



A 2012 SOCIAL ACCOUNTING MATRIX (SAM) FOR VIETNAM



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LIST OF ABBREVIATIONS

IO	Input-output table
CIEM	Central Institute for Economic Management
BoP	Balance of Payment
CGE	Computable General Equilibrium
DANIDA	Danish International Development Agency
GSO	General Statistics Office
MoF	Ministry of Finance
SAM	Social Accounting Matrix
SBV	State Bank of Vietnam
SUT	Supply-use Table
UNU-WIDER	United Nation University World Institute for Development Economics Research
VHLSS	Vietnam Household Living Standard Survey

INTRODUCTION

A Social Accounting Matrix (SAM) is an economy-wide data set that captures flows and circulations of products and monetary flows, and reflects the process of initial income distribution and redistribution of industries and economic institutions of an economy in a certain year. Thus, a SAM can depict an overall picture as well as reveal certain characteristics of the structure of an economy. Especially, a SAM may serve as input data for policy analysis models, such as multiplier models and computable general equilibrium (CGE) model, in order to analyse and propose economic policy recommendations.

The Central Institute for Economic Management (CIEM) has collaborated with international agencies⁷ to construct Vietnamese SAMs for the years 1999, 2000, 2003, 2007 and 2011 SAM with the financial support from Danish International Development Agency (DANIDA). Updating the SAM has helped CIEM and other local and oversea organizations in analysing economic policies in a changing domestic and international context. These SAMs have been used for analyses and assessments, such as: (1) implications of climate change for economic growth and development in Vietnam to 2050,⁸ (2) the low-carbon options for Vietnam,⁹ (3) Fossil fuel prices and taxes: effects on economic development and income distribution in Vietnam,¹⁰ and other studies.

This report documents a 2012 SAM for Vietnam based on the most recent input-output enterprise survey data for the year 2012 (in the form of a supply-use table, SUT) and the Vietnam Household Living Standard Survey (VHLSS). Compared to the earlier 2011 SAM (which was based on 2007 input-output enterprise survey data), besides updating the information on the structure of the economy to the year 2012, there is more detail in terms of activities and commodities.

⁷ The 1999 SAM was constructed with the collaboration between CIEM with the Nordic Institute of Asian Studies (NIAS), while the 2003 and 2007 SAM were completed with the collaboration with the University of Copenhagen.

⁸ University of Copenhagen, UNU-WIDER, CIEM (2012), *Implications of climate change for economic growth and development in Vietnam to 2050*.

⁹ Nguyen Manh Hai, Dang Thi Thu Hoai, Ho Cong Hoa (2013), *The low-carbon options for Vietnam*.

¹⁰ Dirk Willenbockel, Ho Cong Hoa (2011), *Fossil fuel prices and taxes: effects on economic development and income distribution in Viet Nam*.

The development of Vietnam 2012 SAM was funded by the United Nations University World Institute for Development Economics Research (UNU-WIDER). The 2012 SAM was developed by a research team of Central Institute for Economic Management — including Dr.Dang Thi Thu Hoai, Dr. Ho Cong Hoa, MA. Tran Trung Hieu — under the technical guidance and supervision of international experts of UNU-WIDER — including Prof. Finn Tarp and MA. Dirk van Seventer.

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The 2012 SAM data for Vietnam is presented in this report and the enclose CD.

CHAPTER I - OVERVIEW AND CONSTRUCTION OF THE 2012 VIETNAM SAM

1. Overview

Vietnam's 2012 SAM is a square data-matrix of 344x344 dimensions (344 rows and columns). The basic structure of a macro SAM is presented in Table 1. Except for columns/rows 6, 8, 9 and 10 that are not further broken down, they are disaggregated as follows:

- Colum/Row 1 is disaggregated into 164 activities, which are taken from Vietnam's 2012 SUT.
- Colum/Row 2 is disaggregated into 164 commodities corresponding to activities and a single column/row for transaction cost, which are taken from Vietnam's 2012 SUT.
- Colum/Row 3 is disaggregated into 11 factors of production, of which six are labour categories, are classified by geography (urban-rural) and education attainment levels (primary, secondary, tertiary), two types of capital (agricultural and non-agricultural), land, livestock and fish.
- Colum/Row 4 is disaggregated into two types of enterprise (agricultural and non-agricultural).
- Colum/Row 5 is disaggregated into 20 types of households, classified along three dimensions, i.e., urban-rural; agricultural and non-agricultural; and five income quintiles, from the poorest (quintile 1) to the richest (quintile 5).
- Colum/Row 7 is disaggregated into five types of taxes: activity tax, factor tax, sales tax, import tax and direct tax. The match between these taxes and the tax classification from state budget data is presented in Appendix 1.

Table 1: Basic structure of the 2012 Vietnam SAM

Column serial number	Row serial number	Activities	Commodities	Factors	Enterprises	Households	Government	Taxes	Investment	Change in stocks	Rest of the World	Total
Column serial number	1 (164)*	2 (164)	3 (3)	4 (1)	5 (1)	6 (1)	7 (5)	8 (1)	9 (1)	10 (1)		
Activities	1	Marketed Output									Activity income	
Commodities	2	Intermediate Inputs	Transaction costs		Marketed consumption of households	Government consumption		Investment	Change in stocks	Exports	Total demand	
Factors	3	Value-added									Factor earnings	
Enterprises	4		Factor income to enterprises			Transfers to enterprises				Net foreign enterprises receipts	Enterprises earnings	
Households	5		Factor income to households	Indirect capital payments		Transfers to households				Foreign remittances received	Household income	
Government	6			Revenue from non-corporate income taxes			Revenue from taxes			Net foreign transfers to the government	Government income	
Taxes	7	Activity taxes	Sales taxes	Factor taxes	Corporate income taxes	Personal taxes				Revenue from taxes		
Savings	8				Enterprises savings	Household savings	Government savings			Foreign savings	Savings	
Change in stocks	9							Change in stocks			Change in stocks	
Rest of the world	10		Imports		Net payments to foreign owned factors of production						Foreign exchange outflow	
Total		Gross output	Total supply	Factor expenditure	Enterprise Household expenditure	Household expenditure	Government expenditure	Revenue from taxes	Investment	Change in stock	Foreign exchange inflow	

Note: * Numbers in bracket report the level of disaggregation of that column/row in the Micro Vietnam 2012 SAM.

Source: Authors' compilation.

2. The SAM construction process

The 2012 SAM for Vietnam is constructed using Excel and GAMS software. The programmes were developed by the International Food Policy Research Institute (IFPRI) and has been used in one way or another for constructing SAMs in many countries, including the previous Vietnam SAMs for 2000, 2003, 2007 and 2011. Input data on the disaggregation of production factors and households was processed using Stata.

- The construction of the 2012 SAM consists of 3 steps:

- Step 1: Collect input data from various sources to create a MacroSAM in which activity and commodity accounts, household account and factor account have not been disaggregated yet.

- Step 2: Disaggregate activity and commodity accounts, and balance a so-called SUTSAM in which the activities and commodities are disaggregated but household and factor accounts are still aggregated.

- Step 3: Use the SUTSAM as a starting point and disaggregate household, factor accounts and income distribution and balance the MicroSAM.

3. Input data sources of the 2012 SAM for Vietnam

Input data for the 2012 Vietnam SAM are collected from four sources as follows:

1. The 2012 SUT Vietnam developed by Vietnam's General Statistics Office (based on a newly available input-output enterprise survey data for 2012).

2. Ministry of Finance (MoF) data on the state budget revenue and expenditure for the year 2012.

3. The State Bank of Vietnam (SBV) data on the 2012 Balance of Payments.

4. Data on household income and expenditure from the 2012 Vietnam Household Living Standard Survey (VHLSS 2012).

These data sources are discussed in more detail below:

1. The 2012 SUT is the main data source for the construction of Vietnam's 2012 SAM. The SUT contains 164 activity accounts and 164

commodity accounts. The 2012 SAM has the same level of detail. Moreover, the national accounts that can be derived from the 2012 SUT appear to be very close to GSO's 2012 Statistical Yearbook and have therefore been maintained as the MacroSAM benchmarks where applicable.

2. Data on the state budget revenue and expenditure of the MoF is used to add more information that is not captured in the 2012 SUT. In terms of revenues, the 2012 SUT only reveals data on state revenues from activity tax, sales tax and import tax. These only reflect a part of total revenue of the state budget. Similarly, the 2012 SUT only covers the government's spending on commodities, while government transfers to institutions (households, enterprises, rest of the world) are not presented. Therefore, additional information from MoF's state budget revenue and expenditure is used in order to capture Vietnam's state budget account in the 2012 SAM. The budget deficit is calculated as the residual.

3. Additional information taken from the SBV 2012 BoP of Vietnam is used to fill-in missing data on foreign enterprise receipts and foreign remittances received by household that are not depicted in the 2012 SUT. The balance on the current account is calculated as a residual balancing item after accounting for all foreign payments and foreign receipts.

4. Data from Vietnam's 2012 VHLSS is used to calculate various shares to disaggregate production factor and household accounts in the 2012 SAM. In particular, household consumption of each commodity identified in the SAM by type of household, the payment shares to types of labour by each industry and the share of income derived from labour and other sources by each type of household. However, the industries and commodities identified in the 2012 VHLSS are not as detailed as in SUT. Therefore, the shares of those activities and commodities that are missing have been approximated by shares of other activities and commodities data according to mappings presented in Appendix 3.

Usually, constructing SAM accounts along the lines of the steps above will lead to imbalances between the row and the corresponding column totals. Consequently, after a 'prior' SAM is constructed, it will then be balanced to eliminate the differences between row and its corresponding column totals by means of cross-entropy method (see Robinson et al. 2001). This approach minimizes the entropy 'distance' between the initial SAM

and the balanced SAM, allowing selected entries of the initial SAM to be kept unchanged after balancing.

However, since the core of the SAM data, including for the MacroSAM accounts, is consistent with the underlying (balanced) SUT and the additional state budget revenue—expenditure data — (2) above, and BoP data (3) above — do not impact on these balances, the SUTSAM (i.e., before disaggregation of the factors of production and of households) does not require cross-entropy treatment in our case.

The final step from SUTSAM to MicroSAM involves the disaggregation of the accounts for the production factors and households. Household income and their outlays are constrained by the SUTSAM and they are disaggregated by the VHLSS shares in such a way that a simple biproportional scaling of the household income distribution matrix is applied to create a balanced MicroSAM. In this way, the disaggregation of factors of production and households does not impact on the rest of the MicroSAM.¹¹

¹¹An alternative, in which the imbalances of detailed household income and expenditure accounts are distributed across the full SAM using an additional application of the cross-entropy method is not explored here, as it would result in undesirable deviations between the MicroSAM and the underlying SUT.

CHAPTER II- THE 2012 MACROSAM FOR VIETNAM

The 2012 MacroSAM for Vietnam is presented in Table 2. In this chapter we report further information on each cell in Table 2.

Cell (1,2) Marketed production (Activities – Commodities): VND 8,833,678 billion

This cell captures the total value of sales (supply at producer prices) by activities. The value and disaggregation of the Supply Matrix of the SAM is consistent with that in 2012 SUT.

Cell (2,1) Intermediate consumption (Commodities – Activities): VND5,889,709 billion

This cell measures total intermediate consumption by activities, which is derived from and disaggregated according to the 2012 SUT.

