery supply may increasingly be diverted to the domestic market as Vietnamese per capita incomes rise. In the latter case, export shares will depend heavily on capacity expansion in aquaculture, since marine fisheries in the region are being exploited near or even beyond sustainable capacity. Significantly, export ratios for food processing are also very low, indicating that the export potential of the Vietnamese agricultural sector, apart from classical cash crops like coffee and rubber, is far from being realised. Unless progress can be made in this area, rural incomes are unlikely to keep pace with growth of the overall economy.

The challenge facing Vietnam in an era of globalisation can be clearly seen in the average export ratio for industry, which indicates an economy with very low levels of external supply orientation in the growth inducing sectors that have accelerated development and living standards elsewhere in Asia. Without more external market linkage in a variety of essential industrial activities, Vietnam is likely to be a chronic underachiever in the Asian modernisation process that began with Japan and has continued to spread around the region. Again the main reasons are capital insufficiency and lack of access to technology, but institutional conditions can do much to overcome this, facilitating commercial and multilateral trade partnerships to leverage Vietnam's rich human and natural resource base.

Service sector export ratios are also very low. While it would be nice to see higher levels in externally oriented sectors like transportation and hospitality, low service exports are typical of all but the most advanced economies.

Demand patterns for Vietnam are captured in columns 5-9, and they reflect characteristics typical of economies at this stage of development. Average incomes

are quite low, and private consumption is concentrated on raw and processed food products, constituting about half of demand in this country. The remaining half is divided about equally between manufactures and services, although the figure of 9.24% may include non discretionary contributions for obligatory public services. Urban households have recently increased demand for durables, but on a national basis, Vietnamese households have very limited means for discretionary consumption. This is particularly true of the more than three quarters of the population residing in the rural sector. For this reason, the internal market cannot be expected to animate or sustain rapid investment in growth oriented sectors such as consumer durables or household/business/personal technology. These forces will only come into play after significant gains in domestic per capita income. Again these facts support the case for greater external orientation in investment and industrial policy.

Vietnamese investment patterns in 1999 also reflected those of an agrarian developing country. Over two thirds of capital outlays concentrated in the construction sector. The second largest type of investment demand, the aggregate Other Machinery sector, gives an indication of where capital goods spending can be expected to shift in the coming decades. In order to develop more diversified production capacity consistent with a modernising economy, however, one would expect to see investment demand increasing sharply in most of the non-food industrial activities, particularly those that are technology and infrastructure related.

Columns 7-9 describe demand patterns by origin of goods and services consumed. Here we see significant disparities between domestic and imported expenditure shares, largely a result of the degree of specialisation in today's Vietnam economy. Most food demand is met by domestic sources, while fully 85.52% of imports are manufactured goods for which there is little or no domestic substitute.[10] The largest component of domestic Service demand is for a nontradable, Construction. Column 9 gives ratios of relative import dependence that are analogous to the export ratios in column 4. These tell a similar story to the observations of the paragraph above, but more strikingly. The average import ratio for Primary products is only 0.34, while that for Industry is 6.33. This reinforces the impression of Vietnam as an emergent agrarian economy, still heavily reliant on imported technology and vulnerable to shocks in the global terms of trade. In the past, developing countries attempted to reduce these risks with inward oriented import substitution strategies. Today, it is generally acknowledged that imports are better displaced by domestic capacity developed from greater participation in external product and capital markets.

[10] At very detailed customs lines, one observes very little intra-industry trade in Vietnam for the same reason. This is symptomatic of low levels of domestic product diversification.

The sectoral information in columns 11-13 of Table 2.4 lead us into discussion of Vietnamese income determination, detailing value added shares for labour and capital across 30 activities. Here again we see characteristics typical of an agrarian economy on the verge of transformation. Over 80% of total value added arises in primary and tertiary activities, with industry accounting for only 17.34% (and less than 12% when food processing is excluded).

Among primary sectors, rice production predominates in value added, followed closely by other subsistence sectors. Oil and Gas has a large share of primary value added, but most of this goes to capital (column 12). Leaders in industry are processed foods, materials (this via downstream links to Construction), and Textile/Apparel. Among Services, the largest source of value added is commercial intermediation, the Trade sector. This is mainly made up of small scale operators capturing trade and transport margins in retail distribution channels.

It was observed earlier that OECD countries also generate the largest share of value added in Service activities, but of course this happens only after their transition through an industrial phase, where manufacturing becomes the dominant source of employment and factor income. Vietnamese services are characterises by relatively simple distribution activities and have neither the technological sophistication nor the skill-intensity of advanced economy professional services. Thus we can expect that Vietnam awaits a three state transition, accompanied by significant rural-urban demographic change: 1) the present stage, where agriculture and petty commerce dominate value added; 2) industrialisation and significant new urbanisation, driven by exports, inbound foreign direct investment (FDI), and technology transfer; 3) modernisation, with higher domestic incomes and a large, diversified internal market with a dominant, modern service sector.

Looking at value added by factor type, we see that over one quarter of Vietnam's labour income arises from rice production (Rice) and petty commerce (Trade). As can be expected in a country with relatively low levels of mechanisation, labour value added is high in most agricultural sectors and nearly 85% of Vietnam's labour value added accrues to primary and service sector employment.

To get a clearer impression of the relative rewards to different factors engaged in different activities, consider the labour to capital value added ratios in column 13. Here the labour intensity of certain activities is very obvious, like Rice, Livestock, Other Agriculture, and Forestry. By contrast, Oil and Gas, Beverage/Tobacco, and Manufactured Materials are much more capital intensive. Large disparities in factor intensity are also evident in Services, where Public Services are about 25 times more labour intensive than Commercial Services. All these differences imply that the employment and distributional implications of industry policy need careful

forethought. Sectors that are targeted for expansion, whether to serve domestic or external markets, can have very different effects on domestic factor use and relative incomes, and these effects will ultimately have political as well as economic consequences.

Consider a simple example from the Primary sector. Public funds could be allocated to promote one of two activities, upgrading rice yields and varietal quality or expanding capacity in the energy sector. The first program, particularly if it is focused on microeconomic incentives for crop development and not on mechanisation, would have a significant bias in favour of labour income, and thus alleviate poverty among the nation's poorest constituency. Expanding capacity in energy would increase capital value added at over five times (1/.18) the rate of growth of labour value added in that sector. At least as significantly, this sector would be a prime candidate for external financing, including technology transfers that can accelerate productivity and reduce environmental damage. Clearly, diversion of public investment funds to the latter sector would be regressive.[11]

2.3 Factor Incomes

Patterns of Factor ownership and relative returns to those factors are of course the primary determinants of both absolute and relative incomes. This is true in a market or command economy, or indeed any economy that attempts to combine the two types of organisation. While Vietnam is in a transition to a mixed economy, the labour intensity of most of its production activities means that labour compensation is the principal determinant of private domestic incomes. Because of its disaggregated treatment of both the sources of employment and occupational categories, the Vietnam SAM provides very detailed information on the functional distribution of income.

Table 2.5 displays the composition of direct income (value added) accruing to each of twelve labour categories and capital, represented here as percent shares of one Dong of value added in each of the 30 sectors (see section 4.2 for a key to the factor labels).[12] These figures thus sum to one hundred percent across each row, and value

[11] Because of its perceived strategic importance, energy has often been maintained as a state enclave in developing countries. This has generally had very adverse consequences, the most extreme case probably being in Mexico. There, the state petroleum monopoly chronically misallocated public funds, resisted innovation, and contributed to wage-driven inflation, corruption, and nearly catastrophic environmental damage. The environmental damage was direct, via pollution intensive extraction and refining methods, and indirect, via resistance to lead restrictions and vehicle emission standards.

[12] The sectoral classification used in the following tables is as already noted above based on a distinction among primary, secondary and tertiary sectors that is different from the classification used by the GSO. For example, GSO classifies Mining as a secondary sector of production together with Industry. Abbreviations used in Table 2.5 follow the labels regarding factor disaggregation used in Figure 4.2.

added weighted averages are given for each of the three generic activity categories: Primary, Industry, and Services.

In primary sectors, the majority of value added accrues to unskilled labour, totalling about 54% when Urban (column 1) and Rural (column 7) workers are combined. Excluding energy and mining sectors, returns to Primary unskilled labour are over two-thirds of total value added. Returns to capital in Primary activities vary tremendously, from a low of 3.26% in Rice to 84.5% in Oil and Gas.

Patterns of ownership in agriculture also differ sharply between subsistence and cash crops, where relative returns to capital in Rubber, Coffee, and Other Agriculture are over three times those in Rice, Other (food) Crops, and Livestock. This dichotomy reflects two main tendencies. Firstly, low levels of mechanisation exist in basic food production because of capital insufficiency and absence of scale economies. Second, state owned enterprises in the agricultural export sectors have succeeded, but not substantially transformed, the plantation system in terms of consolidated property ownership, technology, and factor use. One might argue that public ownership of the non-labour factors in this sector resolves the distributional problem. Historically, however, the management model for state owned enterprises (SOEs) has not been associated with high levels of retained earnings, thus reducing final income to the owners of capital, be they public or private.

Fishery, by contrast, has developed and expanded its export potential with over 90% of value added still accruing to labour. Perhaps more appropriate technology choice and extension programs could increase cash crop labour value added and external market access for small holders. Small holder promotion is an essential component of modern agricultural reform and sustainable rural development strategy.

Value added composition is more homogeneous across industrial sectors in Vietnam, with average shares for skill categories a little more uniform and higher shares for capital (34.04%). Unskilled labour as a group still receives more than half of value added on average, but female workers receive a much larger share in Industrial than in Primary employment. At present, we are inclined to scepticism about the Primary value added distribution, and suspect that females are under-represented there. We are currently examining the Vietnam National Household Survey intensively to improve these estimates for future work.

Important differences are still readily apparent, particularly in value added accruing to capital. Over half of all value added accrues to capital in the Beverage/Tobacco and Manufactured Materials sectors, and this is consistent with high levels of mechanisation.

Table 2.5: Factor Income Distribution by Sector

(all figures in percentages except as indicated)

		1	2	3	4	5	6	7	8	9	10	11	12	13
		L01UMU	L02UMM	L03UMH	L04UFU	L05UFM	L06UFH	L07RMU	L08RMM	L09RMH	L10RFU	L11RFM	L12RFH	Capital
1	Rice	34.49	9.42	2.10	1.53	0.35	0.00	37.06	8.17	1.83	1.44	0.35	0.00	3.26
2	Raw Rubber	23.14	5.56	1.08	0.84	0.34	0.11	22.16	4.81	0.96	0.80	0.30	0.10	39.80
3	Coffee Beans	31.19	7.50	1.47	1.14	0.44	0.12	29.88	6.49	1.31	1.09	0.40	0.10	18.87
4	Other Crops	41.57	13.07	1.98	1.30	0.45	0.02	26.22	8.59	1.80	1.24	0.41	0.02	3.34
5	Livestock	36.44	8.76	1.74	1.33	0.48	0.08	34.86	7.58	1.55	1.27	0.43	0.07	5.42
6	Other Agriculture	30.92	7.34	1.42	1.11	0.44	0.15	29.25	6.35	1.28	1.06	0.40	0.13	20.16
7	Forestry	38.63	8.08	1.58	1.22	0.48	0.13	32.17	6.99	1.41	1.17	0.43	0.11	7.59
8	Fishery	36.89	8.13	1.67	1.26	0.42	0.00	32.25	7.04	1.48	1.20	0.39	0.00	9.26
9	Coal	25.29	6.08	1.20	11.68	4.79	1.76	7.54	1.65	0.35	3.50	1.31	0.45	34.39
10	Oil and Gas	6.03	1.48	0.36	2.82	1.08	0.25	1.80	0.42	0.14	0.86	0.26	0.00	84.50
11	Mining	26.79	6.44	1.32	12.38	4.95	1.62	7.95	1.74	0.39	3.69	1.29	0.21	31.24
	Average Primary	30.12	7.44	1.45	3.33	1.29	0.38	23.74	5.44	1.14	1.58	0.54	0.11	23.44
12	Meat and Dairy	14.80	3.56	0.70	10.16	4.17	1.55	14.79	3.21	0.65	10.18	3.88	1.50	30.84
13	Beverage and Tobacco	10.12	2.44	0.50	6.96	2.84	1.04	10.12	2.21	0.46	6.97	2.65	1.00	52.69
14	Seafood	17.00	4.17	0.93	11.73	4.78	1.68	17.00	3.77	0.86	11.75	4.46	1.61	20.27
15	Other Proc Food	13.39	3.52	1.44	9.55	3.02	0.33	13.38	3.20	1.16	9.47	2.94	0.32	38.29
16	Mfg Materials	14.67	3.55	0.75	8.74	3.52	1.19	7.09	1.56	0.36	4.25	1.56	0.45	52.30
17	Chemicals	20.02	4.81	0.94	11.90	4.88	1.82	9.68	2.10	0.42	5.77	2.18	0.82	34.67
18	Technical Mfg	6.64	1.60	0.33	25.02	10.29	3.86	2.92	0.64	0.15	11.05	4.20	1.60	31.68
19	Vehicles	7.94	1.96	0.46	29.77	12.25	4.60	3.52	0.82	0.23	13.18	5.03	1.91	18.32
20	Other Machinery	17.34	4.17	0.82	15.23	6.26	2.34	8.32	1.81	0.38	7.14	2.71	1.03	32.45
21	Textile and Apparel	5.63	1.33	0.28	7.17	2.82	0.85	16.07	3.46	0.69	19.80	7.69	3.93	30.28
22	Other Industry	20.65	4.96	0.98	12.24	5.02	1.85	9.96	2.17	0.46	5.94	2.25	0.82	32.69
	Average Industry	13.47	3.28	0.74	13.50	5.44	1.92	10.26	2.27	0.53	9.59	3.60	1.36	34.04
23	Elec, Gas, Water	24.00	5.84	1.18	23.48	9.63	4.31	2.82	0.64	0.17	2.76	1.01	0.27	23.89
24	Construction	21.34	5.44	1.72	10.98	3.91	0.26	1.68	0.68	0.62	1.09	0.00	0.00	52.29
25	Trade	9.38	2.37	0.73	9.34	3.48	0.77	21.50	3.59	0.91	21.79	4.50	1.66	19.97
26	Transportation	12.94	3.12	0.64	20.67	8.49	3.16	1.61	0.36	0.10	2.70	1.00	0.32	44.90
27	Hotel and Restaurant	4.11	1.06	0.36	8.40	3.29	0.92	8.51	1.91	0.49	17.30	6.49	2.20	44.95
28	Personal Services	15.87	3.81	0.76	27.68	8.98	3.33	8.93	1.94	0.40	12.23	4.64	1.74	9.68
29	Commercial Services	6.84	1.67	0.40	12.58	5.09	1.78	2.74	0.63	0.18	5.05	1.87	0.56	60.63
30	Public Services	19.43	5.44	1.13	21.00	3.70	2.05	18.08	3.96	0.85	11.49	4.34	1.54	7.00
	Average Service	14.24	3.59	0.86	16.77	5.82	2.07	8.23	1.71	0.46	9.30	2.98	1.04	32.91
	Average Economy	19.28	4.77	1.02	11.20	4.18	1.46	14.08	3.14	0.71	6.82	2.37	0.84	30.13

Lower levels of capital share in value added is a double edged sword for economic modernisation in Vietnam. While it is desirable that labour receive significant compensation, returns to capital are indicators of both the incentive and the progress toward higher levels of technology and, ultimately, labour productivity. Most OECD countries passed through periods of high capital value added shares en route to their current high productivity, high wage status. If Vietnam succeeds in attracting the capital needed to transform its manufacturing base, it is reasonable to expect that capital value added shares will rise steadily for a decade or two before falling again. Of course, these relative gains for capital will be accompanied by absolute increases in labour value added as economic growth accelerates.