Cell (2,2) Transaction costs (Commodities – Commodities): VND609,671 billion

This cell reflects transaction costs (for transportation and distribution) of all commodities from factory to domestic market or the country border (in case of export) and vice versa, from country border to domestic market (in case of import). The value and its disaggregation is the same as in 2012 SUT.

Cell (2,5) Private consumption (Commodities – Household): VND2,013,974 billion

The value of total final consumption and for each of the 164 commodities by all households (which covers household consumption on both domestically produced and imported commodities) is taken from the 2012 SUT. Further disaggregation of households is based on the 2012 VHLSS of the GSO. Households are disaggregated by three dimensions: rural/urban; agricultural/non-agricultural; and five quintiles of income per capital. The VHLSS values of consumption on selected commodities is then used to calculate consumption shares of each group of households for the commodities identified in the SUT.

Note that GSO's statistics of final consumption by household in 2012 at current price is VND2,093,261 billion (GSO 2012 Statistical Yearbook).

Cell (2,6) Government consumption (Commodities – Government): VND192,338 billion

This cell depicts the government's recurrent expenditures. The 2012 SUT itemizes government spending across such services as health, education, science and technology, public administration, transportation. The value is close to GSO's statistics on government consumption in 2012 which according to the Statistical Yearbook 2012 is VND192,362 billion

Cell (2,8) Total capital formation - investment (Commodities – Investment): VND785,363 billion

This cell depicts the total private and public investment (VND785,363 billion) based in total and by detailed commodities on the 2012 SUT. This is close to the GSO's statistics on capital formation in 2012 which according to the Statistical Yearbook 2012 is VND785,337 billion

Cell (2,9) change in stocks (Commodities – Change in stocks): VND 96,492 billion

This cell shows the change in stocks of commodities (VND 96,492 billion) and is based on the 2012 SUT in detail and in total. This is close to the GSO's statistics on change in stock in 2012 which according to the Statistical Yearbook 2012 is VND 98,823 billion

Cell (2,10) Exports (Commodities – Rest of the world): VND2,596,662 billion

The value in this cell reflects exports (at FoB prices) and is taken from the 2012 SUT in total and for detailed commodities. The total in the 2012 SUT is lower than what is reported by the GSO (VND 2,597,264 billion (current price) (Statistical Yearbook 2012).

Cell (3,1) value added by factors of production (Factors – Activities): VND2,889,433 billion

This cell illustrates total added value of production factors (labour, capital and land). It is generated from the 2012 SUT. Value added of labour and capital is reported in the 2012 SUT and are VND1,898,020 billion, VND991.413 billion, respectively.

The SAM identifies land as an additional factor of production. Returns to land are derived as fixed proportions of the returns to capital, assumed at 86% for livestock, 87% for perennial crops, 89% for aquaculture and 94% for annual crops.

The sum of the value of added value of factors in the 2012 SAM and the value of sale and import tax (cell 7,1, discussed below) and activity tax (cell

Table 2: The 2012 MacroSAM for Vietnam (bill. VND)

Column	Row	Activities	Commodities	Factors	Enterprises	Households	Government	Taxes	Investment	Change in stocks	Rest of the World	Total
Activities	1	2	3	4	5	6	7	8	9	10	11	
Commodities	2	5,889,709	609,671		2,013,974	192,338		785,363	96,492	2,596,662	12,184,208	8,833,678
Factors	3	2,889,433										2,889,433
Enterprises	4		718,176			96,738						6,450
Households	5		2,019,622	337,571		85,671						159,583
Government	6			107,474			664,614					10,267
Taxes	7	54,536	323,567	11,885	228,474	46,152						664,614
Savings	8				147,846	542,320	407,608					(215,920) 881,854
Change in stocks	9									96,492		96,492
Rest of the World	10		2,417,293	139,750								2,557,043
Total	11	8,833,678	12,184,208	2,889,433	821,364	2,602,447	782,355	664,614	881,854	96,492	2,557,043	

Source: Authors' calculations.

7,2, discussed below) is equivalent to VND3,267,536 billion This can be compared with the value of gross domestic production at current price reported by the GSO of VND3,245,419 billion (Statistics Yearbook 2012).

Cell (4,3) Gross profits (Enterprises – Factors): VND718,176 billion

This cell reflects factor income (for the production factor capital) received by enterprises in 2012. The value is calculated as a residual by taking total value added of capital, as discussed in cell (3,1) above and subtracting factor taxes (cell 7,3, discussed later) and transfers to the rest of the world (cell 10,3, discussed later).

Cell (4,6) Government transfer to enterprises (Enterprises –Government): VND 96,738 billion

The value of transfers of the government to enterprises is taken from MoF's data on state budget revenue and expenditure. This value is the sum of interest payment (VND39,884 billion) and other payments of the government to enterprises (economic expenditure, VND56,854 billion).

Cell (4,10) Foreign transfers to enterprises (Enterprises – Rest of the World): VND6,450 billion

Foreign transfers to Vietnamese enterprises is calculated using the SBV 2012 BoP. Net foreign receipts of enterprises in 2012 is USD 300 million which is converted to VNDusing the exchange rate of USD 1 = VND21,500 to obtain the 2012 MacroSAM value.

Cell (5,3) Factor payments to households (Household – Factors): VND2,019,622 billion

Households receive earnings directly from factors, including labour and land. The value is the sum of payments to employees and income from land, which are VND1,898,020 billion and VND121,602 billion, respectively. The latter is corrected for Agricultural Tax as reported by the MoF. Total factor payments to households are disaggregated for different groups of households based on the 2012 VHLSS.

Cell (5,4) Enterprises transfers to households (Households–Enterprises): VND337,571 billion

This cell captures transfers to households from enterprises, which is calculated as the remaining of total income of enterprises (VND821,364 billion) after subtracting the sum of corporate income tax (direct tax VND228,474

billion), other non-tax payments to the government (VND 107,474 billion) and enterprises savings (VND 147,846 billion). This transfer represents the income that households receive indirectly from the production factor capital.

Cell (5,6) Government transfers to households (Households-Government): VND85,671 billion

Transfers of the government to households are taken from MoF's data on social security for the year 2012. In the 2012 SAM, the government social security transfer payment are disaggregated for different groups of households based on information reported in the 2012 VHLSS.

Cell (5,10) Foreign remittances received by households (Households – Rest of the world): VND159,583 billion

Households remittances received from abroad is derived from the SBV 2012 BoP data on net transfers (US\$7.9 billion), converted to VND using the exchange rate of US\$1 = VND21,500 and subtracts the net foreign transfers to the government (VND10,267 billion).

Cell (6,4) Non-tax payments from enterprises to the government (Government – Enterprises): VND107,474 billion

This cell reflects payments from enterprises to the government other than corporate income tax. The value is generated from MoF's data on the state budget revenues in the year 2012, which covers fees, charges (VND11,281.0 billion), rental of land (VND7,771 billion), sale of state-owned houses, land use right assignments (VND46,904.0 billion) and other revenues (VND41,518.0 billion).

Cell (6,7) Government tax revenue (Government – Taxes): VND664,614 billion

Government's revenue from taxes comprises activity tax (VND54,536 billion), factor tax (VND11,885 billion), sale tax (VND253,522 billion), corporate and individual income tax (VND274,626) and import tax (VND70,045 billion). The values are taken from the 2012 SUT and MoF's data on the state budget revenues for the year 2012. The value for total government tax revenue here is different from what is reported in the MoF data on the state budget revenues for the year 2012 (VND617,442 billion). The reason is that we are using some value from the 2012 SUT instead of MoF data (see discussion on taxes below).

Cell (6,10) Net foreign transfers to the government (Government – Rest of the world): VND10,267 billion

Net foreign transfers to the government is taken from MoF's data on the state budget revenue for the year 2012.

Cell (7,1) Activity tax (Taxes – Activities): VND54,536 billion

The value is taken from the 2012 SUT, reflecting total tax on activities. Activity tax can be considered as an indirect tax during the production process such as license tax or natural resource tax. The total number here is different to the number reported in MoF's data on the state budget revenues for the year 2012, where natural resource tax is VND40,660 billion and license tax is VND1,575 billion.

Cell (7,2) Indirect tax (Taxes – Commodities): VND323,567 billion

The value in this cell captures indirect taxes levied on products in the year 2012 and is taken directly from the 2012 SUT. It is the sum of tax on products (VND253,522 billion) and import duties (VND70,045 billion). The sum of this value together with the activity tax in cell (7,1) above is VND378,103. This is higher than the number reported in the 2012 state budget revenues (VND375,737.0 billion). The indirect taxes as reported the state budget include value-added tax on import-export, excise and environmental protection (VND71,276.0 billion); value added tax on domestic consumption of goods and services (VND174,056 billion); special consumption tax on domestic goods and services (VND43,364.0 billion); natural resource tax (VND40,660). The value as reported in the 2012 SUT is used here instead in order to preserve the overall balance in the commodity accounts as well as the gap between GDP at factor cost and market price of the 2012 SAM.

Cell (7,3) Factor taxes (Taxes – Factors): VND11,885 billion

This cell reveals factor taxes, which is derived from the MoF data on the state budget revenue for the year 2012. The value is composed of agricultural land-use tax (VND69 billion) and tax on transfer of properties (VND11,816.0) to obtain VND11,885 billion in the 2012 MacroSAM.

Cell (7,4) Corporate tax (Taxes – Enterprises): VND228,474 billion

This value is higher than the number reported in the 2012 state budget revenues from MoF's data (VND215,798 billion) because it adds the item 'other tax' in the state budget revenues from MoF data.

Cell (7,5) Personal tax (Taxes – Households): VND46,152 billion

The value is taken from MoF's data on the state budget revenue in the year 2012, including individual income tax (VND44,959.0 billion) and land and housing tax (VND1,193.0 billion).

Cell (8,4) Enterprises savings (Savings – Enterprises): VND147,846 billion

The value is calculated using the assumption that the enterprise savings ratio is 18%, multiplied by total income of enterprises (VND821,364 billion).

Cell (8,5) Households savings (Savings – Households): VND542,320 billion

Household savings is the residual of household income (VND2,602,447 billion) household expenditure (VND2,013,974 billion, by also accounting for income tax VND46,152 billion).

Cell (8,6) Government savings (Savings - Government): VND407,608 billion

This entry is treated as a residual after accounting for all government current revenues and payments items. The value does not cover MoF's 'expenditure on investment development' as this is for our purposes interpreted as public investment.

Cell (8,10) Recurrent account balance (Savings â€“ Rest of the world): VND-215,920 billion

The current account balance is obtained as a residual balancing item after accounting for all foreign payments (VND2,557,043 billion) and receipts. The latter includes exports (VND2,596,662 billion), net foreign transfers to enterprises (VND6,450 billion), net foreign remittances received by household (VND159,583 billion) and net transfers to the government (VND10,267 billion). The difference with the SBV BoP is due to the 2012 SUT recording of trade in goods and services.

Cell (9,8) change in stocks as an investment (Change in stocks investment): VND96,49 billion

This cell depicts the total change in stocks (VND96,492 billion) and is taken from the 2012 SUT.

Cell (10,2) Imports (Rest of the world – Commodities): VND2,417,293 billion

The total import value is taken from the 2012 SUT. This value is less than the imports of goods and services as reported in GSO's 2012 Statistical Yearbook (VND2,446,279 billion).