A final point worth noting about the Industry results is the very low share of value added accruing to Highly Skilled Labour, less than 5% for the averages of columns 3, 6, 9, and 12. In part this reflects the scarcity of this kind of labour in Vietnam, but of course it also reflects the stage of industrialisation and capitalisation arguments of the preceding paragraph. To realise its economic potential, Vietnam must more fully realise its human potential. A reformed market economy can facilitate this process by pairing technology with labour in ways that accelerate the growth of the skill base, steadily increasing labour productivity and, ultimately, wages. For a poor country with limited means of financing universal higher education, this is an essential consideration for economic growth policy.

Value added composition within Service sectors is quite diverse, and the averages in this group are not particularly illuminating. This is because services are produced and delivered with very diverse technologies. Construction and Commercial Services both have high capital shares, but for different reasons. The former is a classical, big machine capital intensive activity, while the latter is small machine, technology intensive. Personal and Public Services, by contrast, both give over 90% of value added to labour, skill composition varies somewhat between these sectors, but both are very labour intensive. Another interesting contrast is Transportation services and Hotel and Restaurants, which have nearly identical capital value added shares but very divergent labour shares because of sharply different skill composition.

2.4 Vietnam's Trade Patterns

Because the 1999 SAM contains very detailed data on Vietnamese imports and exports, it can be used to elucidate existing trade patterns and identify trade opportunities facing the country. Tables 2.6-2.9 give share calculations, but activity and trading partner, for the 30 sector SAM and 14 aggregate individual and aggregate trading partners. Because of limitations in the indirect sampling approach we were forced to use, these trade patterns are approximate, but they provide a wide spectrum of very serviceable indicators on the directions and significance of Vietnamese trade.

Export flows are covered in Tables 2.6 and 2.7, with the former depicting percent shares of Vietnamese exports across destinations for each activity (i.e. rows sum to 100). Consider Rice, for example. In 1999, more than two thirds (68%) of Vietnamese Rice exports were directed to ASEAN members. This figure is startling because it reveals how limited is the market scope of one of the world's most competitive Rice producers. Two considerations in particular should be taken into account with these results in mind. First, if Vietnam can improve its Rice product quality and marketing, most of the rest of the world market remains to be exploited. Second, in particular, Vietnam has not really begun to take advantage of export opportunities that will arise with its northern neighbour China, the world's largest rice consumer. Together with Other Asia, they represent more than half of world rice consumption and their supply capacity is severely taxed, yet this export market for Vietnam is negligible or non-existent.

A similar argument holds for Coffee and the United States (US). As of 1999, the European Union (EU) bought over half Vietnam's crop but the world's largest consumer buys only about a third as much. Many other coffee importing countries have negligible export shares. This pattern is repeated in a variety of Primary sectors, including food, forestry, fishery, and energy. In all cases, Vietnam's global market access appears quit restricted. In all likelihood, this results from a combination insufficient marketing and incomplete trade negotiations. When the majority of exports are going to only to or three trading partners, however, the result is limited competition and, in all likelihood, relatively unfavourable terms of trade. Vietnam clearly needs to expand both its export marketing and trade negotiating capacity.

A similar situation prevails in Industry, but not quite as much segmentation is apparent. It is natural that Vietnam should be fixed into the supply chain of its foreign venture partners, like Japan, Taiwan, Hong Kong, and ASEAN. At the same time, however, large shares for sectoral exports to the EU implies that market opportunities for final goods (and hence higher value added) exist in OECD countries. Here is where accelerated liberalisation with respect to the North American Free Trade Agreement (NAFTA) and ANZ could be very beneficial to Vietnam. Better to become a final goods export platform to these economies than a supplier of intermediate components to other ASEAN exporters. Industrial exports to China also deserve further consideration, given Vietnam's transportation advantages with respect to the Chinese interior and its wages relative to the prosperous Chinese export zones.

Table 2.6: Export Composition by Trading Partner

(all figures in percentages)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		ASEAN	Japan	Taiwan	China	HongKong	Korea	OthAsia	EU	EEurope	ANZ	USA	Canada	LatinAm	ROW
1	Rice	68	1	0	0	0	0	0	0	7	0	0	0	3	19
2	Raw Rubber	25	2	11	16	5	5	0	22	4	1	2	2	2	1
3	Coffee Beans	6	4	0	0	0	3	0	54	8	4	18	1	0	1
4	Other Crops	22	4	13	4	4	6	2	18	3	5	11	2	2	3
5	Livestock	4	10	0	0	39	0	0	5	19	0	17	5	0	0
6	Other Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Forestry	1	47	29	11	5	5	0	1	0	0	0	0	0	0
8	Fishery	6	45	1	0	7	4	0	16	1	2	14	1	0	0
9	Coal	12	42	4	1	0	3	0	28	0	0	1	0	5	4
10	Oil and Gas	29	17	0	11	0	1	0	0	0	36	6	0	0	0
11	Mining	14	23	22	14	0	6	0	1	16	4	0	0	0	0
	All Primary	17	18	7	5	6	3	0	13	5	5	6	1	1	3
12	Meat and Dairy	33	1	1	3	14	0	0	23	0	0	23	1	0	0
13	Beverage and Tobacco	14	2	2	0	53	0	0	10	2	1	1	14	0	1
14	Seafood	6	46	1	0	1	4	0	7	1	1	30	2	0	0
15	Other Proc Food	3	13	24	6	5	2	0	11	20	2	9	2	1	0
16	Mfg Materials	3	9	31	1	1	3	0	38	4	3	2	1	1	2
17	Chemicals	21	11	11	10	8	2	0	21	5	3	1	1	4	4
18	Technical Mfg	36	23	2	1	4	3	0	21	2	1	0	0	5	1
19	Vehicles	15	19	5	1	19	6	0	30	1	2	0	0	1	2
20	Other Machinery	27	29	10	2	5	2	0	15	2	1	3	0	3	1
21	Textile and Apparel	6	22	8	2	5	7	0	39	3	2	2	2	1	1
22	Other Industry	2	7	4	0	1	1	0	69	3	2	6	2	2	2
	All Industry	15	17	9	2	11	3	0	26	4	1	7	2	2	1
	All Services	15	16	5	3	2	2	0	33	3	8	6	1	2	2
	All Economy	16	17	7	4	6	3	0	24	4	5	7	2	1	2

Table 2.7: Export Composition by Commodity

(all figures in percentages)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		ASEAN	Japan	Taiwan	China	HongKong	Korea	OthAsia	EU	EEurope	ANZ	USA	Canada	LatinAm	ROW
1	Rice	19	0	0	0	1	1	0	0	11	0	0	0	11	39
2	Raw Rubber	1	0	2	3	1	1	2	1	1	0	0	1	1	0
3	Coffee Beans	1	1	0	0	0	4	3	7	9	2	13	4	0	2
4	Other Crops	4	1	6	3	3	5	49	2	3	2	5	3	3	3
5	Livestock	0	0	0	0	4	0	0	0	2	0	1	1	0	0
6	Other Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Forestry	0	1	2	1	1	1	0	0	0	0	0	0	0	0
8	Fishery	1	11	1	1	9	6	0	2	2	1	10	4	0	1
9	Coal	1	3	1	0	0	1	0	1	0	0	0	0	4	2
10	Oil and Gas	22	13	0	41	0	5	0	0	0	60	14	0	0	0
11	Mining	0	1	2	2	0	1	0	0	3	0	0	0	0	0
	All Primary	50	31	14	52	18	25	54	13	30	65	44	13	19	48
12	Meat and Dairy	0	0	0	0	1	0	0	0	0	0	1	0	0	0
13	Bev. and Tobacco	1	0	0	0	10	0	0	0	0	0	0	7	0	0
14	Seafood	0	3	0	0	0	1	0	0	0	0	6	2	0	0
15	Other Proc Food	0	1	6	2	2	1	1	0	8	0	2	2	1	0
16	Mfg Materials	0	1	12	1	1	2	2	3	3	1	1	1	1	2
17	Chemicals	4	2	8	10	8	2	8	3	5	1	1	2	10	6
18	Technical Mfg	8	5	1	1	4	4	1	3	2	1	0	1	12	1
19	Vehicles	1	1	1	0	6	2	0	1	0	0	0	0	1	1
20	Other Machinery	4	4	4	2	4	2	1	1	1	0	1	0	4	1
21	Textile and Apparel	5	20	21	7	22	35	8	20	14	3	4	29	13	8
22	Other Industry	1	4	7	0	3	3	0	23	9	2	10	15	13	7
	All Industry	25	41	61	23	61	53	20	55	42	8	26	59	54	26
	All Services	25	27	26	24	21	22	25	32	28	26	30	28	27	26
	All Economy	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The entries in Table 2.7 give a different perspective on Vietnam's exports, listing shares of each type of good or service in total exports to each trading partner. For example, 19% of all Vietnamese exports to ASEAN took the form of Rice (row 1, column 1). A quick glance at the last column reveals total export composition across activities, with 34% Primary products, 40% Industrial goods, and 26% Services (mainly commercial intermediation).

Beyond this, it is apparent that many trading partners demand Vietnams main exports, including Rice, Energy, and Textile/Apparel. Textile/Apparel goods are very prominent among exports to Taiwan, Korea, and Hong Kong, probably as intermediate deliveries to their large apparel sectors, while Canada is more likely a final consumer. Perhaps if it can attract greater overseas financial partnership, Vietnam can move up the value added ladder, divert intermediate textile exports to a domestic apparel sector, and export more finished goods to OECD countries. This process could be accomplished by negotiated capacity shifting from the intermediate export destinations like Taiwan, Korea, and Hong Kong.

Perhaps the most arresting feature of these export shares is the lack of diversity they reveal. This trade table is rather sparse (many zeroes), and the median value is only one percent. This indicates that half the possible trade linkages between Vietnam and the rest of the world, partitioned into only 14 groups and 30 products, are negligible or non-existent. Among the small number of remaining products and partners, trade is highly concentrated. This means that many external market opportunities are eluding this resource rich economy, and that its production structure lacks the diversification necessary to participate more fully in the process of globalisation.

Data in Tables 2.8 and 2.9 tell the story of Vietnam trade patterns from the import side. Looking at imports by activity, in percentage shares by country of origin, we see geographic patterns that differ significantly from exports. Several rows are not of great importance in the 1999 data, since imports in these categories were negligible. These include most Primary products, which together constitute only 4.19% of Vietnam's 1999 imports (see Table 2.4). Among those Primary goods that are imported, however, it is interesting to see China emerge as a prominent country of origin. Partners with significant agricultural subsidy programs, like the EU, ANZ, Canada, and the US are also significant sources of food crops, indicating that Vietnam is already being drawn into international food markets as an importer.

Table 2.8: Import Composition by Trading Partner

(all figures in percentages)

		1	2	3	4	5	6	7	8	9	10	11	12	13
		ASEAN	Japan	Taiwan	China	HongKong	Korea	OthAsia	EU	EEurope	ANZ	USA	Canada	LatinAm
1	Rice	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Raw Rubber	88	1	0	7	0	1	0	0	0	0	2	0	0
3	Coffee Beans	13	0	0	84	0	0	0	2	1	0	0	0	0
4	Other Crops	13	7	1	25	0	1	0	17	1	24	5	3	2
5	Livestock	51	0	0	16	0	1	0	21	0	0	10	0	0
6	Other Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Forestry	64	1	5	1	0	0	0	12	1	7	5	0	3
8	Fishery	33	0	1	1	7	6	11	7	3	5	8	10	6
9	Coal	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Oil and Gas	71	0	15	0	0	0	0	0	14	0	0	0	0
11	Mining	27	1	15	23	0	3	0	7	18	1	2	1	0
	Average Primary	33	1	3	14	1	1	1	6	3	3	3	1	1
12	Meat and Dairy	14	1	0	4	0	0	0	16	8	49	9	0	0
13	Beverage and Tobacco	67	0	0	5	24	0	0	2	0	0	0	0	1
14	Seafood	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Other Proc Food	59	1	4	7	0	3	0	10	5	6	3	1	1
16	Mfg Materials	36	7	17	7	1	13	0	8	3	2	3	1	2
17	Chemicals	31	7	10	11	0	12	2	12	6	0	5	1	1
18	TechnicalMfg	32	23	8	4	0	8	1	15	4	1	2	0	0
19	Vehicles	39	10	4	3	1	7	1	13	14	3	3	0	0
20	Other Machinery	25	15	16	10	0	12	1	11	3	4	2	0	0
21	Textile and Apparel	8	8	30	30	0	19	0	3	0	1	1	0	0
22	Other Industry	35	2	23	5	0	14	1	7	2	0	6	0	2
	Average Industry	31	7	10	8	2	8	1	9	4	6	3	0	1
	Average Services	28	12	16	9	1	12	1	10	4	2	2	0	1
	AllEconomy	31	7	10	11	1	7	1	8	4	4	3	1	1

Table 2.9: Import Composition by Commodity

(all figures in percentages)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	
	ASEAN	*Japan*	*Taiwan*	*China*	*HongKong*	*Korea*	*OthAsia*	*EU*	*OthEur*	*ANZ*	*USA*	*Canada*	*LatinAm*	*ROW*	*Ave*
Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Raw Rubber	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coffee Beans	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Other Crops	1	1	0	5	0	0	0	3	0	20	4	13	6	2	4
Livestock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Forestry	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Fishery	1	0	0	0	5	0	7	1	0	1	2	13	6	4	3
Coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil and Gas	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0
Mining	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0
AllPrimary	4	1	1	8	5	1	7	4	4	22	6	26	14	7	8
Meat and Dairy	0	0	0	0	0	0	0	1	1	13	2	0	0	0	1
Beverage and Tobacco	4	0	0	1	52	0	0	0	0	0	0	0	2	1	4
Seafood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Proc Food	4	0	1	1	1	1	0	2	3	5	2	2	4	0	2
Mfg Materials	4	2	4	2	2	4	0	3	2	3	4	6	13	2	4
Chemicals	17	11	11	16	7	17	38	19	23	3	25	40	13	35	20
TechnicalMfg	14	29	7	5	5	9	11	19	14	8	9	4	1	5	10
Vehicles	7	5	1	1	7	3	3	7	17	6	5	3	1	12	6
Other Machinery	17	28	20	17	2	20	12	22	16	28	11	5	8	9	15
Textile and Apparel	3	9	26	35	2	21	4	4	1	3	3	3	4	3	9
Other Industry	14	3	17	5	5	14	14	8	7	1	24	2	30	17	12
AllIndustry	86	87	88	83	84	89	82	85	86	69	86	66	75	85	82
AllServices	10	12	11	9	11	11	10	11	10	9	8	8	11	8	10
AllEconomy	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Of more interest are Industrial goods, where most of Vietnam's import demand is concentrated. Here ASEAN is a consistently important trading partner, but we also see China again in a more prominent role than it held as an export destination. Otherwise, Vietnamese dependence on more technologically advanced countries, like Taiwan, Korea, Japan, and the EU, is exactly what one would expect for its stage of development. Service imports to Vietnam are made up primarily trade and transport margins (see again Table 2.4), and thus are distributed according to origin of other imports.

Import shares by activity, for each trading partner, are given in Table 2.9. These bear out the manufacturing import dependence alluded to earlier. Consistently, the largest shares of imports are in Chemicals, Machinery, and Technical Manufactures, all areas where an agrarian economy could be expected to be import dependent. On the other hand, these are precisely the leading sectors in the now established pattern of modern Asian industrialisation. Service imports are a relatively constant share of imports by country of origin, fluctuating around the average of 10%.

This concludes a preliminary tour of the 1999 Vietnam SAM database. In this overview of the table, many digressions were made to illustrate the scope for policy interpretation that arises from direct inspection of the database. Our hope is that these few examples will provoke deeper analysis by policy makers and research professionals, realising the potential of this information structure to light the way to economic progress and sustainable prosperity for Vietnam.

3. Construction of the 1999 MacroSAM

3.1 Background, Definitions and Labels

This Section documents in detail the construction of the 1999 MacroSAM for Vietnam. Almost all the necessary aggregated data are available in published form, including GSO (2001), World Bank (2001) and CIEM (2000). In what follows, reference is made to the individual cells in Table 2.2 which contains a schematic macroeconomic SAM for Vietnam. It has nine rows and nine columns. Corresponding rows and columns share the same label. For example, row three and column three are both labelled "factors". In the MacroSAM, entries are in the form of macroeconomic aggregates, and the row/column labels are defined below. The definitions in Box 3.1 are designed so as to provide information on how the SAM is structured and give a sense of how the SAM can be disaggregated to illustrate more economic detail.[13]

[13] For detailed discussion on the methodology of SAM construction, see e.g. Reinert and Roland-Holst (1997). This sub-section also draws upon Arndt et al. (1998).

In a social accounting matrix (SAM), rows track receipts, while columns track expenditures. Hence, row and column sums represent, respectively, total receipts and total payments by a given account/institution. In the tradition of double entry accounting, row sums must equal column sums. Consider, for example, the second row/column, labelled Commodities. The row sum represents total demand for marketed goods and services in purchaser prices (i.e., producer prices plus a margin to cover trade and transport margins, costs of bringing the commodities from the producer to the consumer), comprised of intermediate demand from activities, private consumption of marketed commodities by households, state consumption, investment demand and exports. Accounting rules dictate that demand for commodities must equal supply, which appears as the Commodities column sum.

Total supply is composed of market sales of commodities by the Activities account, consumption taxes and import tariffs levied by government, as well as imports from the rest of the world (ROW). Marketed production may be either consumed domestically or exported.

Box 3.1	**SAM Definitions**
1. Activities	In the activity row, goods and non-factor services (valued at producer prices) are produced for sale in the commodity market. More than one activity can in principle produce the same commodity. This is so when different technologies are used. For example, rice might be produced by small traditional farmers, requiring limited inputs, and more commercially oriented enterprises that employ greater quantities of inputs thus obtaining higher yields. Hence, the commodity Rice can be produced (in the column) by two activities - one traditional and one modern. This possibility is not allowed for in disaggregating the MacroSAM presented here.
2. Commodities	Commodities are supplied in the column (to the commodity market) by activities in the form of marketed production at producer prices and from the rest of world in the form of imports of goods and non-factor services. Domestic agents demand commodities valued at purchaser prices in the row for intermediate consumption, private consumption, state consumption, and investment. Exports are demanded by the rest of the world. Marketed goods are formed in the commodity column by adding taxes/tariffs to the price of goods supplied from domestic production activities and goods imported from the rest of the world.
3. Factors	Factors typically include labour, capital, and land, but in the case of Vietnam the necessary data on returns to land are not available. Total payments to factors from productive activities (in the row) comprise value added, whereas the supply of factor inputs enters in the activity

	column. Factor income is distributed (in the column) as returns to labour and capital in the form of wages, salaries and other benefits, gross profits and factor taxes.
4. Households	In more detailed SAMs, household accounts attempt to capture the characteristics of different policy relevant socio-economic groups of the population. Households differ principally in terms of factor ownership and consumption patterns. Total income (in the row) consists of wages, including other benefits, distributed profits from enterprises, social security payments, and net transfers from abroad. Income is allocated (in the column) to consumption, income taxes and household savings.
5. Enterprises	Enterprises earn profits and receive foreign transfers (in the row). This income is distributed (in the column) to households, withheld as retained earnings or paid as taxes. Enterprises may be State Owned Enterprises (SOEs), private domestically owned enterprises, or foreign-invested companies.
6. Recurrent State	The state is an institution that levies a variety of taxes to obtain revenue (in the row) and spends a recurrent budget (in the column) on public current and capital expenditure and a diverse set of transfer payments. The difference between recurrent spending and total tax revenue represents state savings.
7. Investment /Savings	The capital account captures the balance between investment (in the column) and total savings (in the row). The latter include household savings, retained earnings, state savings, and net capital inflows (foreign savings) defined below.
8. Rest of World (ROW)	This account reflects the balance between foreign exchange receipts (in the column) for goods, services, remittances, and other international transfers and imports of goods and non-factor services from the rest of the world (in the row). The net capital inflow cell captures in principle the sum of balance of payments entries not appearing elsewhere in the row or column.
9. Total	Sums of columns and rows. Row sums must by definition equal column sums.

GDP at market prices can be found as the sum of the following cells:

GDP = (3,1) + (6,1) + (6,2), equivalent to value added at factor prices plus indirect taxes (output taxes), import tariffs and consumption taxes.

Alternatively, GDP at market prices may be found as:

GDP = (2,4) + (2,6) + (2,7) + (2,8) - (8,2), equivalent to the sum of household and state consumption, investment and exports minus imports.

As discussed further below published data in GSO (2001) are not completely consistent using these two approaches due to (i) a statistical error (GSO, 2001, p. 134), and (ii) the practice of GSO of adding in all production taxes (i.e., also factor taxes in cell (6,3)) in the value added figure published.[14]

The macroeconomic SAM in Table 2.2 treats exports in a manner that is consistent with the consolidated version of the reduced SNA SAM matrix procedure. Exports could alternatively be extracted from marketed production in the commodities column and placed in the activities row and sold to the rest of the world. Consequently, in this formulation marketed production would only refer to commodities produced by domestic firms and consumed on the domestic market. This is sometimes convenient as the column sum of the commodities account would correspond to total absorption. Comparison of the magnitude of consumption taxes relative to total absorption would also be a simple matter.

However, in the SNA and in the SAM structure employed here, exports are included in the so-called "goods and services" account as commodities adding to demand alongside other cells in the commodity row. Hence, the SNA "goods and services" total does not correspond to a concept of absorption in the domestic economy. In addition, since exports are passed to the rest of world through the commodities accounts, the domestic figures in cell (1,2) refer to total marketed sales of activities at producer prices regardless of whether those sales are destined for domestic or international markets.

3.2 Documenting the 1999 Vietnam MacroSAM

The actual 1999 MacroSAM of Vietnam is reproduced from Table 2.3 in Table 3.1 to facilitate discussion. Values (in Bill. VND) have been assigned to all of the cells in Table 2.2 for which a transaction between two accounts took place. The sources of information relied upon include in particular national accounts data from GSO (2001). This source was supplemented with data in CIEM (2000) and the World Bank (2001). The latter reports official information on government revenue collected from the Ministry of Finance (MOF). Detailed notes on data sources, assumptions, and procedures in compiling Table 3.1 are outlined below. Throughout, the relevant cell in Table 2.2 is referred to as (i, j) where i refers to the row and j to the column.

[14] A complete discussion of the economic relationships embodied in a SAM can be found in Pyatt and Round (1985).

Table 3.1: Macroeconomic Social Accounting Matrix for Vietnam

Receipts	Expenditures								
	1. Activities (97)	*2. Commodities (97)*	*3. Factors (13)*	*4. Private Households (5)*	*5. Enterprises (3)*	*6. Recurrent State (1)*	*7. Investment Savings (1)*	*8. Rest of World (94+1)*	*9. Total*
1. Activities (97)		746,354							746,354
2. Commodities (97)	365,579			276,192		25,498	110,503	199,836	977,608
3. Factors (13)	352,975								352,975
4. Private Households (5)			246,806		32,451	27,549		3,538	310,344
5. Enterprises (3)			93,439					4,138	97,577
6. Recurrent State (1)	27,800	20,000	12,730	1,900	17,400			2,400	82,230
7. Investment Savings (1)				32,252	47,726	29,183		1,342	110,503
8. Rest of World (94+1)		211,254							211,254
9. Total	746,354	977,608	352,975	310,344	97,577	82,230	110,503	211,254	

Cell (1,2) "Activities-Commodities": Marketed production (Bill. VND 746,354)

This transaction corresponds to the total value of sales (at producer prices) in the activities row. This amount is not immediately available in published sources. However, by definition the row total must equal the column total, which includes intermediate consumption, value added and indirect taxes. The gross output figure reported in GSO (2001, p. 90) cannot be used directly as it includes a variety of taxes captured under the heading of production taxes. No breakdown hereof is available.

Cell (2,1) "Commodities-Activities": Intermediate consumption (Bill. VND 365,579)

Intermediate consumption is documented by the GSO (2001, p. 90) in producer prices in accordance with the 1999 GSO 20-sector input-output breakdown.

Cell (2,4) "Commodities-Households": Private consumption (Bill. VND 276,192)

Private consumption is taken directly from the balance sheet of gross domestic product as documented in GSO (2001, p. 134).

Cell (2,6) "Commodities-State": State consumption (Bill. VND 25,498)

As for private consumption, state consumption data is obtained from the balance sheet for gross domestic product documented in GSO (2001, p. 134)

Cell (2,7) "Commodities-Investment/Savings": Investment (Bill. VND 110,503)

Gross capital formation, which is the sum of fixed capital formation (Bill. VND 102,799) and changes in inventories (Bill. VND 7,704), is reported by GSO (2001, p. 134).

Cell (2,8) "Commodities-ROW": Exports (Bill. VND 199,836)

Aggregate exports (FOB) are available from the gross domestic product balance sheet in GSO (2001, p. 134).

Cell (3,1) "Factors-Activities": Value added (Bill. VND 352,975)

Total value added is calculated as the sum of compensation of employees (Bill. VND 246,806), consumption of fixed capital (Bill. VND 44,210), operating surplus (Bill. VND 49,319) and total factor taxes (Bill. VND 12,730). These data are documented in what follows. As compared with the value added figure in GSO (2001, p. 90), a downwards adjustment was made to reflect that factor taxes in cell (6,3) are only one element of total production taxes. However, the statistical error of Bill. VND 833 between total demand and supply is added to value added to ensure consistency.

Cell (4,3) "Households-Factors": Wages, salaries and other benefits (Bill. VND 246,806)

Compensation of employees is reported by GSO (2001, p. 121). It is noted that the split of mixed income of farmers into compensation of employees and gross profits requires careful attention in future work. However, the value used in cell (4,3) is consistent with the remainder of the 1999 MacroSAM.

Cell (4,5) "Households-Enterprises": Distributed profits and social security (Bill. VND 32,451)

No reliable information is available. This entry is therefore left to balance the row and column totals.

Cell (4,6) "Households-State": Social security (Bill. VND 27,549)

No reliable information is available. This entry is therefore left to balance the row and column totals.

Cell (4,8) "Households-ROW": Net foreign transfers to households (Bill. VND 3,538)

Data are available on values in cells (2,8), (6,8), (7,8) and (8,2) as reported elsewhere in this summary. This implies that the sum of cells (4,8) and (5,8) can be calculated residually, equal to Bill. VND 7,676. This flow is shared out between households and enterprises using the 1998 shares provided by CIEM (2000, p. 40). This implies that ROW transfers to households are equal to (11,418-2,400-1,342)*(9,662/20,963). Please note that total net transfers to households and enterprises is consistent with the balance of payments information available in GSO (2001, pp. 213-214).

Cell (5,3) "Enterprises-Factors": Gross profits (Bill. VND 93,439)

Returns to capital are calculated by adding consumption of fixed capital (Bill. VND 44,120) and operating surplus (Bill. VND 49,319) which are documented in GSO (2001, p. 121).

Cell (5,8) "Enterprises-ROW": Net foreign transfers to enterprises (Bill. VND 4,138)

This entry was derived as described above under cell (4,8). Thus, the calculation is: (11,418-2,400-1,342)*(11,301/20,963).

Cell (6,1) "State-Activities": Indirect taxes (Bill. VND 27,800)

Using data from the World Bank (2001) on government revenue, which is based on Ministry of Finance calculations and staff estimates, total indirect taxes are derived as the sum of license taxes (Bill. VND 400), value added taxes (Bill. VND 17,200), agricultural taxes (Bill. VND 2000), fees and charges (Bill. VND 3,600) and other taxes (Bill. 4,600).

Cell (6,2) "State-Commodities": Consumption taxes and import tariffs (Bill. VND 20,000)

Data from a World Bank (2001) document excises (Bill. VND 4,500), taxes on trade (Bill. VND 14,500) and petroleum surcharges (Bill. VND 1,000). The sources of revenue are attributed to the consumption and import tax cell.

Cell (6,3) "State-Factors": Factor taxes (Bill. VND 12,730)

Information exist (World Bank, 2001) to document the following: Capital user charges (Bill. VND 1,500), land and housing taxes (Bill. VND 300), taxes on transfer of properties (Bill. VND 1,000), taxes on land use rights (Bill. VND 300), and natural resource taxes (Bill. VND 4,600). They are included in the factor tax account as direct tax revenue. Rental of land (Bill. VND 600) and capital revenues (Bill. VND 800) are added as non-tax government income based on the same source. To this sum of Bill. VND 9,100, Bill. VND 3,630 are added. This is justified to ensure balance in the state revenue accounts.

Cell (6,4) "State-Households": Income taxes (Bill. VND 1,900)

Information on personal income taxes come directly from World Bank (2001).

Cell (6,5) "State-Enterprises": Enterprise income taxes (Bill. VND 17,400)

Government revenue from enterprises originates from both tax and non-tax sources. World Bank (2001) documents government income from direct corporate income taxes (Bill. VND 14,500) and non-tax revenue from net profits after tax (Bill. VND 2,900). The sum is entered in the enterprise tax account.

Cell (6,8) "State-ROW": Net foreign transfers to state (Bill. VND 2,400)

Foreign aid (or grants) to government is documented in World Bank (2001).

Cell (7,4) "Investment/Savings-Households": Household savings (Bill. VND 32,252)

Total household savings are documented under the income and savings account in GSO (2001, p. 161).

Cell (7,5) "Investment/Savings-Enterprises": Retained earnings (Bill. VND 47,726)

This entry is the sum of retained earnings in the income and savings account of non-financial institutional sectors (Bill. VND 37,801) and financial institutional sectors (Bill. VND 9,925) as listed by GSO (2001, pp. 157-59).

Cell (7,6) "Investment/Savings-State": State savings (Bill. VND 28,349)

State savings in 1999 are documented in GSO (2001, p. 155).

Cell (7,8) "Investment/Savings-ROW": Net capital inflows (Bill. VND 1,342)

This entry is derived from the balance of payments information in GSO (2001, pp. 213-14) by deducting total incurrence of liabilities (Bill. VND 39,240) from total acquisition of financial assets (Bill. VND 40,582).

Cell (8,2) "ROW-Commodities": Imports (Bill. VND 211,254)

Aggregate import data are available in a supply balance sheet in GSO (2001, p. 134).

Summing up, it can be noted that the accounts of the MacroSAM balance. This is - with few exceptions so - based on published data. The only problems encountered include that no data were available on cells (4,5) and (4,6). They were therefore left as residuals. Moreover, the estimated data available on factor taxes in cell (6,3) were adjusted slightly upwards to balance the revenue account. Finally, net foreign transfers to households and enterprises were disaggregated as discussed.

4. The Disaggregated 1999 Vietnam SAM

4.1 Background

To allow for more detailed policy experiments and establish the basis for a CGE model, the MacroSAM established in Section 3 must be disaggregated. This Section documents the 1999 disaggregated SAM for Vietnam, which is in effect a matrix with dimensions 312x312. There are 97 production activities with 97 counterpart commodities. In addition, there are: 13 factors, five household types, three enterprises, one state account, one investment/savings account and 95 accounts related to foreign trade and capital flows. Factors include twelve types of labour and one aggregate capital factor. Labour is disaggregated by rural-urban, gender and educational level. Household disaggregation takes account of the rural-urban, farm/non-farm and wage/self-employed dimensions. Enterprises include state, private (non-state) and foreign-invested companies. Some 94 trading partners are also identified. A summary overview is provided in Table 4.1 with more detailed information given in annexes to this document.