Cell (10,3) Net payments to foreign owned factors of production (Rest of the world - factors): VND139,750 billion

This cell depicts the net investment income in the SBV's BoP.

CHAPTER III - MICRO SAM: STRUCTURE OF VIETNAM ECONOMY IN 2012

1. Sectoral production and trade

Using the 2012 MicroSAM, some basic activity level indicators of the economy are presented in Table 3. It can be seen that the industry and construction sectors contributed the most to total gross output, GDP, import and export values (respectively 62.5%, 45.2%, 85.3% and 85.8%).

The service sector accounted for 39% of GDP and 23.6% of total gross output. Although many agricultural commodities of Vietnam take high rankings in exports (such as rubber, coffee, pepper, rice, etc), together they contribute 6.5% to total exports, and had the smallest contribution to total gross output and GDP (13.8% and 15.8%, respectively).

In the agriculture, forestry and fishery sector, the largest contributors to exports are rubber, fishing, coffee, and aquaculture; while the largest share in total gross output are pig products (1.8%), aquaculture (2.0%), paddy (2.7%), poultry (1.0%) and fishing (1.2%). The largest and shares in GDP are paddy (4.2%), aquaculture (1.7%) and fisheries (1.1%).

In the industrial sector, textile and footwear, food processing and crude petroleum had relatively important shares in exports (20.1%, 17.8% and 7.3%, respectively) followed by garments (9.6%), communication equipment (9.4%), grain mill products, starches and starch products (5.4%), computer, electronic products (3.6%), fabricated metal products, except machinery and equipment (3.3%) and furniture (3.3%). Crude petroleum's share in total exports was relatively high at 7.2%, while its import value accounted for 10.4% of total imports.

The sectors that have the highest ratio between the export-to-import share are garments (9.6/0.3%), crude petroleum (7.3/1.3%), communication equipment (9.4/3.9%), grain milling products, starches and starch products (5.4/0.2%) and footwear (5.3/0.2%). On the other hand, the sectors with the highest ratio between the import to export share are refined petroleum products (10.36/0.01%), iron and steel (5.5/0.7%), standing timber (4.4/0.6%), plastic and synthetic rubber in primary forms (4.1/0.4%), and textiles (5.6/2.7%).

In the service sector, wholesales and retails trade contribute most to GDP (10.1%), followed by the real estate (3.4%), financial intermediation

services, except insurance and pension funding (3.6%) and education services except tertiary education services (3.3%).

Thus, the export structure of Vietnam is still dominated by natural resources or labour-intensive with more than 63%. The country's manufacturing industry, meanwhile, is still heavily dependent on imported inputs.

Table 3: Basic indicators by sector (shares)

Sectors	Gross output	GDP (prod pr.)	Import	Export
Total	100.00	100.00	100.00	100.00
Agriculture, Forestry & Fishery	13.81	15.81	8.34	6.45
<i>Crops</i>	6.61	10.24	3.35	3.92
Paddy	2.70	4.16	0.03	0.00
Maize & other cereals	0.30	0.48	1.17	0.01
Edible roots & high-starch tubers	0.26	0.45	0.21	0.11
Oleaginous vegetable seeds	0.15	0.23	0.16	0.01
Sugar cane	0.20	0.22	0.00	0.00
Vegetables & beans	0.76	1.03	0.07	0.09
Flowers & bonsais	0.11	0.14	0.02	0.03
Other non-perennial crops	0.14	0.26	0.77	0.04
Fruits	0.63	0.75	-	0.33
Cashew nuts	0.07	0.12	0.69	0.13
Peppers	0.14	0.30	0.01	0.46
Natural rubber	0.52	1.09	0.20	1.88
Coffee beans	0.55	0.85	-	0.83
Tea leaves	0.05	0.09	-	-
Other perennial crops	0.05	0.07	0.02	0.00
<i>Livestock</i>	3.68	2.33	0.56	0.12
Products of buffaloes & cows	0.26	0.32	0.03	0.00
Products of pigs	1.77	0.78	0.01	0.05
Products of poultry	1.03	0.35	0.05	0.05
Other farm animal products	0.12	0.15	0.00	0.00
Agricultural services	0.49	0.72	-	-
Other agricultural services n.e.c	0.01	0.01	0.47	0.02
<i>Forestry</i>	0.30	0.46	4.40	0.60
Live forest tree plants, forest tree seeds	0.03	0.07	-	-
St&king timber	0.16	0.15	4.40	0.60
Wild growing non-wood products exploited & collected	0.09	0.21	-	-
Support services to forestry	0.02	0.03	-	-
<i>Fishery</i>	3.21	2.78	0.02	1.81
Fishing	1.24	1.07	0.02	1.23
Aquaculture	1.98	1.72	0.00	0.58
Industry & Construction	62.54	45.17	85.31	85.80
<i>Mining</i>	5.41	7.27	3.13	10.11
Hard coal & lignite	0.81	0.54	0.16	2.41
Crude petroleum	3.02	4.58	1.33	7.25
Natural gas in liquefied or gaseous state	1.12	1.58	0.46	0.01
Metal ores	0.11	0.11	0.29	0.17
Stone, sand & clay	0.17	0.14	0.05	0.06
Other mining & quarrying products n.e.c	0.06	0.08	0.83	0.22
Support services to mining & quarrying	0.13	0.23	-	-
<i>Food processing</i>	13.21	5.26	5.63	17.84

Sectors	Gross output	GDP (prod pr.)	Import	Export
Processed & preserved meat & meat products	1.05	0.47	0.37	1.28
Processed & preserved fish, crustaceans & molluscs	2.38	0.83	0.46	5.09
Processed & preserved vegetables & fruits	0.53	0.15	0.16	1.19
Vegetables & animal oils & fats	0.40	0.11	0.97	0.10
Dairy products	0.75	0.36	0.84	0.19
Grain mill products, starches & starch products	3.84	0.67	0.17	5.35
Sugar & molasses	0.28	0.15	0.05	0.08
Cocoa, chocolate, & sugar confectionary	0.39	0.22	0.11	1.06
Coffee	0.20	0.09	0.02	0.56
Tea	0.07	0.03	0.00	0.06
Other food products	0.70	0.40	0.34	0.46
Prepared animal feeds	1.62	0.55	1.89	1.38
Wine	0.11	0.11	0.03	0.12
Beer	0.36	0.70	0.00	0.26
Non-alcoholic beverages, mineral water	0.31	0.29	0.01	0.44
Tobacco products	0.23	0.13	0.22	0.22
Textiles & footwear	8.07	7.43	8.41	20.07
Textiles	1.45	0.69	5.57	2.66
Other textiles	0.37	0.18	1.40	0.40
Wearing apparel	3.26	3.45	0.29	9.64
Tanned & dressed leather, dressed & dyed fur, & related products	1.31	1.28	0.93	2.10
Footwear	1.68	1.82	0.21	5.28
Other manufacturings	28.92	19.09	68.15	37.77
Wood, products of wood & cork, except furniture; articles of straw & plaiting materials	1.20	0.41	0.19	0.80
Paper & paper products	0.95	0.56	1.09	0.36
Printing & recording services	0.36	0.23	0.03	-
Coke oven products	0.05	0.03	0.03	0.03
Refined petroleum products	2.65	0.81	10.36	0.01
Other petroleum products	0.01	0.02	0.42	0.03
Basic chemicals	0.42	0.33	2.13	0.36
Fertilizers & nitrogen products	0.73	0.52	1.30	0.44
Plastic & synthetic rubber in primary forms	0.12	0.06	4.10	0.42
Pesticides & other agrochemical products	0.10	0.04	0.54	0.09
Other chemical products, man-made fibres	0.75	0.27	2.21	0.67
Basic pharmaceutical products, pharmaceutical preparations	0.39	0.37	1.67	0.07
Rubber products	0.65	0.37	0.56	0.61
Plastic products	1.39	0.80	0.84	2.50
Glass & glass products	0.16	0.16	0.36	0.21
Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth	0.40	0.43	0.04	0.23
Cements	0.66	0.61	0.02	0.44
Other non-metallic mineral products n.e.c	0.54	0.47	0.25	1.29

Sectors	Gross output	GDP (prod pr.)	Import	Export
Products of iron & steel	1.28	0.97	5.47	0.72
Colour & precious metals, casting services of metals	0.46	0.20	2.46	0.43
Fabricated metal products, except machinary an equipm	2.17	1.33	5.82	3.33
Computer, electronic products	1.01	0.51	5.52	3.59
Communication equipm	2.32	1.45	3.87	9.40
Consumer electronics	0.43	0.29	0.32	1.38
Measuring, testing & navigating equipm, watches & clocks irradiation, electromedical/therapeutic equipm	0.19	0.13	0.64	0.16
Electric motors, generators, transformers, electricity distribution & control apparatus	0.37	0.20	1.09	1.32
Batteries & accumulators	0.46	0.13	0.44	0.39
Wiring & wiring devices	0.60	0.27	0.55	0.42
Electric lighting equipm	0.12	0.04	0.15	0.10
Domestic appliances	0.16	0.07	0.44	0.19
Other electrical equipm	0.12	0.05	2.41	0.41
General purpose machinary	0.29	0.18	3.17	0.73
Special purpose machinary	0.26	0.11	4.10	0.46
Motor vehicles	0.48	0.19	0.51	-
Trailers & semi-trailers	0.28	0.14	0.14	0.10
Ships & boats	0.17	0.11	0.13	0.56
Motorcycles	0.89	0.29	0.03	0.38
Other transport equipm	0.64	0.39	0.98	0.05
Furniture	2.05	1.23	0.07	3.31
Jewellery, bijouterie & related articles, musical instruments; sport goods; games & toys	0.23	0.15	0.34	0.79
Medical & dental instruments & supplies	0.12	0.12	0.49	0.27
Manufactured goods n.e.c	0.26	0.19	2.75	0.71
Repair & installation services of machinary & equipm	0.50	0.53	-	-
Electricity generation & distribution	1.19	2.69	0.12	0.02
Manufactured gas; distribution services of gaseous fuel through mains	0.05	0.13	-	-
Steam & air conditioning supply services	0.03	0.04	-	-
Natural water; treatment, distribution & trade services of water through mains	0.13	0.20	-	-
Sewerage services	0.03	0.04	-	-
Waste collection, treatment & disposal services, material recovery services	0.13	0.22	-	-
Remediation services & other waste management services	0.00	0.01	-	-
Construction	6.93	6.13	-	-
Residential buildings & construction works for residential buildings	2.53	2.21	-	-

Sectors	Gross output	GDP (prod pr.)	Import	Export
Non-residential buildings & construction works for non-residential buildings	1.46	1.33	-	-
Railways, construction works for railways	0.05	0.04	-	-
Roads, construction works for roads	1.13	1.05	-	-
Construction works for utility projects	0.81	0.81	-	-
Specialized construction works	0.95	0.68	-	-
Services	23.64	39.01	6.35	7.75
Trade services of motor vehicles & motorcycles	0.21	0.40	-	-
Maintenance & repair services of motor vehicles	0.18	0.20	0.05	0.02
Wholesale & retail trade	5.23	10.13	-	-
Passenger rail transport services	0.03	0.06	0.04	0.03
Freight rail transport services	0.02	0.02	-	-
Other passenger land transport services	0.50	0.67	0.02	0.06
Freight transport services by road, transport services via pipeline	1.05	0.94	-	-
Sea & coastal, int. passenger water transport services	0.04	0.03	-	0.01
Sea & coastal, int. freight water transport services	0.52	0.35	-	-
Passenger air transport services	0.50	0.38	0.43	0.70
Freight air transport service	0.09	0.07	-	-
Warehousing & support services for transportation	0.91	1.40	-	1.03
Postal & courier services	0.08	0.19	0.19	0.25
Accommodation services	0.38	0.66	0.35	1.00
Food & beverage serving service	2.25	2.34	0.36	2.83
Publishing	0.11	0.08	0.07	0.02
Motion picture, video & television programme production services, sound recording & music publishing	0.04	0.05	-	-
Programming & broadcasting services	0.06	0.09	0.20	0.06
Telecommunications services	1.13	0.95	-	-
Information technology service	0.15	0.29	-	-
Information services	0.02	0.05	0.02	-
Financial intermediation services, except insurance & pension funding	2.09	3.55	1.63	0.56
Life insurance & reinsurance services	0.16	0.34	-	0.04
Non-life insurance & reinsurance services	0.11	0.23	0.71	0.03
Other financial services	0.10	0.20	-	-
Real estate services	1.55	3.36	0.12	0.01
Legal & accounting services	0.07	0.16	0.09	0.01
Services of head offices; management consulting service	0.09	0.18	-	-
Architectural & engineering services; technical testing & analysis services	0.42	0.76	0.10	0.14
Scientific research & development services	0.11	0.18	0.08	0.02
Advertising & market research services	0.30	0.38	0.11	-

Sectors	Gross output	GDP (prod pr.)	Import	Export
Other professional, scientific & technical services	0.10	0.20	0.07	0.01
Veterinary services	0.01	0.02	-	-
Renting & leasing services of mach & equipm, renting & leasing services of personal & household goods	0.09	0.14	-	-
Employment services	0.04	0.08	-	-
Travel agency, tour operator & other reservation services & related services	0.09	0.16	0.28	0.24
Security & investigation services	0.05	0.12	-	-
Services to buildings & landscape	0.04	0.08	-	-
Office administrative, office support & other business support services	0.10	0.10	-	-
Services of communist party, social-political org, pub admin & defence serv; compulsory social sec serv	1.25	2.86	-	-
Education services except tertiary education services	1.34	3.34	0.08	0.04
Tertiary education services	0.24	0.56	0.83	0.25
Human health services	0.91	1.16	0.36	0.23
Residential care services	0.03	0.06	-	-
Social work services without accommodation	0.01	0.03	-	-
Creative, arts & entertainment services	0.03	0.04	0.10	0.05
Library, archive, museum & other cultural services	0.01	0.03	-	-
Gambling & betting services	0.30	0.49	-	-
Sporting services & amusement & recreation service	0.11	0.22	0.07	0.11
Services of other organizations & associations	0.07	0.15	-	-
Repair services of computers & personal & household goods	0.08	0.11	-	-
Other personal services	0.21	0.31	-	-
Services of households as employers; undifferentiated goods & serv produced by households for own use	0.04	0.10	-	-

Source: 2012 SAM

Table 4 presents indirect taxes by industry (activity tax) or commodity in the 2012 SAM, in which column 1 shows activity tax (collected) as a ratio of total gross output by industry; column 2 sales tax (collected) as a proportion of total value of domestic consumption by commodity; column 3 the ratio of import duties (collected) to total value of imports. The highest import tax (collection) rates are observed for textiles (16.0%), refined petroleum products (4.8%), tanned and dressed leather, dressed and dyed fur, and related products (4.5%), motor vehicles (4.4%) and plastic products (4.0%).

Table 4: Indirect taxes in the 2012 SAM (rates)

Sectors	Activity tax	Sale tax	Import tax
Total	100.00	100.00	100.00
Agriculture, Forestry & Fishery	4.86	6.98	8.34
<i>Crops</i>	2.63	1.80	6.32
Paddy	0.72	0.12	-
Maize & other cereals	0.05	0.02	1.32
Edible roots & high-starch tubers	0.09	0.03	0.39
Oleaginous vegetable seeds	0.05	0.01	0.03
Sugar cane	0.01	0.02	-
Vegetables & beans of kinds	0.55	0.15	0.46
Flowers & bonsais	0.10	0.03	0.08
Other non-perennial crops	0.09	0.03	2.96
Fruits	0.21	0.24	-
Cashew nuts	0.00	0.02	0.41
Peppers	0.03	0.01	0.46
Natural rubber	0.21	0.53	0.17
Coffee beans	0.47	0.47	-
Tea leaves	0.03	0.04	-
Other perennial crops	0.01	0.08	0.03
<i>Livestock</i>	1.32	2.54	1.67
Products of buffaloes & cows	0.01	0.20	0.14
Products of pigs	0.55	1.33	0.03
Products of poultry	0.21	0.73	0.38
Other farm animal products	0.05	0.04	0.01
Agricultural services	0.49	0.23	-
Other agricultural services n.e.c	0.00	0.01	1.11
<i>Forestry</i>	0.44	0.44	0.31
Live forest tree plants, forest tree seeds	0.01	0.03	-
St&ing timber	0.39	0.33	0.31
Wild growing non-wood products exploited & collected	0.03	0.07	-
Support services to forestry	0.01	0.01	-
<i>Fishery</i>	0.47	2.20	0.04
Fishing	0.20	1.22	0.04
Aquaculture	0.27	0.98	0.00
Industry & Construction	35.40	52.56	91.42
<i>Mining</i>	7.89	9.10	1.42
Hard coal & lignite	4.63	1.72	0.08
Crude petroleum	2.12	3.23	0.49
Natural gas in liquefied or gaseous state	0.67	2.40	0.66
Metal ores	0.11	0.55	0.02
Stone, sand & clay	0.32	0.98	0.03
Other mining & quarrying products n.e.c	0.04	0.20	0.15
Support services to mining & quarrying	0.01	0.01	-
<i>Processing</i>	2.76	3.45	9.09
Processed & preserved meat & meat products	0.10	0.33	0.15

Sectors	Activity tax	Sale tax	Import tax
Processed & preserved fish, crustaceans & molluscs	0.39	0.49	1.48
Processed & preserved vegetables & fruits	0.02	0.07	0.93
Vegetables & animal oils & fats	0.01	0.13	0.97
Dairy products	0.54	0.78	0.41
Grain mill products, starches & starch products	0.16	0.10	0.44
Sugar & molasses	0.01	0.01	0.21
Cocoa, chocolate, & sugar confectionary	0.22	0.33	0.67
Coffee	0.03	0.04	0.11
Tea	0.00	0.02	0.06
Other food products	0.06	0.11	0.99
Prepared animal feeds	0.02	0.10	0.22
Wine	0.08	0.03	0.53
Beer	0.96	0.59	0.03
Non-alcoholic beverages, mineral water	0.12	0.27	0.10
Tobacco products	0.02	0.03	1.81
Textiles & footwaer	5.49	2.19	25.74
Textiles	0.04	0.14	16.04
Other textiles	0.03	0.10	4.45
Wearing apparel	1.10	0.68	1.73
Tanned & dressed leather, dressed & dyed fur, & related products	0.35	0.43	2.24
Footwear	3.98	0.84	1.28
Other manufaturings	18.81	35.69	55.17
Wood, products of wood & cork, except furniture; articles of straw & plaiting materials	0.06	0.26	0.05
Paper & paper products	0.06	0.23	3.21
Printing & recording services	0.02	0.06	0.05
Coke oven products	0.00	0.01	0.01
Refined petroleum products	1.72	2.57	4.77
Other petroleum products	0.00	0.00	0.05
Basic chemicals	0.37	0.39	0.55
Fertilizers & nitrogen products	0.45	0.69	0.25
Plastic & synthetic rubber in primary forms	0.07	0.17	0.55
Pesticides & other agrochemical products	0.14	0.25	0.15
Other chemical products, man-made fibres	0.36	0.64	2.63
Basic pharmaceutical products, pharmaceutical preparations	0.08	0.54	0.04
Rubber products	0.26	0.52	1.38
Plastic products	0.28	1.02	3.95
Glass & glass products	0.10	0.04	0.96
Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth	0.33	0.34	0.38

Sectors	Activity tax	Sale tax	Import tax
Cements	1.40	0.47	0.18
Other non-metallic mineral products n.e.c	0.89	0.19	0.96
Products of iron & steel	0.26	0.17	3.15
Colour & precious metals, casting services of metals	0.18	0.10	0.94
Fabricated metal products, except machinary an equipm	1.44	1.14	3.37
Computer, electronic products	0.11	3.45	3.05
Communication equipm	0.64	6.12	0.01
Consumer electronics	0.21	2.04	1.21
Measuring, testing & navigating equipm, watches & clocks irradiation, electromedical/therapeutic equipm	0.13	0.08	0.05
Electric motors, generators, transformers, electricity distribution & control apparatus	0.92	0.38	0.79
Batteries & accumulators	0.02	0.03	0.11
Wiring & wiring devices	0.21	0.04	0.44
Electric lighting equipm	0.02	0.00	0.15
Domestic appliances	0.01	0.02	2.58
Other electrical equipm	0.10	0.15	2.45
General purpose machinary	0.24	0.44	1.95
Special purpose machinary	0.40	0.07	0.87
Motor vehicles	2.59	4.81	4.44
Trailers & semi-trailers	0.09	0.88	1.53
Ships & boats	0.10	0.15	0.03
Motorcycles	0.49	1.27	1.12
Other transport equipm	0.01	0.33	0.28
Furniture	1.88	1.97	0.23
Jewellery, bijouterie & related articles, musical instruments; sport goods; games & toys	0.09	0.29	0.37
Medical & dental instruments & supplies	0.10	0.05	0.04
Manufactured goods n.e.c	0.02	0.46	5.91
Repair & installation services of machinary & equipm	0.17	0.20	-
Electricity generation & distribution	1.26	2.17	0.01
Manufactured gas; distribution services of gaseous fuel through mains	0.10	0.02	-
Steam & air conditioning supply services	0.13	0.02	-
Natural water; treatment, distribution & trade services of water through mains	0.22	0.34	-
Sewerage services	0.01	0.02	-
Waste collection, treatment & disposal services, material recovery services	0.05	0.09	-
Remediation services & other waste management services	0.00	0.00	-
Construction	0.45	2.14	-

Sectors	Activity tax	Sale tax	Import tax
Residential buildings & construction works for residential buildings	0.08	0.70	-
Non-residential buildings & construction works for non-residential buildings	0.11	0.40	-
Railways, construction works for railways	0.00	0.02	-
Roads, construction works for roads	0.07	0.42	-
Construction works for utility projects	0.13	0.34	-
Specialized construction works	0.05	0.26	-
Services	59.74	40.45	0.23
Trade services of motor vehicles & motorcycles	0.08	0.14	-
Maintenance & repair services of motor vehicles	0.06	0.13	-
Wholesale & retail trade	3.94	-	-
Passenger rail transport services	0.14	0.09	-
Freight rail transport services	0.06	-	-
Other passenger land transport services	0.45	0.68	-
Freight transport services by road, transport services via pipeline	1.06	-	-
Sea & coastal, int. passenger water transport services	0.01	0.04	-
Sea & coastal, int. freight water transport services	0.10	-	-
Passenger air transport services	0.04	0.06	-
Freight air transport service	0.00	-	-
Warehousing & support services for transportation	2.55	0.40	-
Postal & courier services	0.15	0.01	-
Accommodation services	0.59	0.21	-
Food & beverage serving service	5.40	0.35	-
Publishing	0.09	0.01	0.23
Motion picture, video & television programme production services, sound recording & music publishing	0.01	0.07	-
Programming & broadcasting services	0.78	0.20	-
Telecommunications services	0.21	4.24	-
Information technology service	0.06	0.90	-
Information services	0.00	0.09	-
Financial intermediation services, except insurance & pension funding	16.65	1.80	-
Life insurance & reinsurance services	0.10	0.90	-
Non-life insurance & reinsurance services	0.31	0.83	-
Other financial services	0.17	0.10	-
Real estate services	21.61	20.14	-
Legal & accounting services	0.02	0.09	-
Services of head offices; management consulting service	0.03	0.25	-
Architectural & engineering services; technical testing &	0.16	0.86	-