The primary data sources for disaggregating the 1999 SAM are the 1996 I/O table (GSO, 1999), the 1997-98 VLSS household survey (GSO, 2000) and the COMTRADE international trade database (UNSO, 2001). Other necessary information was available in the national accounts for the period 1990-2000, found in GSO (2001) and various other published sources. In what follows, the disaggregation is documented step-by-step, referring to the individual cells in the MacroSAM in Table 2.2. It should be noted that judgement was necessary at many points in the SAM estimation procedure.

Table 4.1: Dimensions of the 1999 MacroSAM

Receipts	Expenditures								
	1. Activities (97)	*2. Commodities (97)*	*3. Factors (13)*	*4. Private Households (5)*	*5. Enterprises (3)*	*6. Recurrent State (1)*	*7. Investment Savings (1)*	*8. Rest of World (94+1)*	*9. Total*
1. Activities (97)		97 x 97							97 x 1
2. Commodities (97)	97 x 97			97 x 5		97 x 1	97 x 1	97 x 95	97 x 1
3. Factors (13)	13 x 97								13 x 1
4. Private Households (5)			5 x 13		5 x 3	5 x 1		5 x 95	5 x 1
5. Enterprises (3)			3 x 13					3 x 95	3 x 1
6. Recurrent State (1)	1 x 97	1 x 97	1 x 13	1 x 5	1 x 3			1 x 95	1 x 1
7. Investment Savings (1)				1 x 5	1 x 3	1 x 1		1 x 95	1 x 1
8. Rest of World (94+1)		95 x 97							95 x 1
9. Total	1 x 97	1 x 97	1 x 13	1 x 5	1 x 3	1 x 1	1 x 1	1 x 95	

These judgements were made by consensus in the research team and took account of the best available data, state-of-the-art estimation techniques, and any relevant precedence in the case of SAM estimation for Vietnam and other countries. In any case, all these decisions are spelled out in detail below. The authors accept full responsibility for all errors and omissions, but we also note that SAM estimation, like all production of economic statistics, is a continuing process subject to revision and improvement.

4.2 Documenting the 1999 Disaggregated SAM

Cell (1,2) "Activities-Commodities": Marketed production

Marketed production is disaggregated into a 97x97 diagonal matrix. This implies that there are, in principle, 97 commodities supplied to the market from counterpart production activities, recalling that in cases where domestic production of a commodity does not exist, the relevant entry in the diagonal is nil. The necessary data include the 20 sector 1999 gross output figures (GSO, 2001, pp. 90-94) and the 97 sector 1996 I/O table (GSO, 1999).

To illustrate the up-dating of 1996 figures, consider as an example the sector "agriculture" in GSO (2001). As documented by GSO (2001, p. 262), gross output of the agriculture sector corresponds to the sum of production in 10 agricultural sub-sectors that correspond, sector by sector, to the I/O classification. In other words, data exist on gross output sector by sector, but the level of aggregation is higher than the 1996 I/O grouping. The 20 sector information from GSO (2001) was therefore disaggregated into 97 activities, relying on 1996 gross output shares. In effect, it is assumed that the structure within, for example, agriculture (i.e., among the 10 agricultural sub-sectors) remained unchanged between 1996 and 1999. However, changes in the structural composition between for example agriculture and manufacturing (or among the 20 aggregated sectors) are captured. Finally, individual sector gross output figures were adjusted downwards proportionally so as to correspond to the total marketed production reported in the MacroSAM.

Cell (2,1) "Commodities-Activities": Intermediate consumption

Intermediate consumption is reflected in a 97x97 I/O matrix. Instead of a matrix with zeros outside the diagonal, cell (2,1) reflects that in principle 97 activities can supply inputs to 97 commodity accounts. Zeros are therefore only encountered whenever a sector does not supply inputs to production of a given commodity. Summing-up total intermediate consumption (down the columns) sector by sector (using the 1996 I/O

table) gives a 97x1 vector where each element represents total input to productive activities from a given sector. A similar vector in dimension 20x1 exists as reported by GSO (2001, pp. 90-94). Thus, the 97x1 total input supply vector for 1999 could be calculated using exactly the same procedure as in deriving cell (1,2). Finally, based on the 1996 I/O table 97x97 input-output coefficients were derived and multiplied with the 1999 total input supply vector to get the individual entries for the 1999 97x97 I/O matrix. Thus, individual I/O coefficients from 1996 are relied on but compositional changes at the 20-sector level are captured.

In the context of official estimates for intermediate flows, it can be mentioned that some authors have questioned the veracity of Vietnamese estimates in the 1996 I/O table. For example, Nielsen (2001) questioned the plausibility of certain flows in the 1996 intermediates table. With the benefit of direct access to official sources for this data, we have carefully examined the survey methods used to produce the Vietnamese I/O estimates and believe these doubts are unfounded. For the sake of illustration, consider four examples of intermediate flows that were challenged and modified by ad hoc methods, even though they appear empirically sound:

(i) Deliveries from Non-Alcoholic Beverages to Fishery – Ice is indispensable for the storage, packaging, and transport of fishery products. Ice is produced in the Non-Alcoholic Beverages sector.

(ii) Deliveries from Fishery to Cement – An essential ingredient in cement is lime, obtained in most tropical countries from pulverised shellfish. Shells are also used in many countries for road building.

(iii) Deliveries of Processed Fruit and Vegetables to Rice – Vietnam has an active organic fertilisation programme that recycles food processing waste back to composted soil amendments.

(iv) Deliveries of Rice to Apparel – The most ubiquitous item of apparel in Vietnam, indeed the visual icon of rural life, is a large, conical hat made primarily of rice fibre. Other rice-based apparel include traditional farmer's footwear and raincoats.

Cell (2,4) "Commodities-Households": Private consumption

The splitting of the aggregate household account into five household categories is a critically important feature of the SAM since it is at the core of the income distribution and expenditure nexus of the economy. Relevant information is available in the Vietnam Living Standard Survey (VLSS) for 1997/98 (GSO, 2000). The VLSS was based on a nationally representative sample of 6,000 households. The rural/urban stratification in the SAM corresponds to the 1997/98 VLSS classification, resulting in

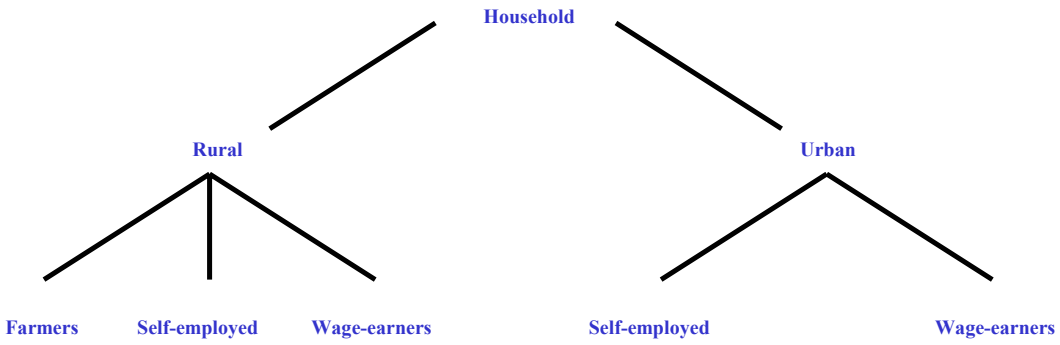
an estimated 77,57% of the population living in rural areas and 22,43% in urban areas (GSO, 2000, p. 23). Moreover, one of the main features of the VLSS is the split between self-employed and wage-earning households. This is carried over into the SAM and the same goes for the VLSS distinction of rural people between those who derive their income from agriculture, and those who are not farmers. A similar farm/non-farm distinction is not maintained for urban people.

In sum, five different households are identified in the Vietnam MicroSAM: two urban and three rural households as listed below.

(i) HRF: Rural Farmers
(ii) HRS: Rural Self-employed, Non-farm
(iii) HRW: Rural Wage-earners
(iv) HUS: Urban Self-employed
(v) HUW: Urban Wage-earners

For a further illustration, see Figure 4.1. Rural farmers are by far the largest household group, and they receive some 84% of total wages, salaries and other income paid to rural people. The remainder 16% is divided equally between rural self-employed (non-farm) households and rural wage-earning households. The composition of urban self-employed and wage-earning households is more equal both in terms of number of households and income.

Figure 4.1: Illustration of the Household Disaggregation



Some 57% of total urban compensation of employees go to urban self-employed, whereas 43% go to urban wage-earning households (GSO, 2000, p. 164). Combining urban-rural residence with the relevant level of wage compensation, the following household shares of total wage income appear: HRF (65%), HRS (6%), HRW (6%), HUS (13%) and HUW (10%).

The disaggregation of private consumption in cell (2,4) takes place in four steps.

First, total private consumption in 1999 of the 97 commodities (i.e., a 97x1 vector) is calculated by combining information in GSO (1999) about the sector composition of private consumption in 1996 with aggregate private consumption in 1999, available in the MacroSAM.

Second, assuming that consumption for each of the household types is proportional to income; total consumption can be allocated onto the five households. This is done by combining the share of total income going to each household (discussed above) with the total private consumption figure documented in the MacroSAM.

Third, the above two points give row and column totals for the 97x5 dimension matrix inherent in cell (2,4). To proceed, initial values of these 97x5 entries are required for a so-called RAS matrix balancing procedure (discussed further below). Unfortunately, directly reported consumption vectors by these five household types are not available.[15] However, they can be estimated from existing VLSS information (GSO, 2000, p. 275) by estimating two expenditure share vectors, one for HRF and one for the remaining four household types. While income levels differ for the last four households, it is therefore assumed that the underlying commodity composition is comparable. However, the HRF is different, reflected in a much higher share of subsistence (e.g., rice) consumption (21% as compared to 8%). The two consumption vectors are estimated using VLSS information on, respectively, rural and urban consumption of 13 different commodities split out according to the I/O classification of commodities.[16] Combining the resulting consumption vectors with total consumption for each household (calculated above), estimates of the share of total consumption each household spends on each of the 97 commodities are obtained.

Fourth, a proportional RAS procedure was adopted to make use of the information under points 1, 2 and 3. In this way, the individual cell entries (from point 3) were readjusted so as to respect original total in the rows (point 1) and columns

[15] A consumption vector shows (by household) the expenditure shares of total consumption for each of the 97 different commodities.

[16] The conversion was done as follows: Food stables = I/O classification 1, Other food = I/O classification 4, 5, 6, 7, 8, 12, 18, 19, 20, 21, 22, 25, 26, 27, 29, 30, Fuel = I/O classification 11, 13, 72, 73, 74, 75, Food and drink away from home = I/O classification 80, Drinking and smoking = I/O classification 23, 24, 28, Clothing and footwear = I/O classification 61, 62, 64, 66, Housing = I/O classification 90, Durable goods = I/O classification 34, 52, 55, 57, 58, 60, Health = I/O classification 43, 93, Transportation and communication = I/O classification 52, 79, 81, 82, 83, 84, 85, Education = I/O classification 92, Culture and sports = I/O classification 94, Others = I/O classification 31, 32, 33, 44, 45, 47, 50, 51, 59, 63, 69, 70, 71, 76, 78, 86, 87, 88, 95, 96, 97.

(point 2). What the RAS procedure does is to adjust the row and column entries proportionately until the specified totals are obtained.[17]

Cell (2,6) "Commodities-State": State consumption

Using share parameters from the 1996 I/O table (GSO, 1999), total government consumption for 1999 (from the MacroSAM) can be disaggregated across the 97 commodities.

Cell (2,7) "Commodities-Investment/Savings": Investment

Using share parameters from the 1996 I/O table (GSO, 1999), gross capital formation for 1999 (from the MacroSAM) can be disaggregated across the 97 commodities. There are a few negative entries because gross capital formation is calculated as the sum of gross fixed capital formation and changes in stocks. This problem occurs for processed vegetable and animal oil and fat, processed and preserved fruits and vegetables, processed coffee, processed tea, ceramics and by-products, products of leather tanneries and other physical goods.

Cell (2,8) "Commodities-ROW": Exports

Detailed Vietnam trade statistics for 1999 were available by commodity, but not by trading partner. Given our intention that the SAM be a database for supporting trade policy analysis, we felt the latter detail was essential. An internationally maintained database, COMTRADE, keeps country-by-country merchandise trade data, with very detailed product categories and complete detail on originating county for imports as well as destination of exports.

Unfortunately, Vietnam does not report to COMTRADE at the present time, so it was necessary to sample Vietnamese trade flows by indirect means. This meant sampling all reporting countries (over 90% of global trade) for their exports to and imports from Vietnam. Since moreover, reporting for 1999 is still incomplete, we sampled COMTRADE in this manner for the four year period 1996-1999 to better estimate the desired trade flows.

[17] See e.g. Stone (1981) and Bacharach (1970) for discussion of proportional RAS balancing techniques.

Practically speaking, we obtained import and export flows, to and from Vietnam, for 94 partner countries and over 9,000 merchandise customs lines, annual for each year 1996-1999. The first step was to aggregate the customs lines to our own 97 sectors (only 68 of which are commodities). We then estimated each 1999 trade flow as a weighted average

$$T_{ik} = w_s s_{ik} + w_t t_{ik}(99)$$

where $t_{ik}(99)$ denotes imports or exports of commodity j with trading partner k and

$$s_{ik} = \text{trend}_{99}[t_{ik}(96), t_{ik}(97), t_{ik}(98)]$$

represents a one period extrapolation of observations from 1996-1998. The weights are given by

$$w_s = s_{jk}/(s_{jk}+t_{jk}(99))$$

and

$$w_t = t_{jk}(99)/(s_{jk}+t_{jk}(99))$$

This was a very data intensive process, but we believe it represents the best available means of overcoming under-reporting bias.

In addition, it was necessary to estimate service trade (not reported in COMTRADE). This was done by using 1996 service export and import shares from the I/O table and apportioning the same share of total 1999 (MacroSAM) exports and imports to services as was observed in 1996. Finally, the detailed trade matrices were balanced proportionately to be consistent with the 1999 export and import aggregates in the MacroSAM.

Cell (3,1) "Factors-Activities": Value added

When disaggregating the value added cell, an important step is the apportionment of value added across the 97 activities (along the row). Data for 1999 exist on value added by 20 sectors (GSO, 2001, pp. 90-94), a higher level of aggregation than the 1996 I/O classification of 97 activities (GSO, 1999). The 1999 sector information was therefore disaggregated from 20 down to 97 activities relying on 1996 value added shares (of the respective sub-sector totals).

The next step in the disaggregation was to split total factor payments into total payments to labour and total payments to capital (along the column). No official information is available on value added attributable to Vietnamese land. Returns to labour and capital include wages, salaries and other income, and gross profits, respectively, plus taxes levied on the factors. Assuming that all factor taxes are paid by capital, total returns to labour are equivalent to cell (4,3) in the MacroSAM

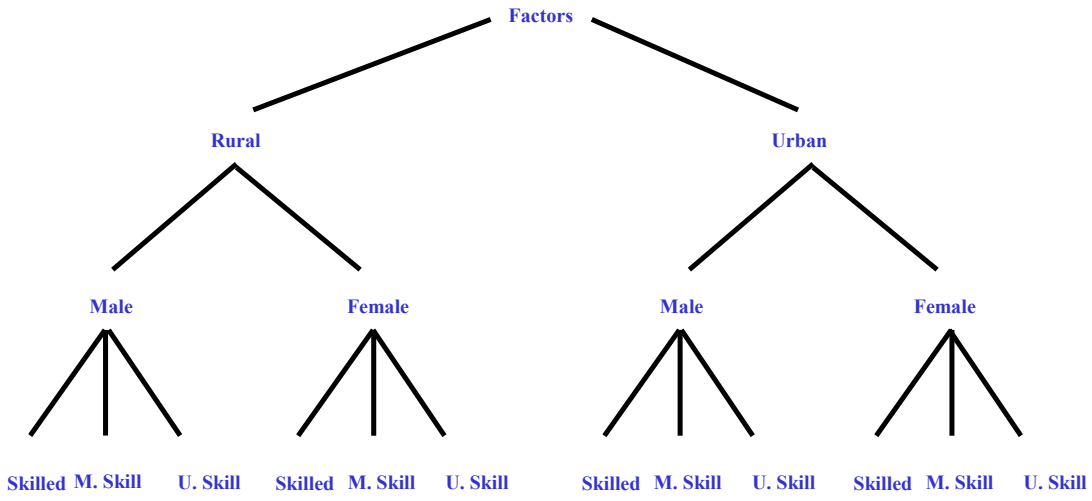
discussed further below. Total returns to capital are equivalent to cell (5,3) in the MacroSAM plus the factor taxes in cell (6,3).

Based on the above, row and columns control totals are now available for a 2x97 labour-capital/activity factor payments (or value added) matrix. In order to obtain the individual entries through a proportional RAS procedure, and initial set of the 2x97 entries is required. They are available for 1996 in the I/O table (GSO, 1999), after a minor correction. Data for 1996 include wage compensation, production taxes and capital payments. After sharing out production taxes on labour and capital according to sector value added shares, the desired initial values for the RAS are obtained. The RAS procedure provides an adjusted 2x97 dimension vector that respects control totals for 1999.

If further disaggregation were not desired, this would complete the disaggregation of cell (3,1). However, further disaggregation of labour was pursued to allow more detailed economic analysis. Labour was therefore disaggregated into 12 categories using the following criteria: rural-urban, gender (male-female), and three skill levels (unskilled, medium skilled and highly skilled). This results in the following types of labour, also illustrated in Figure 4.2:

(i) LRMU: Rural Male Unskilled
(ii) LRMM: Rural Male Medium-skilled
(iii) LRMH: Rural Male Highly-skilled
(iv) LUMU: Urban Male Unskilled
(v) LUMM: Urban Male Medium-skilled
(vi) LUMH: Urban Male Highly-skilled
(vii) LRFU: Rural Female Unskilled
(viii) LRFM: Rural Female Medium-skilled
(ix) LRFH: Rural Female Highly-skilled
(x) LUFU: Urban Female Unskilled
(xi) LUFM: Urban Female Medium-skilled
(xii) LUFH: Urban Female Highly-skilled

Figure 4.2: Illustration of the Factor Disaggregation



Recall that a 1x97 1999 vector of returns to labour is available from above. This has to be turned into a 12x97 vector. The steps involved are described below. They involve in particular (i) the estimation of wage differentials,[18] (ii) estimates of the share of workers in each category of labour, and (iii) estimation of how a particular factor is allocated across activities.

Using VLSS (GSO (2000), p.188-189), it is estimated that male workers get approximately 21% higher wages than female workers. Highly skilled get approximately 53% and 104% higher wages/compensation than medium skilled and unskilled respectively. Medium skilled get 33% higher wages/compensation than unskilled workers. The differential between unskilled workers and other categories should not be based on the VLSS information on wage earners only. This would miss all those who are self-employed. A rough estimate using other VLSS information is that 70% of the total labour force can be characterised as self-employed. Assuming that they are mainly in agriculture and are unskilled, an estimate of the weighted average of returns to different kinds of unskilled labour can be derived based on compensation of employees and earnings for self-employed (GSO, 2000, p. 188-89 and p. 400).

The gender disaggregation used in the SAM is in accordance with information from VLSS, i.e. 48.43% male and 51.57% female, and the rural-urban allocation is 77.57% rural and 22.43% urban (GSO, 2000, p. 23). Moreover, the VLSS can be used

to give an estimate of the share of total population in each of the labour categories adding up to 100%. This is done by combining demography and education data from the VLSS (GSO, 2000, p. 23 and p. 29).

In order to obtain the estimate used for splitting total labour into the different categories, three additional steps were involved. First, relying on VLSS information on the educational background of both rural and urban people, it can be calculated how rural and urban people are distributed among the three educational categories as shares of total population. Using the shares of female and male of total population and multiplying with the educational shares just obtained, an estimate of the allocation of labour appears. However, this allocation does not take account of the educational level by gender. Therefore, using information on educational background by gender, it is calculated how male and female people are distributed among the three educational categories. Using the shares of urban-rural people of total population and multiplying with the educational shares by gender another allocation of labour across the 12 different categories is obtained. The two allocations are averaged to obtain the estimate used in what follows as to how labour is allocated among the twelve categories.

Bales (2000, Annex 3, p. 43) documents the gender distribution and the rural/urban distribution of labour by 14 different industries of main employment. A concordance can be established between the 14 sector industry classification and the 97 sector I/O classification,[19] making it possible to link data on the allocation of the population among labour categories and across the 97 activities. This is done by taking the shares of labour in the different activities, multiplying with the distribution of labour by education. Subsequently, this information is used to multiply with the gender and education wage premia, adjusting sub-totals proportionately so they add up to 100%. The last step is to multiply the coefficients just obtained with value added for each of the 97 activities, providing the required 12x97 matrix of how much is paid to each kind of labour by each activity.

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[18] While some nominal wages are available they are, strictly speaking, not required as information on total returns to labour by activity can be combined with labour shares by labour category and the wage differentials to get the desired returns to labour by category and activity.

[19] The conversion is done as follows: Agriculture = I/O classification 1 - 12, Mining = I/O classification 13 - 17, Foodstuffs and tobacco = I/O classification 18 - 30, Other light industry = 31 - 49 + 59 - 60 + 67 -71, Electronics = I/O classification 50 - 58, Textiles and garments = I/O classification 61 - 66, Utilities = I/O classification 72 -76, Construction = I/O classification 77, Sales = I/O classification 78 - 79, Hotel = I/O classification 80, Transport = I/O classification 81 - 86, Other = I/O classification 87 - 90, Government and social services = I/O classification 91 - 95, Personal services = I/O classification 96 - 97.

Cell (4,3) "Households-Factors": Wages, salaries and other benefits

As described with reference to cell (2,4), estimates are available for total income from ownership of labour for the five different household types. They therefore provide a 5x1 set of row control totals for entries in cell (4,3). Moreover, control totals for the 1x12 set of column totals were derived under cell (3,1). A RAS procedure can therefore be applied provided an initial set of values for the 5x12 set of entries in cell (4,3) is available. Little information is available on payments from individual factors to individual households, but based on an estimate in accordance with qualitative assessments, the proportional RAS procedure was applied to ensure that original column and row totals are consistent with individual entries.

Cell (4,5) "Households-Enterprises": Distributed profits and social security

In order to allocate total profits among the five households, it is assumed that distributed profits and social security from enterprises to households are proportional to income from labour. This reflects an assumption that profits and social security do not alter the underlying relative distribution of income. Thus, higher (urban) labour-income households are allocated substantialy more of total distributed profits and social security than lower (rural) labour-income households.

In sum, total distributed profits and social security by household type is calculated by multiplying labour income shares (described above) with the MacroSAM total. This gives a 5x1 set of sub-totals. The split across the three enterprises was carried out iteratively, based on qualitative assessments, ensuring that the disaggregated SAM is consistent.

Cell (4,6) "Households-State": Social security

Social security payments from the state recurrent budget to the five households are assumed to be proportional to income from labour. Total social security by household type can therefore be calculated by multiplying labour income shares with the MacroSAM total in cell (4,6).

Cell (4,8) "Households-ROW": Net foreign transfers to households

In Vietnam, many urban and some rural household are significant beneficiaries of remittance income from relatives living abroad. A substantial component of these flows is undocumented, so we have imputed values for these remittances based on

estimated total income and net capital inflows (cell (7,8)) that establish balance in the 94 trading partner accounts.

Cell (5,3) "Enterprises-Factors": Gross profits

Gross profits are paid from capital to enterprises. Disaggregated data about this cell are documented by GSO (2001, p.121). Consumption of fixed capital and operating surplus for the different kinds of enterprises can simply be added.

Cell (5,8) "Enterprises-ROW": Net foreign transfers to enterprises

The macro entry here is the private sector component of net foreign investment inflows form the MacroSAM, which we assume is available only to foreign invested enterprises.

Cell (6,1) "State-Activities": Indirect taxes

Indirect taxes include license taxes, VAT, agricultural taxes and other taxes as described in the MacroSAM. When disaggregating indirect taxes across the 97 activities, information from GSO (1999) about the production tax shares for each activity are used to share out total indirect taxes available from the MacroSAM. A minor adjustment is made a priori to ensure that only agricultural sectors pay agricultural taxes.

Cell (6,2) "State-Commodities": Consumption taxes and import tariffs

As for cell (6,1) consumption taxes and import taxes are shared across the 97 commodities according to the 1996 production tax shares provided in GSO (1999).

Cell (6,3) "State-Factors": Factor taxes

All factor taxes are assumed to be paid by the capital factor.

Cell (6,4) "State-Households": Income taxes

Income taxes paid by households to the state are assumed to be proportional to labour income. Thus, the labour income shares described above multiplied by total income tax from the MacroSAM give income taxes paid by households.

Cell (6,5) "State-Enterprises": Enterprise income taxes

GSO (2001, p.121) documents total production tax by ownership. Using shares of production tax by ownership multiplied with the total enterprise tax figure from the MacroSAM provide the necessary disaggregated information.

Cell (6,8) "State-ROW": Net foreign transfers to state

This entry reflects net public foreign borrowing, including development assistance.

Cell (7,4) "Investment/Savings-Households": Household savings

The disaggregation of savings by households is obtained by using information from VLSS about savings per household in rural and urban households (GSO, 2000, p. 324). Multiplying with respectively the number of rural and urban households should correspond to total household savings for respectively rural and urban families. However, since total household VLSS and GSO savings do not match, the two VLSS total savings figures (rural and urban) are adjusted downwards proportionately to become equal to the overall total in the MacroSAM.

Savings for rural farmers are subsequently estimated by multiplying total rural savings by the rural share of total savings. Total savings for rural self-employed (non-farm) and rural wage earners are estimated by multiplying total rural savings by the urban share of total savings. This implies that their savings behaviour is assumed to be similar to that of urban households (remembering that their savings come out of the rural total). Subsequently this total is allocated among the two households according to labour income shares. Similarly, urban savings are divided among the two urban households according to labour income shares.

Cell (7,5) "Investment/Savings-Enterprises": Retained earnings

Retained earnings for individual enterprise types are assumed to be proportional to gross output (GSO, 2001, p. 90). Using the share of each enterprise of gross output multiplied by total retained earnings in the MacroSAM provides the required disaggregated data for cell (7,5).

Cell (7,6) "Investment/Savings-State": State savings

This cell is not disaggregated and is therefore equal to the MacroSAM entry.

Cell (7,8) "Investment/Savings-ROW": Net capital inflows

This figure consists of net private foreign capital inflows, excluding foreign direct investment to foreign owned enterprises.

Cell (8,2) "ROW-Commodities": Imports

See the discussion of cell (2,8) above. In addition to CIF imports, tariff revenue was disaggregated according to published tariff rates for Vietnam in 1999.

In sum, the disaggregation above results in a 312x312 matrix (97 activities, 97 commodities, 13 factors, five households, three enterprises, one state, one investment/savings, 94 trade balances by trading partner, and a foreign transfer account).

To complete the SAM estimation procedure, it was necessary to reconcile the many data sources mentioned above into one consistent economywide set of tabular accounts. This was done using a sophisticated matrix balancing algorithm developed by Sherman Robinson and a variety of collaborators (see e.g., Robinson et al., 1998 and Robinson and El-Said (2000)). This technique, referred to as Cross Entropy Estimation, permits the estimation of detailed accounts that are consistent with exogenously specified accounting constraints.

At a minimum, it is necessary to constrain row and column sums of the SAM to be equal for each account, yielding 312 constraints in the present case. This was the standard for previous Vietnam SAMs, but unfortunately those tables were not also restricted to be consistent with their own MacroSAMs. In estimating the 1999 Vietnam MicroSAM, we added constraints representing all the entries of the 1999 MacroSAM and the corresponding sub-matrices of the 1999 MicroSAM. This is the

only way to ensure that a MicroSAM is based on the same macroeconomic structure represented by its own MacroSAM.

5. Extensions

The insights offered above illustrate the immediate relevance of the SAM for economic policy analysis. Looking ahead, it should be reiterated that, in preparing the 1999 SAM, a number of assumptions were made to compensate for data limitations. They are in particular related to the factor-household economic linkages as described in detail in the relevant sections of this study.

In forthcoming SAM work, attention will be paid to the following issues:[20]

(i) The shares of value added across each sector (i.e. each productive activity) for each factor type, reflecting relative labour intensities, appear in the 1999 SAM more uniform than one would expect for a country with the characteristics of Vietnam. It seems, in particular, that further analysis is needed of the shares of urban workers in various employment categories, and the same observation applies to the gender disaggregation. At the moment urban workers appear over-represented in primary employment (and under-represented elsewhere), and female workers seem under-represented in primary employment (and over-represented elsewhere).

(ii) Household incomes from factors appear to be too uniform. Household income is imputed directly from activities in the 1999 SAM using a reduced form technique. This contributes to the apparent uniformity of value added across each sector for each factor type.

(iii) The composition of final household demand among household types is relatively stylised and probably does not adequately capture existing consumption diversity.

Finally, it would be desirable to include the category land among the factors, provided reliable Vietnamese data can be obtained. Other potential refinements would be to improve on the way in which trade and tax policies affect individual sectors, as well as more explicit treatment of marketing margins and the household consumption of own production (on farm). However, for this to be possible, further data are indispensable.

[20] It is recognised that the existing information at the household level in the VLSS (GSO, 2000) can be used more intensively than in the present 1999 SAM. This will be done in future work.

6. Conclusions

Traditional physical input-output (I/O) tables were at the core of central planning in the past. In modern economy-wide studies, Social Accounting Matrices (SAMs) and Computable General Equilibrium Models (CGEs) that take account of supply and demand behaviour and the mediating role of market institutions have become important analytical tools. In this volume, we have therefore presented and documented an up-to-date 1999 Social Accounting Matrix (SAM) for Vietnam, including both a MacroSAM and a disaggregated MicroSAM.

This is the first concrete output of the CIEM-NIAS capacity building and collaborative research programme. The overall objective of this effort is to help develop an appropriate analytical framework to underpin the formulation of timely, economy-wide policy advice on the many intricate challenges facing Vietnamese policymakers in an era of globalisation. The SAM provides closed form accounting of economic linkages, and as such is ideally suited to support the kind of economic analysis needed in Vietnam to help promote economic transformation and development.

In preparing the new 1999 Vietnam SAMs, particular attention was paid to the need for consistency between the MacroSAM and the MicroSAM. Accordingly, the MicroSAM is based on the same economic structure that appears in aggregated form in the MacroSAM. Moreover, the SAMs reflect, as closely as possible, the economic structure of Vietnam in the aftermath of the Asian financial crisis, taking into account the substantial changes in trade and other economic indicators over the past few years. Domestic data sources relied on include information from the General Statistical Office (GSO), in particular a 97-sector input-output table, a nationally representative household survey, and a document summarising official 1999 data in accordance with UN SNA standards. Data on international trade, disaggregated by 94 trading partners, were obtained directly from UN sources.

The level of disaggregation in the MicroSAM (a matrix with dimensions 312x312) reflects the sectoral classification in the 97-sector I/O table and the 94 trading partners. Moreover, 13 factors of production, five household types, and three kinds of enterprises were included in addition to accounts for the recurrent state budget, the savings-investment balance, and net foreign transfers from the rest of the world. The data available were combined with modern balancing techniques and careful attention to sound judgement and the requirement that the SAMs should reflect as closely as possible the actual economic structure of Vietnam at the turn of the century.