Sectors	Activity tax	Sale tax	Import tax
analysis services			
Scientific research & development services	0.34	0.38	-
Advertising & market research services	0.00	0.15	-
Other professional, scientific & technical services	0.02	0.06	-
Veterinary services	0.00	0.01	-
Renting & leasing services of mach & equipm, renting & leasing services of personal & household goods	0.63	0.24	-
Employment services	0.00	0.12	-
Travel agency, tour operator & other reservation services & related services	0.21	0.29	-
Security & investigation services	0.00	0.01	-
Services to buildings & landscape	0.02	0.03	-
Office administrative, office support & other business support services	0.02	0.03	-
Services of communist party, social-political org, pub admin & defence serv; compulsory social sec serv	0.55	0.44	-
Education services except tertiary education services	0.29	0.29	-
Tertiary education services	0.15	0.23	-
Human health services	0.23	0.49	-
Residential care services	0.00	0.01	-
Social work services without accommodation	0.00	0.00	-
Creative, arts & entertainment services	0.01	0.02	-
Library, archive, museum & other cultural services	0.01	0.02	-
Gambling & betting services	1.92	4.36	-
Sporting services & amusement & recreation service	0.21	0.39	-
Services of other organizations & associations	0.12	0.13	-
Repair services of computers & personal & household goods	0.10	0.10	-
Other personal services	0.05	0.06	-
Services of households as employers; undifferentiated goods & serv produced by households for own use	0.01	0.01	-

Source: 2012 SAM

2. Value added and income distribution

Table 5 presents the structure of added value by factor of production (capital and labour) in total added value of each industry (columns 2-3), in which a row total of these two columns is 100%. Columns 4-8 report the share of labour, of which column 3 is total, and column 4, 5 are in urban and rural areas, and column 6-8 are in education level (primary, secondary and above tertiary) respectively. The contribution of land only applies to agricultural sub-sectors.

Overall, Table 5 shows that labour factor contributed the largest share to

the added value of the whole economy (71.1%) while the rest is appropriated by capital (28.9%). Rural workers contribute more than urban to the value added (46% versus 25.1%). Meanwhile, labour with above tertiary education creates the most added value (47.2%), followed by secondary (43.8%), and the contribution of primary labour accounts for a relatively a small share (9%). The agricultural sector is most labour intensive, especially crops and forestry sub-sectors report shares of over 90%.

Table 5: Structure of added value by factor and industry in SAM 2012 (%)

Sectors	Capital	Labor					
		<i>Total</i>	<i>Region</i>		<i>Education level</i>		
			<i>Urban</i>	<i>Rural</i>	<i>Above Tertiary</i>	<i>Secondary</i>	<i>Primary</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overall	28.90	71.10	35.36	64.64	47.22	43.81	8.97
Agriculture, Forestry and Fishery	31.36	68.64	9.69	90.31	17.52	63.68	18.79
Crops	35.33	64.67	7.32	92.68	12.13	67.20	20.68
Paddy	36.30	63.70	7.32	92.68	12.13	67.20	20.68
Maize & other cereals	27.27	72.73	7.32	92.68	12.13	67.20	20.68
Edible roots & high-starch tubers	47.38	52.62	7.32	92.68	12.13	67.20	20.68
Oleaginous vegetable seeds	63.81	36.19	7.32	92.68	12.13	67.20	20.68
Sugar cane	1.41	98.59	7.32	92.68	12.13	67.20	20.68
Vegetables & beans	24.33	75.67	7.32	92.68	12.13	67.20	20.68
Flowers & bonsais	29.13	70.87	7.32	92.68	12.13	67.20	20.68
Other non-perennial crops	15.64	84.36	7.32	92.68	12.13	67.20	20.68
Fruits	35.10	64.90	7.32	92.68	12.13	67.20	20.68
Cashew nuts	84.11	15.89	7.32	92.68	12.13	67.20	20.68
Peppers	71.34	28.66	7.32	92.68	12.13	67.20	20.68
Natural rubber	12.17	87.83	7.32	92.68	12.13	67.20	20.68
Coffee beans	23.77	76.23	7.32	92.68	12.13	67.20	20.68
Tea leaves	26.10	73.90	7.32	92.68	12.13	67.20	20.68
Other perennial crops	32.01	67.99	7.32	92.68	12.13	67.20	20.68
Livestock	42.65	57.35	7.78	92.22	20.96	64.18	14.86
Products of buffaloes & cows	71.75	28.25	7.33	92.67	22.22	67.14	10.64
Products of pigs	35.92	64.08	7.33	92.67	22.22	67.14	10.64
Products of poultry	30.65	69.35	7.33	92.67	22.22	67.14	10.64
Other farm animal products	73.77	26.23	7.33	92.67	22.22	67.14	10.64
Agricultural services	9.30	90.70	9.04	90.96	17.44	55.91	26.65
Other agricultural services n.e.c	34.48	65.52	7.33	92.67	22.22	67.14	10.64

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Forestry	27.59	72.41	11.32	88.68	20.53	58.10	21.38
Live forest tree plants, forest tree seeds	8.83	91.17	7.33	92.67	22.22	67.14	10.64
St&ing timber	26.90	73.10	7.33	92.67	22.22	67.14	10.64
Wild growing non-wood products exploited and collected	51.53	48.47	21.65	78.35	0.00	32.09	67.91
Support services to forestry	23.11	76.89	13.35	86.65	29.85	55.18	14.97
Fishery	19.88	80.12	11.48	88.52	16.70	65.54	17.75
Fishing	14.22	85.78	7.33	92.67	22.22	67.14	10.64
Aquaculture	25.55	74.45	16.26	83.74	10.35	63.70	25.95
Industry and Construction	28.93	71.07	40.45	59.55	49.66	45.32	5.01
Mining	31.54	68.46	57.59	42.41	64.39	34.10	1.51
Hard coal & lignite	16.30	83.70	71.53	28.47	67.08	32.92	0.00
Crude petroleum	67.39	32.61	80.00	20.00	90.54	9.46	0.00
Natural gas in liquefied or gaseous state	11.62	88.38	80.00	20.00	90.54	9.46	0.00
Metal ores	49.34	50.66	37.86	62.14	44.92	54.10	0.97
Stone, sand & clay	32.47	67.53	24.57	75.43	27.14	68.13	4.73
Other mining & quarrying products n.e.c	25.16	74.84	24.57	75.43	27.14	68.13	4.73
Support services to mining & quarrying	18.52	81.48	80.00	20.00	100.00	0.00	0.00
Processing	36.25	63.75	32.75	67.25	34.84	52.84	12.32
Processed & preserved meat & meat products	18.46	81.54	36.62	63.38	38.84	48.05	13.11
Processed & preserved fish, crustaceans & molluscs	23.82	76.18	36.62	63.38	38.84	48.05	13.11
Processed & preserved vegetables & fruits	18.33	81.67	36.62	63.38	38.84	48.05	13.11
Vegetables & animal oils & fats	21.42	78.58	36.62	63.38	38.84	48.05	13.11
Dairy products	57.69	42.31	36.62	63.38	38.84	48.05	13.11
Grain mill products, starches & starch products	53.66	46.34	36.62	63.38	38.84	48.05	13.11
Sugar & molasses	33.52	66.48	36.62	63.38	38.84	48.05	13.11
Cocoa, chocolate, & sugar confectionary	31.67	68.33	36.62	63.38	38.84	48.05	13.11
Other food products	34.88	65.12	36.62	63.38	38.84	48.05	13.11
Coffee	61.01	38.99	36.62	63.38	38.84	48.05	13.11

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Tea	28.15	71.85	36.62	63.38	38.84	48.05	13.11
Prepared animal feeds	17.93	82.07	36.62	63.38	38.84	48.05	13.11
Wine	27.43	72.57	26.98	73.02	29.32	57.02	13.66
Beer	82.19	17.81	26.98	73.02	29.32	57.02	13.66
Non-alcoholic beverages, mineral water	37.34	62.66	26.98	73.02	29.32	57.02	13.66
Tobacco products	32.42	67.58	0.00	100.00	0.00	100.00	0.00
<i>Textiles and footwaer</i>	24.74	75.26	35.12	64.88	35.32	60.45	4.23
Textiles	42.03	57.97	39.83	60.17	43.70	55.21	1.09
Other textiles	23.62	76.38	39.83	60.17	43.70	55.21	1.09
Wearing apparel	18.86	81.14	36.94	63.06	41.71	55.39	2.91
Tanned & dressed leather, dressed & dyed fur, & related products	23.30	76.70	30.26	69.74	25.09	67.38	7.53
Footwear	15.89	84.11	30.26	69.74	25.09	67.38	7.53
<i>Other manufaturings</i>	35.25	64.75	40.52	59.48	61.30	35.54	3.15
Wood, products of wood & cork, except furniture; articles of straw & plaiting materials	17.65	82.35	19.42	80.58	26.78	61.08	12.14
Paper & paper products	37.03	62.97	19.24	80.76	37.24	54.15	8.62
Printing & recording services	20.57	79.43	56.05	43.95	81.54	18.46	0.00
Coke oven products	11.76	88.24	0.00	100.00	0.00	87.29	12.71
Refined petroleum products	52.28	47.72	51.13	48.87	46.63	52.93	0.44
Other petroleum products	51.10	48.90	51.13	48.87	46.63	52.93	0.44
Basic chemicals	58.21	41.79	51.13	48.87	46.63	52.93	0.44
Fertilizers & nitrogen products	54.69	45.31	51.13	48.87	46.63	52.93	0.44
Plastic & synthetic rubber in primary forms	39.87	60.13	51.13	48.87	46.63	52.93	0.44
Pesticides & other agrochemical products	25.17	74.83	51.13	48.87	46.63	52.93	0.44
Other chemical products, man-made fibres	30.95	69.05	51.13	48.87	46.63	52.93	0.44
Basic pharmaceutical products, pharmaceutical preparations	28.95	71.05	58.47	41.53	83.86	13.30	2.84
Rubber products	48.36	51.64	32.14	67.86	52.69	46.82	0.49
Plastic products	32.59	67.41	32.14	67.86	52.69	46.82	0.49
Glass & glass products	60.06	39.94	30.56	69.44	40.83	51.96	7.21
Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth	26.34	73.66	30.56	69.44	40.83	51.96	7.21