SAMs are most intensively used in more complex multiplier and policy simulation models. However, as demonstrated in this volume, a lot can be learned

from direct inspection of the SAM. The overview of a 30-sector aggregation of the 1999 SAM demonstrated a number of key characteristics of the Vietnamese economy and the development challenges faced by policymakers, illustrating the strength of the SAM as an analytical tool. Among the various observations noted in using the SAM for policy purposes in this volume, we would like to draw attention to the following points:

(i) The economy of Vietnam relies heavily on primary sector activities. However, there are many indications that suggest that Vietnam's agricultural potential could be expanded significantly. Ideally, this should be done in ways that achieve greater value-added capture, shifting the composition of crops toward higher value varieties in accordance with existing policy guidelines.

(ii) Vietnamese exports are concentrated in sectors classified as industrial, with particular reliance on textiles and apparel, while several agricultural sectors, such as rice and fishery, are still directing the vast majority of their output to the domestic market. It would appear that the export potential of the latter is only beginning to be realised, and this is also seems to be so for food processing (excepting coffee and rubber) and the oil and gas sector. The export potential of rice appears most promising, especially if quality improves, while fishery supply could continue to be diverted towards the domestic market as demand increases with rising incomes. When it comes to trading partners, more than two thirds of the Vietnamese rice exports are directed to ASEAN members, revealing the still rather limited scope of Vietnam's global market penetration, and a similar observation applies to coffee.

(iii) In manufacturing, Vietnam is still to realize fully the potential of dynamic growth sectors such as technology and consumer durables. For this to happen, the importance of foreign capital and sustained commitments to human capital development via education and labour market reform seem critical. Increasing access to a more diversified set of foreign export markets also appears to be of fundamental importance.

(iv) Average incomes remain low in Vietnam. The capacity of internal market demand to generate adequate and sustained savings for investment in growth oriented sectors such as consumer durables and technology is therefore likely to remain limited for quite some time. Particular attention should therefore be paid to ensuring international

competitiveness and promoting external partnership for these sectors in as stated in a variety of government policy guidelines.

(v) At present, investment is heavily concentrated in construction. In a medium-term growth scenario, one would expect to see investment demand increase more rapidly in sectors that are technology and infrastructure related. This highlights once more the importance of both financial and human capital, which in turn are likely to have implications for external financial policy and domestic policy towards education and labour markets.

(vi) Vietnam is an agrarian economy in a process of transformation. As such, it is heavily reliant on imported technology and vulnerable to adverse changes in the international terms of trade. The issue of how to invest for production that meets both domestic and external demand seems important, highlighting the need to build efficient domestic capacity without compromising the ability to compete in international markets.

(vii) Differences exist in the labour to capital value added across sectors. This implies that the employment and distributional implications of development policy deserve careful consideration. Sectors targeted for expansion can have different effects on domestic factor use and relative factor incomes. Considering the important role of agriculture already alluded to, small holder promotion would appear to be an essential element of sustainable and equitable rural development.

(viii) To realise its economic potential, it also appears that Vietnam would benefit from reinforcing the dedication to realizing the enormous human potential of a relatively young and healthy population. For a country such as Vietnam with limited means of financing universal higher education, it would be benificial to identify more diverse approaches to the promotion and improvement of skills. For example, more extensive reforms of product, financial, and labour markets are likely to be able to make significant contributions here, facilitating the confluence of labour and technology in ways that might accelerate productivity growth and, ultimately, real wages and living standards. The international donor community can also help through concerted training and capacity building initiatives that have proven successful elsewhere in the region.

With the potential improvements of the previous section in mind, we believe the 1999 Vietnam SAM presented in this volume sets new standards for timeliness, empirical quality, and international collaboration. The detailed and consistent economic information set it provides can support improved Vietnamese policy analysis, relying on the most up-to-date and modern analytical techniques available.

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8. Appendices

Annex 1: Complete list of sectors in the 1999 SAM

01PADDY	Paddy
02RAWRUB	Raw rubber
03COFFBN	Coffee beans
04SUGCANE	Sugarcane
05OTHCROP	Other crops
06PIG	Pig
07POULTRY	Poultry
08OTLVSTK	Other livestock and poultry
09IRRISRV	Irrigation service
10OTAGSRV	Other agricultural services
11FOREST	Forestry
12FISH	Fishery
13COAL	Coal
14URAN	Uranium and thorium
15METAL	Metallic ore
16STONE	Stone and other non-metallic minerals
17OILGAS	Crude oil, natural gas
18MEAT	Processed, preserved meat and by-products
19COOKOIL	Processed vegetable and animal oils and fat
20DAIRY	Milk, butter and other dairy products
21BAKCONF	Cakes, jams, candy, coca, chocolate products
22FRTVEG	Processed and preserved fruits and vegetables
23ALCBEV	Alcohol, beer and liquors
24NALCBEV	Non-alcoholic water and soft drinks
25SUGAR	Sugar, refined
26COFFEE	Coffee, processed
27TEA	Tea, processed
28TOBACPD	Cigarettes and other tobacco products
29SEAFOOD	Processed seafood and by-products
30OTFOOD	Other food manufactures
31GLASS	Glass and glass products
32CERAMIC	Ceramics and by-products
33PAPER	Paper pulp and paper products and by-products
34WOOD	Processed wood and wood products
35CEMENT	Cement
36BRICKS	Bricks, tiles
37CONCRETE	Concrete, mortar and other cement products
38OBLDMAT	Other building materials
39ORGCHEM	Basic organic chemicals
40NORCHEM	Basic inorganic chemicals
41FERTIL	Fertilizer
42PESTICID	Pesticides and veterinary medicine
43HLTHMED	Health medicine
44PRCRUB	Processed rubber and by-products
45SOAP	Soap, detergents, perfumes and other toilet preparations
46PLASTIC	Plastics
47OTHPLAS	Other plastic products
48PAINT	Paint, ink, varnish and other painting materials
49OTHCHEM	Other chemical products
50HLTINST	Health instrument and apparatus
51OPTPREQ	Precise and optics equipment, meter
52HOMEAPPL	Home appliances and its spare parts
53MOTVEH	Motor vehicles, motor bikes, bicycles and spare parts
54GENMACH	General - purpose machinery

55SPCMACH	Special - purpose machinery
56OTTRANS	Other transport means
57ELECMAC	Electrical machinery
58INFOMAC	Machinery and equipment used for broadcasting, television and information activities
59NFERMET	Non-ferrous metals and products
60FERMET	Ferrous metals and products, except machinery and equipment
61FIBER	Fibers, thread and weaving of cloths
62CLOTHES	Ready - made clothes, sheets
63CARPETS	Carpets
64WEAVING	Weaving and embroidery of textile - based goods
65LEATHER	Products of leather tanneries
66LTHPRD	Leather goods
67ANIMLFD	Animal feeds
68PRINT	Products of printing activities except products of publishing
69OTINDPD	Products of other industrial activities
70PUBLISH	Products of publishing house
71OTHGDS	Other physical goods
72GASOLIN	Gasoline
73LUBRIC	Lubricants
74ELECTR	Electricity
75GAS	Gas
76WATER	Water
77CONSTRCT	Construction
78TRADE	Trade
79REPAIR	Repair of small transport means, motorbikes and personal household appliances
80HOTREST	Hotels and restaurants
81LNDTRN	Land transportation services
82RAILTRN	Railway transport services
83WATTRN	Water transport services
84AIRTRN	Air transport services
85COMSRV	Communication services
86TOURISM	Tourism
87FINSERV	Banking, credit, treasury, lotto
88INSSERV	Insurance and retirement subsidy
89SCITECH	Science and technology
90REALEST	Real estate, business and consultancy services
91STATESV	State management, defense and compulsory social security
92EDUC	Education and training
93HLTHCAR	Health care, social relief
94CULSPRT	Culture and sport
95ASSOC	Association
96PERSERV	Personal and Community services
97HHSERV	Household services

Annex 2: Aggregated Vietnam SAM, 1999, 30 Sectors

(Billions of Current Dong)

		1	2	3	4	5	6	7	8	9	10
		A01Rice	A02Rubber	A03Coffee	A04OthCrp	A05LivStk	A06OthAg	A07Forest	A08Fishry	A09Coal	A10OilGas
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	14379	0	0	0	3225	0	0	0	0	0
32	C02Rubber	0	214	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	28	0	0	0	0	0	0	0
34	C04OthCrp	43	7	2	7191	2410	8	3	6	0	0
35	C05LivStk	63	0	0	0	61	25	0	5	0	0
36	C06OthAg	2918	2	77	341	64	4	0	0	0	0
37	C07Forest	72	0	3	23	623	0	0	76	54	0
38	C08Fishry	0	0	0	0	264	0	0	2746	0	0
39	C09Coal	88	0	1	17	108	0	0	11	500	0
40	C10OilGas	0	0	0	0	0	0	0	0	0	0
41	C11OthMin	123	0	1	23	23	12	3	19	6	0
42	C12MtDary	30	0	0	0	0	0	0	4	0	0
43	C13BevTob	175	0	2	23	8	14	4	57	2	0
44	C14Seafood	184	0	0	0	17	20	0	25	0	0
45	C15OtPrFd	118	0	0	4	8	65	0	34	0	0
46	C16MatMfg	353	3	11	80	218	196	87	228	86	0
47	C17Chemcl	8181	211	1557	525	372	31	70	330	516	92
48	C18TechMfg	132	7	1	25	0	55	1	18	154	5
49	C19Vehicle	24	27	1	0	0	1152	1	0	46	0
50	C20OthMach	541	6	37	240	96	243	9	178	111	0
51	C21TxtAprl	461	2	9	51	17	3	6	102	36	0

		1	2	3	4	5	6	7	8	9	10
		A01Rice	A02Rubber	A03Coffee	A04OthCrp	A05LivStk	A06OthAg	A07Forest	A08Fishry	A09Coal	A10OilGas
52	C22OthInd	8	6	49	1437	2883	110	2815	1806	66	0
53	C23ElGsWat	99	26	9	47	65	264	10	77	115	0
54	C24Cnstrct	176	10	3	37	12	138	7	23	2	121
55	C25Trade	1354	22	66	314	911	75	67	527	263	32
56	C26Transp	534	8	34	66	55	73	66	97	258	46
57	C27HotRest	42	3	8	7	2	28	15	8	8	0
58	C28PerServ	10	0	0	0	0	2	1	0	2	0
59	C29ComServ	232	10	24	50	37	40	41	932	197	880
60	C30PubServ	163	3	8	27	10	19	9	21	10	0
61	L01UMU	501	215	1016	8401	4811	171	1856	1663	1282	611
62	L02UMM	5183	53	229	73	1269	109	25	991	377	535
63	L03UMH	696	11	46	660	233	22	7	194	103	102
64	L04UFU	12350	206	893	8047	4618	164	1778	7844	383	557
65	L05UFM	5170	45	194	0	1000	93	13	824	96	89
66	L06UFH	628	10	41	469	209	20	6	174	28	17
67	Capital	1070	392	544	743	693	105	0	1073	1347	20285
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	2527	65	222	1666	994	110	247	544	158	1181
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	811	21	71	535	319	35	123	272	79	591
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	59441	1586	5188	31121	25634	3405	7271	20913	6284	25143

Annex 2:

		11	12	13	14	15	16	17	18	19	20
		A11OthMin	A12MtDary	A13BevTob	A14Seafood	A15OtPrFd	A16MatMfg	A17Chemcl	A18TechMf	A19Vehicle	A20OthMac
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	0	19	0	35583	0	0	0	0	0
32	C02Rubber	0	0	0	0	0	0	94	0	0	0
33	C03Coffee	0	0	252	0	0	0	0	0	0	0
34	C04OthCrp	0	4	2147	2	3767	19	169	1	1	1
35	C05LivStk	0	1465	0	0	3	1	1	0	0	0
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	41	0	1	0	1	4397	49	0	9	1
38	C08Fishry	0	0	33	4593	16	0	275	0	0	0
39	C09Coal	36	2	30	0	11	702	239	20	8	20
40	C10OilGas	0	0	0	0	0	17	1	0	1	0
41	C11OthMin	129	0	1	3	14	2267	375	0	3	293
42	C12MtDary	0	692	48	6	63	2	0	0	1	0
43	C13BevTob	12	4	196	0	20	22	12	0	7	1
44	C14Seafood	4	0	1	614	141	10	0	0	1	0
45	C15OtPrFd	308	235	448	28	3069	34	33	0	3	1
46	C16MatMfg	204	46	463	71	233	8948	450	135	104	128
47	C17Chemcl	1287	62	491	88	653	1788	6859	1630	130	54
48	C18TechMfg	60	2	3	0	26	159	30	2085	89	58
49	C19Vehicle	6	0	27	0	0	198	8	2	2561	77
50	C20OthMach	3883	71	421	34	424	907	413	452	1451	3167
51	C21TxtAprl	31	1	26	7	182	274	58	5	17	23

		11	12	13	14	15	16	17	18	19	20
		A11OthMin	A12MtDary	A13BevTob	A14Seafood	A15OtPrFd	A16MatMfg	A17Chemcl	A18TechMf	A19Vehicle	A20OthMac
52	C22OthInd	542	8	282	6	75	567	138	129	96	47
53	C23ElGsWat	463	42	192	133	425	1632	502	66	92	366
54	C24Cnstrct	72	5	18	2	76	114	23	5	28	4
55	C25Trade	480	159	326	435	11787	1856	856	269	236	223
56	C26Transp	1148	45	171	83	206	1229	220	34	111	68
57	C27HotRest	95	4	25	12	15	103	31	9	17	7
58	C28PerServ	14	0	1	0	2	18	14	1	33	1
59	C29ComServ	1074	43	409	69	137	673	349	203	127	101
60	C30PubServ	27	41	52	0	39	79	34	16	34	11
61	L01UMU	1145	295	1210	947	1948	2634	1349	577	997	949
62	L02UMM	324	91	433	283	445	792	410	491	184	301
63	L03UMH	79	27	115	71	45	214	118	95	66	90
64	L04UFU	331	295	1436	948	1949	1273	654	254	217	451
65	L05UFM	59	82	383	240	340	293	177	105	72	126
66	L06UFH	12	25	109	67	42	87	54	39	28	39
67	Capital	901	364	4904	671	1161	6263	1578	557	235	1330
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	110	58	464	194	437	553	210	114	57	141
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	55	29	232	97	218	276	105	57	29	71
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	12933	4200	15371	9706	63553	38403	15887	7351	7045	8150

Annex 2:

		21	22	23	24	25	26	27	28	29	30
		A21TxtAprl	A22OthInd	A23ElGsW	A24Cnstrct	A25Trade	A26Transp	A27HotRest	A28PerServ	A29ComSe	A30PubServ
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	1	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	87	0	0	0	0	0	0	0	0
32	C02Rubber	0	8	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	943	1120	0	43	90	10	48	443	458	14
35	C05LivStk	22	2	0	92	596	0	396	0	0	45
36	C06OthAg	0	0	8	0	0	0	0	0	0	0
37	C07Forest	9	1	0	137	4	0	3	0	0	6
38	C08Fishry	0	0	0	0	0	0	191	0	0	0
39	C09Coal	18	8	82	168	136	5	63	6	2	31
40	C10OilGas	6	0	105	0	0	0	10	0	0	0
41	C11OthMin	14	119	12	6960	211	9	21	19	200	101
42	C12MtDary	2	88	0	55	67	1	869	16	2	60
43	C13BevTob	29	6	16	351	349	17	621	29	85	318
44	C14Seafood	15	167	0	334	952	8	261	1	0	30
45	C15OtPrFd	8	304	4	178	463	1	618	5	8	133
46	C16MatMfg	587	409	40	18481	871	327	423	244	595	3444
47	C17Chemcl	2066	5111	174	2142	745	644	215	445	1486	1270
48	C18TechMfg	59	153	1912	1859	245	81	321	99	808	380
49	C19Vehicle	7	51	3	49	49	3103	0	45	7	103
50	C20OthMach	483	1233	671	2644	902	824	208	106	4746	338
51	C21TxtAprl	10555	391	177	1142	1029	53	253	30	171	303