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Cements	51.73	48.27	30.56	69.44	40.83	51.96	7.21
Other non-metallic mineral products n.e.c	31.77	68.23	30.56	69.44	40.83	51.96	7.21
Products of iron & steel	50.13	49.87	44.47	55.53	51.63	35.72	12.65
Colour & precious metals, casting services of metals	48.09	51.91	44.47	55.53	51.63	35.72	12.65
Fabricated metal products, except machinaria an equipm	30.38	69.62	35.93	64.07	51.67	47.85	0.48
Computer, electronic products	32.81	67.19	23.74	76.26	64.64	35.36	0.00
Communication equipm	82.65	17.35	48.68	51.32	70.76	29.24	0.00
Consumer electronics	45.33	54.67	48.68	51.32	70.76	29.24	0.00
Measuring, testing & navigating equipm, watches & clocks irradiation, electromedical/therapeutic equipm	30.13	69.87	48.68	51.32	70.76	29.24	0.00
Electric motors, generators, transformers, electricity distribution & control apparatus	25.71	74.29	39.16	60.84	83.68	16.32	0.00
Batteries & accumulators	29.97	70.03	39.16	60.84	83.68	16.32	0.00
Wiring & wiring devices	24.08	75.92	39.16	60.84	83.68	16.32	0.00
Electric lighting equipm	11.18	88.82	39.16	60.84	83.68	16.32	0.00
Domestic appliances	18.91	81.09	39.16	60.84	83.68	16.32	0.00
Other electrical equipm	31.60	68.40	39.16	60.84	83.68	16.32	0.00
General purpose machinairy	20.15	79.85	39.16	60.84	83.68	16.32	0.00
Special purpose machinairy	28.23	71.77	39.16	60.84	83.68	16.32	0.00
Motor vehicles	43.46	56.54	27.64	72.36	83.21	14.90	1.90
Trailers & semi-trailers	28.30	71.70	32.10	67.90	76.26	23.74	0.00
Ships & boats	19.51	80.49	27.64	72.36	83.21	14.90	1.90
Motorcycles	34.48	65.52	27.64	72.36	83.21	14.90	1.90
Other transport equipm	5.04	94.96	25.28	74.72	86.89	10.21	2.90
Furniture	16.76	83.24	25.54	74.46	27.79	64.05	8.16
Jewellery, bijouterie & related articles, musical instruments; sport goods; games & toys	12.40	87.60	41.99	58.01	36.60	52.41	10.99
Medical & dental instruments & supplies	42.99	57.01	41.99	58.01	36.60	52.41	10.99
Manufactured goods n.e.c	17.08	82.92	41.99	58.01	36.60	52.41	10.99
Repair & installation services of machinairy & equipm	11.48	88.52	51.54	48.46	63.81	36.19	0.00

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Electricity generation & distribution	74.95	25.05	62.43	37.57	92.98	4.92	2.10
Manufactured gas; distribution services of gaseous fuel through mains	83.62	16.38	62.43	37.57	92.98	4.92	2.10
Steam & air conditioning supply services	41.03	58.97	67.55	32.45	86.87	13.13	0.00
Natural water; treatment, distribution & trade services of water through mains	53.41	46.59	67.55	32.45	86.87	13.13	0.00
Sewerage services	29.56	70.44	57.45	42.55	100.00	0.00	0.00
Waste collection, treatment & disposal services, material recovery services	20.80	79.20	56.88	43.12	58.23	39.09	2.68
Remediation services & other waste management services	39.41	60.59	80.00	20.00	31.19	68.81	0.00
Construction	16.88	83.12	37.01	62.99	52.82	42.73	4.46
Residential buildings and construction works for residential buildings	15.19	84.81	22.54	77.46	20.72	68.44	10.84
Non-residential buildings and construction works for non-residential buildings	12.29	87.71	22.54	77.46	20.72	68.44	10.84
Railways, construction works for railways	16.88	83.12	44.67	55.33	69.97	28.97	1.06
Roads, construction works for roads	16.32	83.68	44.67	55.33	69.97	28.97	1.06
Construction works for utility projects	21.05	78.95	44.70	55.30	71.95	27.25	0.80
Specialized construction works	19.54	80.46	44.64	55.36	67.31	31.29	1.40
Services	26.41	73.59	54.38	45.62	72.57	23.81	3.62
Trade services of motor vehicles & motorcycles	17.03	82.97	47.27	52.73	52.13	42.27	5.61
Maintenance & repair services of motor vehicles	14.73	85.27	47.27	52.73	52.13	42.27	5.61
Wholesale & retail trade	32.71	67.29	42.75	57.25	40.06	51.52	8.43
Passenger rail transport services	11.80	88.20	45.86	54.14	40.73	53.06	6.20
Freight rail transport services	88.24	11.76	45.86	54.14	40.73	53.06	6.20
Other passenger land transport services	25.89	74.11	45.86	54.14	40.73	53.06	6.20
Freight transport services by road, transport services via pipeline	32.16	67.84	45.54	54.46	36.84	56.92	6.24

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Sea & coastal, int. passenger water transport services	35.86	64.14	45.86	54.14	40.73	53.06	6.20
Sea & coastal, int. freight water transport services	47.66	52.34	40.39	59.61	54.78	37.42	7.80
Passenger air transport services	52.44	47.56	45.86	54.14	40.73	53.06	6.20
Freight air transport service	52.39	47.61	72.57	27.43	98.33	1.67	0.00
Warehousing & support services for transportation	40.15	59.85	69.43	30.57	78.39	18.43	3.18
Postal & courier services	24.79	75.21	47.19	52.81	93.13	6.87	0.00
Accommodation services	38.98	61.02	66.56	33.44	74.20	22.02	3.78
Food & beverage serving service	26.86	73.14	51.60	48.40	28.38	58.05	13.57
Publishing	10.45	89.55	79.33	20.67	99.40	0.60	0.00
Motion picture, video & television programme production services, sound recording & music publishing	16.63	83.37	37.59	62.41	100.00	0.00	0.00
Programming & broadcasting services	36.39	63.61	21.12	78.88	86.72	13.28	0.00
Telecommunications services	56.92	43.08	58.61	41.39	80.80	19.20	0.00
Information technology service	17.20	82.80	74.81	25.19	98.77	0.54	0.69
Information services	21.79	78.21	76.65	23.35	70.37	29.63	0.00
Financial intermediation services, except insurance & pension funding	32.93	67.07	65.96	34.04	95.87	4.13	0.00
Life insurance & reinsurance services	41.73	58.27	72.16	27.84	95.00	5.00	0.00
Non-life insurance & reinsurance services	14.61	85.39	72.16	27.84	95.00	5.00	0.00
Other financial services	43.75	56.25	29.83	70.17	100.00	0.00	0.00
Real estate services	68.94	31.06	69.07	30.93	54.70	43.68	1.63
Legal & accounting services	3.67	96.33	75.81	24.19	100.00	0.00	0.00
Services of head offices; management consulting service	2.15	97.85	39.95	60.05	100.00	0.00	0.00
Architectural & engineering services; technical testing & analysis services	11.38	88.62	51.57	48.43	95.99	3.14	0.87
Scientific research & development services	21.01	78.99	80.00	20.00	100.00	0.00	0.00

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Advertising & market research services	2.73	97.27	78.41	21.59	96.67	3.33	0.00
Other professional, scientific & technical services	16.20	83.80	61.49	38.51	99.42	0.58	0.00
Veterinary services	6.15	93.85	0.00	100.00	40.24	43.76	16.00
Renting & leasing services of mach & equipm, renting & leasing services of personal & household goods	25.39	74.61	56.51	43.49	47.18	52.07	0.75
Employment services	4.42	95.58	39.27	60.73	88.46	11.54	0.00
Travel agency, tour operator & other reservation services & related services	52.65	47.35	56.03	43.97	92.05	7.95	0.00
Security & investigation services	2.64	97.36	66.56	33.44	42.50	48.47	9.03
Services to buildings & landscape	10.98	89.02	71.70	28.30	86.95	13.05	0.00
Office administrative, office support & other business support services	5.01	94.99	63.53	36.47	93.87	4.72	1.41
Services of communist party, social-political org, pub admin & defence serv; compulsory social sec serv	25.86	74.14	54.24	45.76	91.95	7.54	0.52
Education services except tertiary education services	31.74	68.26	46.48	53.52	94.77	4.94	0.28
Tertiary education services	18.27	81.73	46.48	53.52	94.77	4.94	0.28
Human health services	15.30	84.70	56.27	43.73	93.45	6.22	0.34
Residential care services	14.79	85.21	50.04	49.96	81.17	18.83	0.00
Social work services without accommodation	19.15	80.85	59.10	40.90	73.88	26.12	0.00
Creative, arts & entertainment services	18.68	81.32	58.77	41.23	57.77	42.23	0.00
Library, archive, museum & other cultural services	29.38	70.62	61.69	38.31	61.87	38.13	0.00
Gambling & betting services	72.23	27.77	30.66	69.34	9.20	48.49	42.32
Sporting services & amusement & recreation service	24.82	75.18	68.11	31.89	65.12	26.98	7.90
Services of other organizations & associations	23.69	76.31	48.58	51.42	87.73	12.27	0.00

Sectors	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Above Tertiary	Secondary	Primary
Repair services of computers & personal & household goods	21.62	78.38	33.52	66.48	45.44	52.14	2.42
Other personal services	11.12	88.88	46.60	53.40	26.80	66.51	6.69
Services of households as employers; undifferentiated goods & serv produced by households for own use	5.49	94.51	45.23	54.77	11.82	54.48	33.70

Source: 2012 SAM

Table 6 presents the distribution of household income sourced from the production factors as shown in the 2012 SAM. As expected, labour is the main source of household income, followed by capital. Overall, labour contributed 80.5% of the total income of households, while the share of capital is 19.5%.

Rural workers and those with higher skills (tertiary, both in rural and urban areas) generated the largest share of income for households (59.9% and 50.9%, respectively). In urban areas, the contribution of capital in total income is higher than the average level of the whole economy (22.9%). Workers with high education level have a highest share of income for urban households (70.3%). These proportions are even higher for urban non-farm households.

In rural areas, the share of income from capital in total income is 16.9%, lower compared to that of urban households while income from labour is 83.0%. The share of income from capital of non-agricultural households in rural areas is different from that of agricultural households (10.6% and 18.6%, respectively). Labour with medium skilled level creates the biggest proportion of income for households in rural areas (52.1%).

Table 6: Household income structure in the 2012 SAM (%)

Households	Capital	Labor					
		Total	Region		Education level		
			Urban	Rural	Tertiary	Secondary	Primary
Total	19.48	80.52	40.03	59.97	50.91	41.68	7.41
Urban	22.94	77.06	100.00		70.37	25.98	3.63
Farm	29.98	70.02	100.00		33.78	55.60	10.63
Non-farm	21.59	78.41	100.00		76.64	20.92	2.45
Rural	16.99	83.01		100.00	37.90	52.15	9.94
Farm	18.60	81.41		100.00	33.26	56.47	10.27
Non-farm	10.69	89.31		100.00	54.56	36.69	8.74

Source: 2012 SAM

3. The structure of household consumption

Table 7 illustrates the structure of household consumption in the 2012 SAM. Overall, 39.3% of the total household consumption is spent on food while 60.7 % is for non-food. The share of food consumption by rural households in general is higher than that of urban ones. The share of food consumption of farm households is higher than that of non-farm households in urban areas and more or less the same in rural areas.

Table 7: Household consumption in SAM 2012 (%)

Household groups		Food	Non-food	Total
Tổng		39.3	60.7	100
Urban	<i>Farm</i>	Quintile 1	47.6	52.4
		Quintile 2	45.5	54.5
		Quintile 3	39.3	60.7
		Quintile 4	37.9	62.1
		Quintile 5	39.6	60.4
	<i>Non-farm</i>	Quintile 1	56.5	43.5
		Quintile 2	46.6	53.4
		Quintile 3	43.2	56.8
		Quintile 4	39.5	60.5
		Quintile 5	35.2	64.8
Rural	<i>Farm</i>	Quintile 1	51.6	48.4
		Quintile 2	44.1	55.9
		Quintile 3	42.7	57.3
		Quintile 4	37.0	63.0
		Quintile 5	33.0	67.0
	<i>Non-farm</i>	Quintile 1	54.1	45.9
		Quintile 2	47.0	53.0
		Quintile 3	44.4	55.6
		Quintile 4	43.0	57.0
		Quintile 5	36.0	64.0

Source: 2012 SAM

CONCLUSIONS

Vietnam's 2012 SAM has been developed based on the synthesis of information on the Vietnam economy in 2012 from various sources, including the SUT, the state budget, balance of payments data and Vietnam Household Living Standard Survey 2012. The data in the 2012 SUT is based on a new input-output survey for Vietnam in 2012, which reflects the most recent economic structure of the Vietnam economy. In comparison to earlier SAMs, besides updating the information on the structural economy to the year 2012, the 2012 SAM has the most disaggregation level of activities and commodities. This level of disaggregation is in accordance with the disaggregation of SUT, 164 activities and commodities. This will make the 2012 SAM provide useful information for analysis to a wider range of economists.

In particular, since 2012 SAM reflects the most recent structure of the economy, when using together with a previous SAM, especially the 2000 SAM, may uncover structural transformation of the economy during the last decade⁵;

The authors hope this new 2012 SAM will be a useful reference for researchers and policy analysts who would like to understand and carry out analysis on the Vietnam economy.

⁵ See the working paper Growth and structural transformation in Vietnam during the 2000s⁴, from www.wider.unu.edu/publication/growth-and-structural-transformation-viet-nam-during-2000s.

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APPENDICES

Appendix 1 – Mapping between types of taxes in the 2012 SAM and the state budget revenue items

N o.	Types of taxes in the 2012 SAM	Mapping with MoF data on the state budget revenue
1	Activity tax	License tax, natural resource tax (but taken from the 2012 SUT)
2	Sales tax	Value-added tax, special consumption tax on domestic goods and services (but taken from the 2012 SUT)
3	Import tax	Import tax, special consumption tax on imports (but taken from the 2012 SUT)
4	Factor tax	<ul style="list-style-type: none"> - Tax on land-use right transfer and agricultural (land-use) tax for production factor land - tax on transfer of property for the production factor capital
5	Direct tax	<ul style="list-style-type: none"> - Corporate income tax and other tax for enterprises - Individual income tax, and land and housing tax for households

Source: authors' own presentation

Appendix 2 – Codes of the 2012 SAM

Serial No.	Activitiy codes	Commodity codes	Label
1	a_001	c_001	Paddy
2	a_002	c_002	Maize & other cereals
3	a_003	c_003	Edible roots & high-starch tubers
4	a_004	c_004	Oleaginous vegetable seeds
5	a_005	c_005	Sugar cane
6	a_006	c_006	Vegetables & beans
7	a_007	c_007	Flowers & bonsais
8	a_008	c_008	Other non-perennial crops
9	a_009	c_009	Fruits
10	a_010	c_010	Cashew nuts
11	a_011	c_011	Peppers
12	a_012	c_012	Natural rubber
13	a_013	c_013	Coffee beans
14	a_014	c_014	Tea leaves
15	a_015	c_015	Other perennial crops
16	a_016	c_016	Products of buffaloes & cows
17	a_017	c_017	Products of pigs
18	a_018	c_018	Products of poultry
19	a_019	c_019	Other farm animal products
20	a_020	c_020	Agricultural services

Serial No.	Activity codes	Commodity codes	Label
21	a_021	c_021	Other agricultural services n.e.c
22	a_022	c_022	Live forest tree plants, forest tree seeds
23	a_023	c_023	St&ing timber
24	a_024	c_024	Wild growing non-wood products exploited & collected
25	a_025	c_025	Support services to forestry
26	a_026	c_026	Live fish, freshwater, marine, not farmed
27	a_027	c_027	Live fish, freshwater, marine, farmed
28	a_028	c_028	Hard coal and lignite
29	a_029	c_029	Crude petroleum
30	a_030	c_030	Natural gas in liquefied or gaseous state
31	a_031	c_031	Metal ores
32	a_032	c_032	Stone, sand and clay
33	a_033	c_033	Other mining and quarrying products n.e.c
34	a_034	c_034	Support services to mining and quarrying
35	a_035	c_035	Processed and preserved meat and meat products
36	a_036	c_036	Processed and preserved fish, crustaceans and molluscs
37	a_037	c_037	Processed and preserved vegetables and fruits
38	a_038	c_038	Vegetables and animal oils and fats
39	a_039	c_039	Dairy products
40	a_040	c_040	Grain mill products, starches and starch products
41	a_041	c_041	Sugar and molasses
42	a_042	c_042	Cocoa, chocolate and sugar confectionary
43	a_043	c_043	Coffee
44	a_044	c_044	Tea
45	a_045	c_045	Other food products
46	a_046	c_046	Prepared animal feeds
47	a_047	c_047	Wine
48	a_048	c_048	Beer
49	a_049	c_049	Non-alcoholic beverages, mineral water
50	a_050	c_050	Tobacco products
51	a_051	c_051	Textiles
52	a_052	c_052	Other textiles
53	a_053	c_053	Wearing apparel
54	a_054	c_054	Tanned and dressed leather, dressed and dyed fur, and related products
55	a_055	c_055	Footwear
56	a_056	c_056	Wood, products of wood and cork, except furniture; articles of straw and plaiting materials
57	a_057	c_057	Paper and paper products
58	a_058	c_058	Printing and recording services
59	a_059	c_059	Coke oven products
60	a_060	c_060	Refined petroleum products

Serial No.	Activity codes	Commodity codes	Label
61	a_061	c_061	Other petroleum products
62	a_062	c_062	Basic chemicals
63	a_063	c_063	Fertilizers and nitrogen products
64	a_064	c_064	Plastic and synthetic rubber in primary forms
65	a_065	c_065	Pesticides and other agrochemical products
66	a_066	c_066	Other chemical products, man-made fibres
67	a_067	c_067	Basic pharmaceutical products, pharmaceutical preparations
68	a_068	c_068	Rubber products
69	a_069	c_069	Plastic products
70	a_070	c_070	Glass and glass products
71	a_071	c_071	Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth
72	a_072	c_072	Cements
73	a_073	c_073	Other non-metallic mineral products n.e.c
74	a_074	c_074	Products of iron and steel
75	a_075	c_075	Colour and precious metals, casting services of metals
76	a_076	c_076	Fabricated metal products, except machinery and equipment
77	a_077	c_077	Computer, electronic products
78	a_078	c_078	Communication equipment
79	a_079	c_079	Consumer electronics
80	a_080	c_080	Measuring, testing and navigating equipment, watches and clocks; irradiation, electromedical and electrotherapeutic equipment
81	a_081	c_081	Electric motors, generators, transformers, electricity distribution and control apparatus
82	a_082	c_082	Batteries and accumulators
83	a_083	c_083	Wiring and wiring devices
84	a_084	c_084	Electric lighting equipment
85	a_085	c_085	Domestic appliances
86	a_086	c_086	Other electrical equipment
87	a_087	c_087	General purpose machinery
88	a_088	c_088	Special purpose machinery
89	a_089	c_089	Motor vehicles
90	a_090	c_090	Trailers and semi-trailers
91	a_091	c_091	Ships and boats
92	a_092	c_092	Motorcycles
93	a_093	c_093	Other transport equipment
94	a_094	c_094	Furniture
95	a_095	c_095	Jewellery, bijouterie and related articles, musical instruments; sport goods; games and toys
96	a_096	c_096	Medical and dental instruments and supplies
97	a_097	c_097	Manufactured goods n.e.c

Serial No.	Activity codes	Commodity codes	Label
98	a_098	c_098	Repair and installation services of machinery and equipment
99	a_099	c_099	Electricity generation and distribution
100	a_100	c_100	Manufactured gas; distribution services of gaseous fuel through mains
101	a_101	c_101	Steam and air conditioning supply services
102	a_102	c_102	Natural water; treatment, distribution and trade services of water through mains
103	a_103	c_103	Sewerage services
104	a_104	c_104	Waste collection, treatment and disposal services, material recovery services
105	a_105	c_105	Remediation services and other waste management services
106	a_106	c_106	Residential buildings and construction works for residential buildings
107	a_107	c_107	Non-residential buildings and construction works for non-residential buildings
108	a_108	c_108	Railways, construction works for railways
109	a_109	c_109	Roads, construction works for roads
110	a_110	c_110	Construction works for utility projects
111	a_111	c_111	Specialized construction works
112	a_112	c_112	Trade services of motor vehicles and motorcycles
113	a_113	c_113	Maintenance and repair services of motor vehicles
114	a_114	c_114	Wholesale and retail trade
115	a_115	c_115	Passenger rail transport services
116	a_116	c_116	Freight rail transport services
117	a_117	c_117	Other passenger land transport services
118	a_118	c_118	Freight transport services by road, transport services via pipeline
119	a_119	c_119	Sea and coastal, inland passenger water transport services
120	a_120	c_120	Sea and coastal, inland freight water transport services
121	a_121	c_121	Passenger air transport services
122	a_122	c_122	Freight air transport service
123	a_123	c_123	Warehousing and support services for transportation
124	a_124	c_124	Postal and courier services
125	a_125	c_125	Accommodation services
126	a_126	c_126	Food and beverage serving service
127	a_127	c_127	Publishing
128	a_128	c_128	Motion picture, video and television programme production services, sound recording and music publishing
129	a_129	c_129	Programming and broadcasting services
130	a_130	c_130	Telecommunications services
131	a_131	c_131	Information technology service
132	a_132	c_132	Information services

Serial No.	Activity codes	Commodity codes	Label
133	a_133	c_133	Financial intermediation services, except insurance and pension funding
134	a_134	c_134	Life insurance and reinsurance services
135	a_135	c_135	Non-life insurance and reinsurance services
136	a_136	c_136	Other financial services
137	a_137	c_137	Real estate services
138	a_138	c_138	Legal and accounting services
139	a_139	c_139	Services of head offices; management consulting service
140	a_140	c_140	Architectural and engineering services; technical testing and analysis services
141	a_141	c_141	Scientific research and development services
142	a_142	c_142	Advertising and market research services
143	a_143	c_143	Other professional, scientific and technical services
144	a_144	c_144	Veterinary services
145	a_145	c_145	Renting and leasing services of machinery and equipment, renting and leasing services of personal and household goods
146	a_146	c_146	Employment services
147	a_147	c_147	Travel agency, tour operator and other reservation services and related services
148	a_148	c_148	Security and investigation services
149	a_149	c_149	Services to buildings and landscape
150	a_150	c_150	Office administrative, office support and other business support services
151	a_151	c_151	Services of communist party, social-political organizations, public administration and defence services; compulsory social security services
152	a_152	c_152	Education services except tertiary education services
153	a_153	c_153	Tertiary education services
154	a_154	c_154	Human health services
155	a_155	c_155	Residential care services
156	a_156	c_156	Social work services without accommodation
157	a_157	c_157	Creative, arts and entertainment services
158	a_158	c_158	Library, archive, museum and other cultural services
159	a_159	c_159	Gambling and betting services
160	a_160	c_160	Sporting services and amusement and recreation service
161	a_161	c_161	Services of other organizations and associations
162	a_162	c_162	Repair services of computers and personal and household goods
163	a_163	c_163	Other personal services
164	a_164	c_164	Services of households as employers; undifferentiated goods and services produced by households for own use

Source: Authors' compilation.