		21	22	23	24	25	26	27	28	29	30
		A21TxtAprl	A22OthInd	A23ElGsW	A24Cnstrct	A25Trade	A26Transp	A27HotRest	A28PerServ	A29ComSe	A30PubServ
52	C22OthInd	783	970	237	414	191	467	106	368	518	3649
53	C23ElGsWat	1304	245	1629	141	126	172	84	345	4650	853
54	C24Cnstrct	94	32	160	966	458	190	200	17	71	1113
55	C25Trade	1064	417	179	0	1032	347	508	184	285	749
56	C26Transp	590	291	80	3136	5564	1074	205	90	785	682
57	C27HotRest	74	24	13	361	580	94	513	48	209	268
58	C28PerServ	27	5	1	171	88	6	58	22	133	315
59	C29ComServ	790	295	75	1946	3486	2698	2730	387	4077	2918
60	C30PubServ	91	28	46	434	470	125	273	20	348	2684
61	L01UMU	1314	1740	6275	27757	4532	5223	1183	4971	4155	14986
62	L02UMM	435	677	651	2450	2873	1354	403	511	1693	3898
63	L03UMH	128	192	140	526	764	442	113	227	633	963
64	L04UFU	2951	1080	571	728	16517	507	5005	2121	1842	6598
65	L05UFM	805	285	130	285	3673	133	689	1304	571	2345
66	L06UFH	258	87	47	196	1236	48	250	60	217	729
67	Capital	5620	1736	2499	2893	17637	5062	6550	993	16828	2132
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	505	323	492	936	2450	570	577	455	1377	1464
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	252	162	246	468	1225	285	288	227	689	732
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	31910	17847	16674	78444	69607	23881	24257	13838	47650	53657

Annex 2:

		31	32	33	34	35	36	37	38	39	40
		C01Rice	C02Rubber	C03Coffee	C04OthCrp	C05LivStk	C06OthAg	C07Forest	C08Fishry	C09Coal	C10OilGas
1	A01Rice	59441	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	1586	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	5188	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	31121	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	25634	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	3405	0	0	0	0
7	A07Forest	0	0	0	0	0	0	7271	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	20913	0	0
9	A09Coal	0	0	0	0	0	0	0	0	6284	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	25143
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	0	0	0	0	0	0	0	0	0
32	C02Rubber	0	0	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	0	0	0	0	0	0	0	0	0	0
35	C05LivStk	0	0	0	0	0	0	0	0	0	0
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	0	0	0	0	0	0	0	0	0	0
38	C08Fishry	0	0	0	0	0	0	0	0	0	0
39	C09Coal	0	0	0	0	0	0	0	0	0	0
40	C10OilGas	0	0	0	0	0	0	0	0	0	0
41	C11OthMin	0	0	0	0	0	0	0	0	0	0
42	C12MtDary	0	0	0	0	0	0	0	0	0	0
43	C13BevTob	0	0	0	0	0	0	0	0	0	0
44	C14Seafood	0	0	0	0	0	0	0	0	0	0
45	C15OtPrFd	0	0	0	0	0	0	0	0	0	0
46	C16MatMfg	0	0	0	0	0	0	0	0	0	0
47	C17Chemcl	0	0	0	0	0	0	0	0	0	0
48	C18TechMfg	0	0	0	0	0	0	0	0	0	0
49	C19Vehicle	0	0	0	0	0	0	0	0	0	0
50	C20OthMach	0	0	0	0	0	0	0	0	0	0
51	C21TxtAprl	0	0	0	0	0	0	0	0	0	0

		31	32	33	34	35	36	37	38	39	40
		C01Rice	C02Rubber	C03Coffee	C04OthCrp	C05LivStk	C06OthAg	C07Forest	C08Fishry	C09Coal	C10OilGas
52	C22OthInd	0	0	0	0	0	0	0	0	0	0
53	C23ElGsWat	0	0	0	0	0	0	0	0	0	0
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	0
55	C25Trade	0	0	0	0	0	0	0	0	0	0
56	C26Transp	0	0	0	0	0	0	0	0	0	0
57	C27HotRest	0	0	0	0	0	0	0	0	0	0
58	C28PerServ	0	0	0	0	0	0	0	0	0	0
59	C29ComServ	0	0	0	0	0	0	0	0	0	0
60	C30PubServ	0	0	0	0	0	0	0	0	0	0
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	133	12	24	61	4	9	111	95	24	534
77	Mduty	5	4	1	154	4	0	2	11	0	111
78	Xduty	94	32	109	52	0	0	0	98	17	240
79	State	0	0	0	0	0	0	0	0	0	1000
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	0	70	332	575	0	0	157	0	0	0
82	Japan	0	0	0	305	0	0	2	0	0	0
83	Taiwan	0	0	0	52	0	0	13	0	0	0
84	China	0	5	2208	1152	0	0	3	0	0	0
85	HongKong	0	0	0	1	0	0	0	0	0	0
86	Korea	0	1	0	65	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	63	748	0	0	30	0	0	0
89	EEurope	0	0	34	26	0	0	2	0	0	0
90	ANZ	0	0	0	1098	0	0	18	0	0	0
91	USA	0	2	0	243	0	0	13	0	0	0
92	Canada	0	0	0	140	0	0	1	0	0	0
93	LatinAm	0	0	0	92	0	0	7	0	0	0
94	ROW	0	1	0	24	0	0	0	0	0	0
	ColTotal	59673	1714	7958	35907	25643	3413	7629	21117	6326	27028

Annex 2:

		41	42	43	44	45	46	47	48	49	50
		C11OthMin	C12MtDary	C13BevTob	C14Seafood	C15OtPrFd	C16MatMfg	C17Chemcl	C18TechMf	C19Vehicle	C20OthMac
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	12933	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	4200	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	15371	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	9706	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	63553	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	38403	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	15887	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	7351	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	7045	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	8150
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	0	0	0	0	0	0	0	0	0
32	C02Rubber	0	0	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	0	0	0	0	0	0	0	0	0	0
35	C05LivStk	0	0	0	0	0	0	0	0	0	0
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	0	0	0	0	0	0	0	0	0	0
38	C08Fishry	0	0	0	0	0	0	0	0	0	0
39	C09Coal	0	0	0	0	0	0	0	0	0	0
40	C10OilGas	0	0	0	0	0	0	0	0	0	0
41	C11OthMin	0	0	0	0	0	0	0	0	0	0
42	C12MtDary	0	0	0	0	0	0	0	0	0	0
43	C13BevTob	0	0	0	0	0	0	0	0	0	0
44	C14Seafood	0	0	0	0	0	0	0	0	0	0
45	C15OtPrFd	0	0	0	0	0	0	0	0	0	0
46	C16MatMfg	0	0	0	0	0	0	0	0	0	0
47	C17Chemcl	0	0	0	0	0	0	0	0	0	0
48	C18TechMfg	0	0	0	0	0	0	0	0	0	0
49	C19Vehicle	0	0	0	0	0	0	0	0	0	0
50	C20OthMach	0	0	0	0	0	0	0	0	0	0
51	C21TxtAprl	0	0	0	0	0	0	0	0	0	0

		41	42	43	44	45	46	47	48	49	50
		C11OthMin	C12MtDary	C13BevTob	C14Seafood	C15OtPrFd	C16MatMfg	C17Chemcl	C18TechMf	C19Vehicle	C20OthMac
52	C22OthInd	0	0	0	0	0	0	0	0	0	0
53	C23ElGsWat	0	0	0	0	0	0	0	0	0	0
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	0
55	C25Trade	0	0	0	0	0	0	0	0	0	0
56	C26Transp	0	0	0	0	0	0	0	0	0	0
57	C27HotRest	0	0	0	0	0	0	0	0	0	0
58	C28PerServ	0	0	0	0	0	0	0	0	0	0
59	C29ComServ	0	0	0	0	0	0	0	0	0	0
60	C30PubServ	0	0	0	0	0	0	0	0	0	0
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	46	17	444	48	145	431	106	43	16	30
77	Mduty	4	145	1201	4	219	661	1433	1465	564	2614
78	Xduty	6	0	0	26	0	314	0	0	0	0
79	State	0	0	0	0	0	0	0	0	0	0
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	17	268	3255	0	1940	3307	11166	8917	4117	10999
82	Japan	0	14	0	0	6	552	2654	6483	1048	7125
83	Taiwan	1	3	0	0	26	1641	3948	2302	475	7166
84	China	0	68	260	0	183	716	3608	1199	313	3952
85	HongKong	0	0	1211	0	1	48	137	87	102	44
86	Korea	12	0	5	0	34	1056	4225	2421	713	5057
87	OthAsia	0	0	0	0	1	6	852	214	48	282
88	EU	2	348	84	0	152	713	4923	4040	1441	5252
89	EEurope	0	139	2	0	4	242	1842	1197	1202	1588
90	ANZ	3	869	1	0	194	167	196	394	276	1210
91	USA	1	157	7	0	9	245	1454	596	354	814
92	Canada	0	5	1	0	16	76	392	41	32	55
93	LatinAm	0	1	25	0	3	213	153	19	17	127
94	ROW	0	0	18	0	1	26	373	63	152	119
	ColTotal	13025	6233	21885	9784	66485	48816	53349	36833	17914	54586

Annex 2:

		51	52	53	54	55	56	57	58	59	60
		C21TxtAprl	C22OthInd	C23ElGsWa	C24Cnstrct	C25Trade	C26Transp	C27HotRest	C28PerServ	C29ComSer	C30PubServ
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	31910	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	17846	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	16674	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	78444	0	0	0	0	0	0
25	A25Trade	0	0	0	0	69607	0	0	0	0	0
26	A26Transp	0	0	0	0	0	23881	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	24257	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	13838	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	47650	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	53657
31	C01Rice	0	0	0	0	0	0	0	0	0	0
32	C02Rubber	0	0	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	0	0	0	0	0	0	0	0	0	0
35	C05LivStk	0	0	0	0	0	0	0	0	0	0
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	0	0	0	0	0	0	0	0	0	0
38	C08Fishry	0	0	0	0	0	0	0	0	0	0
39	C09Coal	0	0	0	0	0	0	0	0	0	0
40	C10OilGas	0	0	0	0	0	0	0	0	0	0
41	C11OthMin	0	0	0	0	0	0	0	0	0	0
42	C12MtDary	0	0	0	0	0	0	0	0	0	0
43	C13BevTob	0	0	0	0	0	0	0	0	0	0
44	C14Seafood	0	0	0	0	0	0	0	0	0	0
45	C15OtPrFd	0	0	0	0	0	0	0	0	0	0
46	C16MatMfg	0	0	0	0	0	0	0	0	0	0
47	C17Chemcl	0	0	0	0	0	0	0	0	0	0
48	C18TechMfg	0	0	0	0	0	0	0	0	0	0
49	C19Vehicle	0	0	0	0	0	0	0	0	0	0
50	C20OthMach	0	0	0	0	0	0	0	0	0	0
51	C21TxtAprl	0	0	0	0	0	0	0	0	0	0

		51	52	53	54	55	56	57	58	59	60
		C21TxtAprl	C22OthInd	C23ElGsWa	C24Cnstrct	C25Trade	C26Transp	C27HotRest	C28PerServ	C29ComSer	C30PubServ
52	C22OthInd	0	0	0	0	0	0	0	0	0	0
53	C23ElGsWat	0	0	0	0	0	0	0	0	0	0
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	0
55	C25Trade	0	0	0	0	0	0	0	0	0	0
56	C26Transp	0	0	0	0	0	0	0	0	0	0
57	C27HotRest	0	0	0	0	0	0	0	0	0	0
58	C28PerServ	0	0	0	0	0	0	0	0	0	0
59	C29ComServ	0	0	0	0	0	0	0	0	0	0
60	C30PubServ	0	0	0	0	0	0	0	0	0	0
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	130	115	92	237	502	350	145	186	350	58
77	Mduty	3095	1602	1	0	0	0	0	0	0	0
78	Xduty	211	0	0	0	0	0	0	0	0	0
79	State	0	0	0	0	0	0	0	0	0	0
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	2016	7077	143	0	0	1897	641	519	1755	176
82	Japan	2232	570	0	0	0	825	279	226	763	77
83	Taiwan	8521	5988	0	0	0	1108	374	303	1025	103
84	China	5699	1166	0	0	0	646	218	177	597	60
85	HongKong	49	95	0	0	0	63	21	17	58	6
86	Korea	5639	3553	0	0	0	814	275	223	753	76
87	OthAsia	91	350	0	0	0	70	24	19	65	7
88	EU	942	1910	0	0	0	711	240	195	658	66
89	EEurope	53	650	0	0	0	249	84	68	231	23
90	ANZ	105	58	0	0	0	146	49	40	135	14
91	USA	188	1591	0	0	0	167	56	46	155	16
92	Canada	29	23	0	0	0	27	9	7	25	2
93	LatinAm	58	513	0	0	0	49	16	13	45	5
94	ROW	35	214	0	0	0	30	10	8	28	3
	ColTotal	61002	43319	16911	78681	70110	31032	26701	15887	54293	54347

Annex 2:

		61	62	63	64	65	66	73	74	75	76
		L01UMU	L02UMM	L03UMH	L04UFU	L05UFM	L06UFH	Capital	H01RF	H02RS	H03RW
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	0	0	0	0	0	0	4545	148	152
32	C02Rubber	0	0	0	0	0	0	0	0	0	0
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	0	0	0	0	0	0	0	916	957	987
35	C05LivStk	0	0	0	0	0	0	0	15633	991	1022
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	0	0	0	0	0	0	0	1090	66	67
38	C08Fishry	0	0	0	0	0	0	0	6620	439	453
39	C09Coal	0	0	0	0	0	0	0	1074	26	26
40	C10OilGas	0	0	0	0	0	0	0	0	0	0
41	C11OthMin	0	0	0	0	0	0	0	0	0	0
42	C12MtDary	0	0	0	0	0	0	0	2728	159	162
43	C13BevTob	0	0	0	0	0	0	0	12123	877	903
44	C14Seafood	0	0	0	0	0	0	0	2835	78	80
45	C15OtPrFd	0	0	0	0	0	0	0	50265	2323	2733
46	C16MatMfg	0	0	0	0	0	0	0	3450	349	358
47	C17Chemcl	0	0	0	0	0	0	0	4897	400	410
48	C18TechMfg	0	0	0	0	0	0	0	7808	1003	1034
49	C19Vehicle	0	0	0	0	0	0	0	3706	547	658
50	C20OthMach	0	0	0	0	0	0	0	2164	90	92
51	C21TxtAprl	0	0	0	0	0	0	0	10968	457	471

		61	62	63	64	65	66	73	74	75	76
		L01UMU	L02UMM	L03UMH	L04UFU	L05UFM	L06UFH	Capital	H01RF	H02RS	H03RW
52	C22OthInd	0	0	0	0	0	0	0	3520	437	449
53	C23ElGsWat	0	0	0	0	0	0	0	1772	152	155
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	0
55	C25Trade	0	0	0	0	0	0	0	6084	617	637
56	C26Transp	0	0	0	0	0	0	0	2113	900	443
57	C27HotRest	0	0	0	0	0	0	0	5694	1279	1320
58	C28PerServ	0	0	0	0	0	0	0	5403	543	598
59	C29ComServ	0	0	0	0	0	0	0	14107	1494	1541
60	C30PubServ	0	0	0	0	0	0	0	20465	1523	1634
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	70942	15936	0	60063	10813	0	0	0	0	0
69	H02RS	8805	1320	44	4631	985	40	0	0	0	0
70	H03RW	9161	0	54	5902	1188	47	0	0	0	0
71	H04US	9000	5858	4310	6817	3877	3173	0	0	0	0
72	H05UW	6806	4430	2713	5156	2759	1974	0	0	0	0
73	E01State	0	0	0	0	0	0	50127	0	0	0
74	E02PrivDom	0	0	0	0	0	0	26194	0	0	0
75	E03PrivFor	0	0	0	0	0	0	17118	0	0	0
76	VAT	0	0	0	0	0	0	0	0	0	0
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	0	0	0	0	0	0	12730	1240	115	119
80	CapAcc	0	0	0	0	0	0	0	5686	3864	3992
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	104714	27543	7122	82569	19621	5234	106169	196905	19835	20496

Annex 2:

		77	78	79	80	81	82	83	84	85	86
		H04US	H05UW	E01State	E02PrivDon	E03PrivFor	VAT	Mduty	Xduty	State	CapAcc
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	285	212	0	0	0	0	0	0	0	1039
32	C02Rubber	0	0	0	0	0	0	0	0	0	9
33	C03Coffee	0	0	0	0	0	0	0	0	0	0
34	C04OthCrp	49	8207	0	0	0	0	0	0	0	135
35	C05LivStk	1977	1449	0	0	0	0	0	0	0	828
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	121	92	0	0	0	0	0	0	0	20
38	C08Fishry	858	635	0	0	0	0	0	0	0	22
39	C09Coal	66	44	0	0	0	0	0	0	0	322
40	C10OilGas	0	0	0	0	0	0	0	0	0	231
41	C11OthMin	0	0	0	0	0	0	0	0	0	8
42	C12MtDary	302	227	0	0	0	0	0	0	0	136
43	C13BevTob	1761	1289	0	0	0	0	0	0	0	278
44	C14Seafood	201	133	0	0	0	0	0	0	0	11
45	C15OtPrFd	661	495	0	0	0	0	0	0	0	1098
46	C16MatMfg	681	506	0	0	0	0	0	0	0	1238
47	C17Chemcl	765	645	0	0	0	0	0	0	0	1469
48	C18TechMfg	1985	1454	0	0	0	0	0	0	0	7622
49	C19Vehicle	1097	358	0	0	0	0	0	0	0	1899
50	C20OthMach	204	143	0	0	0	0	0	0	0	12541
51	C21TxtAprl	1011	711	0	0	0	0	0	0	0	1323

		77	78	79	80	81	82	83	84	85	86
		H04US	H05UW	E01State	E02PrivDon	E03PrivFor	VAT	Mduty	Xduty	State	CapAcc
52	C22OthInd	839	1180	0	0	0	0	0	0	0	1521
53	C23ElGsWat	294	218	0	0	0	0	0	0	0	0
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	74502
55	C25Trade	1270	918	0	0	0	0	0	0	0	3657
56	C26Transp	792	603	0	0	0	0	0	0	0	591
57	C27HotRest	13285	0	0	0	0	0	0	0	0	0
58	C28PerServ	1144	261	0	0	0	0	0	0	4396	0
59	C29ComServ	568	2221	0	0	0	0	0	0	1020	0
60	C30PubServ	1165	588	0	0	0	0	0	0	20083	0
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	0	0	13340	7835	0	0	0	0	17976	0
69	H02RS	0	0	1239	727	0	0	0	0	1669	0
70	H03RW	0	0	1280	752	0	0	0	0	1725	0
71	H04US	0	0	2611	1533	0	0	0	0	3518	0
72	H05UW	0	0	1975	1160	0	0	0	0	2661	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	0	0	0	0	0	0	0	0	0	0
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	243	184	7730	4581	5090	23700	13300	1200	0	0
80	CapAcc	10653	8057	21953	10590	15183	0	0	0	29183	0
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	42279	30828	50127	27177	20273	23700	13300	1200	82230	110503

Annex 2:

		87	88	89	90	91	92	93	94	95	96
		ASEAN	Japan	Taiwan	China	HongKong	Korea	OthAsia	EU	EEurope	ANZ
1	A01Rice	0	0	0	0	0	0	0	0	0	0
2	A02Rubber	0	0	0	0	0	0	0	0	0	0
3	A03Coffee	0	0	0	0	0	0	0	0	0	0
4	A04OthCrp	0	0	0	0	0	0	0	0	0	0
5	A05LivStk	0	0	0	0	0	0	0	0	0	0
6	A06OthAg	0	0	0	0	0	0	0	0	0	0
7	A07Forest	0	0	0	0	0	0	0	0	0	0
8	A08Fishry	0	0	0	0	0	0	0	0	0	0
9	A09Coal	0	0	0	0	0	0	0	0	0	0
10	A10OilGas	0	0	0	0	0	0	0	0	0	0
11	A11OthMin	0	0	0	0	0	0	0	0	0	0
12	A12MtDary	0	0	0	0	0	0	0	0	0	0
13	A13BevTob	0	0	0	0	0	0	0	0	0	0
14	A14Seafood	0	0	0	0	0	0	0	0	0	0
15	A15OtPrFd	0	0	0	0	0	0	0	0	0	0
16	A16MatMfg	0	0	0	0	0	0	0	0	0	0
17	A17Chemcl	0	0	0	0	0	0	0	0	0	0
18	A18TechMfg	0	0	0	0	0	0	0	0	0	0
19	A19Vehicle	0	0	0	0	0	0	0	0	0	0
20	A20OthMach	0	0	0	0	0	0	0	0	0	0
21	A21TxtAprl	0	0	0	0	0	0	0	0	0	0
22	A22OthInd	0	0	0	0	0	0	0	0	0	0
23	A23ElGsWat	0	0	0	0	0	0	0	0	0	0
24	A24Cnstrct	0	0	0	0	0	0	0	0	0	0
25	A25Trade	0	0	0	0	0	0	0	0	0	0
26	A26Transp	0	0	0	0	0	0	0	0	0	0
27	A27HotRest	0	0	0	0	0	0	0	0	0	0
28	A28PerServ	0	0	0	0	0	0	0	0	0	0
29	A29ComServ	0	0	0	0	0	0	0	0	0	0
30	A30PubServ	0	0	0	0	0	0	0	0	0	0
31	C01Rice	0	0	0	0	0	0	0	0	0	0
32	C02Rubber	343	33	159	224	75	66	5	310	59	9
33	C03Coffee	475	305	2	35	4	252	8	4112	592	275
34	C04OthCrp	1257	223	721	239	239	324	131	1028	196	306
35	C05LivStk	35	171	1	2	336	0	0	48	163	1
36	C06OthAg	0	0	0	0	0	0	0	0	0	0
37	C07Forest	10	313	190	72	36	30	0	4	2	1
38	C08Fishry	241	1792	36	18	283	174	0	636	53	99
39	C09Coal	287	1039	107	21	1	85	0	680	0	11
40	C10OilGas	7616	4468	3	2973	0	287	0	0	0	9706
41	C11OthMin	317	406	520	175	1	120	0	34	386	94
42	C12MtDary	169	3	4	17	72	0	0	119	0	0
43	C13BevTob	395	17	43	0	1164	0	0	225	46	12
44	C14Seafood	230	1694	30	16	24	152	0	265	31	35
45	C15OtPrFd	108	365	674	75	144	67	2	345	595	56
46	C16MatMfg	154	438	1557	60	69	154	5	1748	210	112
47	C17Chemcl	1473	693	533	245	283	125	26	1138	368	93
48	C18TechMfg	2296	1443	109	87	312	197	3	2094	168	33
49	C19Vehicle	306	401	103	15	398	117	0	629	26	50
50	C20OthMach	4248	4621	969	201	763	252	12	1942	289	219
51	C21TxtAprl	2344	6029	2484	672	1974	2972	28	10601	977	522

		87	88	89	90	91	92	93	94	95	96
		ASEAN	Japan	Taiwan	China	HongKong	Korea	OthAsia	EU	EEurope	ANZ
52	C22OthInd	313	1255	815	120	156	185	30	11079	472	249
53	C23ElGsWat	22	24	7	5	3	3	0	48	5	11
54	C24Cnstrct	0	0	0	0	0	0	0	0	0	0
55	C25Trade	4874	5236	1573	997	763	748	38	10645	1074	2404
56	C26Transp	1305	1402	421	267	204	200	10	2850	287	644
57	C27HotRest	381	410	123	78	60	59	3	833	84	188
58	C28PerServ	400	429	129	82	63	61	3	873	88	197
59	C29ComServ	1270	1364	410	260	199	195	10	2774	280	626
60	C30PubServ	576	618	186	118	90	88	4	1257	127	284
61	L01UMU	0	0	0	0	0	0	0	0	0	0
62	L02UMM	0	0	0	0	0	0	0	0	0	0
63	L03UMH	0	0	0	0	0	0	0	0	0	0
64	L04UFU	0	0	0	0	0	0	0	0	0	0
65	L05UFM	0	0	0	0	0	0	0	0	0	0
66	L06UFH	0	0	0	0	0	0	0	0	0	0
67	Capital	0	0	0	0	0	0	0	0	0	0
68	H01RF	0	0	0	0	0	0	0	0	0	0
69	H02RS	0	0	0	0	0	0	0	0	0	0
70	H03RW	0	0	0	0	0	0	0	0	0	0
71	H04US	0	0	0	0	0	0	0	0	0	0
72	H05UW	0	0	0	0	0	0	0	0	0	0
73	E01State	0	0	0	0	0	0	0	0	0	0
74	E02PrivDom	0	0	0	0	0	0	0	0	0	0
75	E03PrivFor	0	0	0	0	0	0	0	0	0	0
76	VAT	0	0	0	0	0	0	0	0	0	0
77	Mduty	0	0	0	0	0	0	0	0	0	0
78	Xduty	0	0	0	0	0	0	0	0	0	0
79	State	0	0	0	0	0	0	0	0	0	0
80	CapAcc	0	0	0	0	0	0	0	0	0	0
81	ASEAN	0	0	0	0	0	0	0	0	0	0
82	Japan	0	0	0	0	0	0	0	0	0	0
83	Taiwan	0	0	0	0	0	0	0	0	0	0
84	China	0	0	0	0	0	0	0	0	0	0
85	HongKong	0	0	0	0	0	0	0	0	0	0
86	Korea	0	0	0	0	0	0	0	0	0	0
87	OthAsia	0	0	0	0	0	0	0	0	0	0
88	EU	0	0	0	0	0	0	0	0	0	0
89	EEurope	0	0	0	0	0	0	0	0	0	0
90	ANZ	0	0	0	0	0	0	0	0	0	0
91	USA	0	0	0	0	0	0	0	0	0	0
92	Canada	0	0	0	0	0	0	0	0	0	0
93	LatinAm	0	0	0	0	0	0	0	0	0	0
94	ROW	0	0	0	0	0	0	0	0	0	0
	ColTotal	31442	35193	11909	7075	7718	6916	318	56317	6579	16236

Annex 2:

		97	98	99	100	
		USA	Canada	LatinAm	ROW	RowTotal
1	A01Rice	0	0	0	0	59441
2	A02Rubber	0	0	0	0	1586
3	A03Coffee	0	0	0	0	5188
4	A04OthCrp	0	0	0	0	31121
5	A05LivStk	0	0	0	0	25634
6	A06OthAg	0	0	0	0	3405
7	A07Forest	0	0	0	0	7271
8	A08Fishry	0	0	0	0	20913
9	A09Coal	0	0	0	0	6284
10	A10OilGas	0	0	0	0	25143
11	A11OthMin	0	0	0	0	12933
12	A12MtDary	0	0	0	0	4200
13	A13BevTob	0	0	0	0	15371
14	A14Seafood	0	0	0	0	9706
15	A15OtPrFd	0	0	0	0	63553
16	A16MatMfg	0	0	0	0	38403
17	A17Chemcl	0	0	0	0	15887
18	A18TechMfg	0	0	0	0	7351
19	A19Vehicle	0	0	0	0	7045
20	A20OthMach	0	0	0	0	8150
21	A21TxtAprl	0	0	0	0	31910
22	A22OthInd	0	0	0	0	17847
23	A23ElGsWat	0	0	0	0	16674
24	A24Cnstrct	0	0	0	0	78444
25	A25Trade	0	0	0	0	69607
26	A26Transp	0	0	0	0	23881
27	A27HotRest	0	0	0	0	24257
28	A28PerServ	0	0	0	0	13838
29	A29ComServ	0	0	0	0	47650
30	A30PubServ	0	0	0	0	53657
31	C01Rice	0	0	0	0	59673
32	C02Rubber	32	28	26	19	1714
33	C03Coffee	1407	113	1	97	7958
34	C04OthCrp	694	102	105	141	35907
35	C05LivStk	163	43	1	0	25643
36	C06OthAg	0	0	0	0	3413
37	C07Forest	1	0	0	3	7629
38	C08Fishry	572	47	0	17	21117
39	C09Coal	16	0	112	100	6326
40	C10OilGas	1602	0	0	0	27028
41	C11OthMin	1	0	0	0	13025
42	C12MtDary	120	6	0	1	6233
43	C13BevTob	37	315	0	19	21885
44	C14Seafood	1103	73	0	6	9784
45	C15OtPrFd	261	55	41	12	66485
46	C16MatMfg	82	40	41	101	48816
47	C17Chemcl	78	16	306	163	53349
48	C18TechMfg	15	39	235	65	36833
49	C19Vehicle	1	2	21	35	17914
50	C20OthMach	294	32	543	126	54586
51	C21TxtAprl	414	766	435	430	61002

		97	98	99	100	
		USA	Canada	LatinAm	ROW	RowTotal
52	C22OthInd	984	317	348	278	43319
53	C23ElGsWat	9	2	2	3	16911
54	C24Cnstrct	0	0	0	0	78681
55	C25Trade	1936	414	489	711	70110
56	C26Transp	518	111	131	190	31032
57	C27HotRest	151	32	38	56	26701
58	C28PerServ	159	34	40	58	15887
59	C29ComServ	504	108	128	185	54293
60	C30PubServ	229	49	58	84	54347
61	L01UMU	0	0	0	0	104714
62	L02UMM	0	0	0	0	27543
63	L03UMH	0	0	0	0	7122
64	L04UFU	0	0	0	0	82569
65	L05UFM	0	0	0	0	19621
66	L06UFH	0	0	0	0	5234
67	Capital	0	0	0	0	106169
68	H01RF	0	0	0	0	196905
69	H02RS	0	0	0	375	19835
70	H03RW	0	0	0	387	20496
71	H04US	0	0	0	1581	42279
72	H05UW	0	0	0	1195	30828
73	E01State	0	0	0	0	50127
74	E02PrivDom	0	0	0	984	27177
75	E03PrivFor	0	0	0	3154	20273
76	VAT	0	0	0	0	23700
77	Mduty	0	0	0	0	13300
78	Xduty	0	0	0	0	1200
79	State	0	0	0	2400	82230
80	CapAcc	0	0	0	1342	110503
81	ASEAN	0	0	0	-27901	31442
82	Japan	0	0	0	12032	35193
83	Taiwan	0	0	0	-21142	11909
84	China	0	0	0	-15153	7075
85	HongKong	0	0	0	5778	7718
86	Korea	0	0	0	-18003	6916
87	OthAsia	0	0	0	-1711	318
88	EU	0	0	0	33801	56317
89	EEurope	0	0	0	-1057	6579
90	ANZ	0	0	0	11262	16236
91	USA	0	0	0	5270	11382
92	Canada	0	0	0	1863	2744
93	LatinAm	0	0	0	1747	3102
94	ROW	0	0	0	1796	2902
	ColTotal	11382	2744	3102	2902	