Serial No.	Other codes	Label
1	flab	Labour
2	fcap	Capital
3	flnd	Land
4	ent	Enterprises
5	hhd	Households
6	gov	Government
7	atax	Activity tax
8	ftax	Factor tax
9	dtax	Direct tax
10	mtax	Import tax
11	stax	Sales tax
12	s-i	Savings - Investment
13	dstk	Change in stocks
14	row	Rest of the world
15	total	Total

Source: Authors' compilation.

Appendix 3- Mapping of missing data commodities¹² and industries in VHLSS 2012

Missing SUT commodities number	Missing SUT commodity names	Proxy commodity number	Proxy commodity names
5	Sugar cane	9	fruits
10	Cashew nuts	9	fruits
11	Peppers	9	fruits
15	Other perennial crops	8	other non-perennial crops
22	Live forest tree plants, forest tree seeds	15	other perennial crops
23	Standing timber	56	Wood, products of wood and cork, except furniture; articles of straw and plaiting materials
24	Wild growing non-wood products exploited and collected	56	Wood, products of wood and cork, except furniture; articles of straw and plaiting materials
31	Metal ores	28	Hard coal and lignite
32	Stone, sand and clay	28	Hard coal and lignite
33	Other mining and quarrying products n.e.c	28	Hard coal and lignite
37	Processed and preserved vegetables and fruits	38	Vegetables and animal oils and fats

¹² Commodities for household expenditure by household category, activities for wage earnings by labour category.

Missing SUT commodities number	Missing SUT commodity names	Proxy commodity number	Proxy commodity names
54	Tanned and dressed leather, dressed and dyed fur, and related products	55	Footwear
62	Basic chemicals	66	Other chemical products, man-made fibres
63	Fertilizers and nitrogen products	66	Other chemical products, man-made fibres
64	Plastic and synthetic rubber in primary forms	66	Other chemical products, man-made fibres
65	Pesticides and other agrochemical products	66	Other chemical products, man-made fibres
68	Rubber products	69	Plastic products
71	Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth	107	Non-residential buildings and construction works for non-residential buildings
72	Cements	107	Non-residential buildings and construction works for non-residential buildings
73	Other non-metallic mineral products n.e.c	107	Non-residential buildings and construction works for non-residential buildings
74	Products of iron and steel	107	Non-residential buildings and construction works for non-residential buildings
76	Fabricated metal products, except machinary an equipment	97	Manufactured goods n.e.c
80	Measuring, testing and navigating equipment, watches and clocks; irradiation, electromedical and electrotherapeutic equipment	79	Consumer electronics
83	Wiring and wiring devices	79	Consumer electronics
86	Other electrical equipment	79	Consumer electronics
87	General purpose machinary	79	Consumer electronics
88	Special purpose machinary	79	Consumer electronics
95	Jewellery, bijouterie and related articles, musical instruments; sport goods; games and toys	97	Manufactured goods n.e.c

Missing SUT commodities number	Missing SUT commodity names	Proxy commodity number	Proxy commodity names
96	Medical and dental instruments and supplies	97	Manufactured goods n.e.c
98	Repair and installation services of machinery and equipment	113	Maintenance and repair services of motor vehicles
102	Natural water; treatment, distribution and trade services of water through mains	101	Steam and air conditioning supply services
103	Sewerage services	104	Waste collection, treatment and disposal services, material recovery services
105	Remediation services and other waste management services	104	Waste collection, treatment and disposal services, material recovery services
112	Trade services of motor vehicles and motorcycles	113	Maintenance and repair services of motor vehicles
115	Passenger rail transport services	117	Other passenger land transport services
119	Sea and coastal, inland passenger water transport services	117	Other passenger land transport services
121	Passenger air transport services	117	Other passenger land transport services
123	Warehousing and support services for transportation	117	Other passenger land transport services
125	Accommodation services	126	Food and beverage serving service
127	Publishing	58	Printing and recording services
129	Programming and broadcasting services	130	Telecommunications services
132	Information services	130	Telecommunications services
133	Financial intermediation services, except insurance and pension funding	136	Other financial services
134	Life insurance and reinsurance services	136	Other financial services
137	Real estate services	163	Other personal services
138	Legal and accounting services	163	Other personal services

Missing SUT commodities number	Missing SUT commodity names	Proxy commodity number	Proxy commodity names
139	Services of head offices; management consulting service	163	Other personal services
140	Architectural and engineering services; technical testing and analysis services	163	Other personal services
141	Scientific research and development services	163	Other personal services
142	Advertising and market research services	163	Other personal services
143	Other professional, scientific and technical services	163	Other personal services
144	Veterinary services	163	Other personal services
145	Renting and leasing services of machinery and equipment, renting and leasing services of personal and household goods	163	Other personal services
146	Employment services	163	Other personal services
148	Security and investigation services	150	Office administrative, office support and other business support services
149	Services to buildings and landscape	150	Office administrative, office support and other business support services
151	Services of communist party, social-political organizations, public administration and defence services; compulsory social security services	150	Office administrative, office support and other business support services
156	Social work services without accommodation	163	Other personal services
161	Services of other organizations and associations	163	Other personal services

Missing SUT commodities number	Missing SUT commodity names	Proxy commodity number	Proxy commodity names
162	Repair services of computers and personal and household goods	113	Maintenance and repair services of motor vehicles

Source: Authors' compilation.

Missing SUT industry number	Mising SUT industry names	Proxy industry number	Proxy industry name
2	Maize and other cereals	1	Paddy
3	Edible roots and tubers with high starch	1	Paddy
4	Oleaginous vegetable seeds	1	Paddy
5	Sugar cane	1	Paddy
6	Vegetables and beans of kinds	1	Paddy
7	Flowers and bonsais	1	Paddy
8	Other non-perennial crops	1	Paddy
9	Fruits	1	Paddy
10	Cashew nuts	1	Paddy
11	Peppers	1	Paddy
12	Natural rubber	1	Paddy
13	Coffee beans	1	Paddy
14	Tea leaves	1	Paddy
15	Other perennial crops	1	Paddy
16	Products of buffaloes and cows	1	Paddy
18	Products of poultry	17	Products of pigs
19	Other farm animal products	17	Products of pigs
20	Agricultural services	17	Products of pigs
21	Other agricultural services n.e.c	17	Products of pigs
22	Live forest tree plants, forest tree seeds	17	Products of pigs

Missing SUT industry number	Mising SUT industry names	Proxy industry number	Proxy industry name
23	Standing timber	17	Products of pigs
24	Wild growing non-wood products exploited and collected	17	Products of pigs
25	Support services to forestry	17	Products of pigs
26	Live fish, freshwater, marine, not farmed	17	Products of pigs
27	Live fish, freshwater, marine, farmed	17	Products of pigs
29	Crude petroleum	28	Hard coal and lignite
30	Natural gas in liquefied or gaseous state	28	Hard coal and lignite
33	Other mining and quarrying products n.e.c	32	Stone, sand and clay
34	Support services to mining and quarrying	32	Stone, sand and clay
36	Processed and preserved fish, crustaceans and molluscs	35	Processed and preserved meat and meat products
37	Processed and preserved vegetables and fruits	35	Processed and preserved meat and meat products
38	Vegetables and animal oils and fats	35	Processed and preserved meat and meat products
39	Dairy products	35	Processed and preserved meat and meat products
40	Grain mill products, starches and starch products	35	Processed and preserved meat and meat products
41	Sugar and molasses	35	Processed and preserved meat and meat products
42	Cocoa, chocolate and sugar confectionary	35	Processed and preserved meat and meat products
43	Coffee	35	Processed and preserved meat and meat products
44	Tea	35	Processed and preserved meat and meat products
45	Other food products	35	Processed and preserved meat and meat products
46	Prepared animal feeds	35	Processed and preserved meat and meat products
48	Beer	47	Wine

Missing SUT industry number	Mising SUT industry names	Proxy industry number	Proxy industry name
49	Non-alcoholic beverages, mineral water	47	Wine
52	Other textiles	51	Textiles
55	Footwear	54	Tanned and dressed leather, dressed and dyed fur, and related products
60	Refined petroleum products	62	Basic chemicals
61	Other petroleum products	62	Basic chemicals
63	Fertilizers and nitrogen products	62	Basic chemicals
64	Plastic and synthetic rubber in primary forms	62	Basic chemicals
65	Pesticides and other agrochemical products	62	Basic chemicals
66	Other chemical products, man-made fibres	62	Basic chemicals
68	Rubber products	69	Plastic products
70	Glass and glass products	71	Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth
72	Cements	71	Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth
73	Other non-metallic mineral products n.e.c	71	Bricks, blocks, tiles, other ceramic goods of siliceous fossil meals or earth
75	Colour and precious metals, casting services of metals	74	Products of iron and steel
78	Communication equipment	79	Consumer electronics
80	Measuring, testing and navigating equipment, watches and clocks; irradiation, electromedical and electrotherapeutic equipment	79	Consumer electronics

Missing SUT industry number	Mising SUT industry names	Proxy industry number	Proxy industry name
81	Electric motors, generators, transformers, electricity distribution and control apparatus	79	Consumer electronics
82	Batteries and accumulators	79	Consumer electronics
83	Wiring and wiring devices	79	Consumer electronics
84	Electric lighting equipment	79	Consumer electronics
85	Domestic appliances	79	Consumer electronics
87	General purpose machinery	86	Other electrical equipment
88	Special purpose machinery	86	Other electrical equipment
89	Motor vehicles	90	Trailers and semi-trailers
91	Ships and boats	90	Trailers and semi-trailers
92	Motorcycles	90	Trailers and semi-trailers
95	Jewellery, bijouterie and related articles, musical instruments; sport goods; games and toys	97	Manufactured goods n.e.c
96	Medical and dental instruments and supplies	97	Manufactured goods n.e.c
100	Manufactured gas; distribution services of gaseous fuel through mains	99	Electricity generation and distribution
101	Steam and air conditioning supply services	102	Natural water; treatment, distribution and trade services of water through mains
103	Sewerage services	104	Waste collection, treatment and disposal services, material recovery services
107	Non-residential buildings and construction works for non-residential buildings	106	Residential buildings and construction works for residential buildings
108	Railways, construction works for railways	110	Construction works for utility projects
109	Roads, construction works for roads	110	Construction works for utility projects

Missing SUT industry number	Mising SUT industry names	Proxy industry number	Proxy industry name
112	Trade services of motor vehicles and motorcycles	113	Maintenance and repair services of motor vehicles
115	Passenger rail transport services	118	Freight transport services by road, transport services via pipeline
116	Freight rail transport services	118	Freight transport services by road, transport services via pipeline
117	Other passenger land transport services	118	Freight transport services by road, transport services via pipeline
119	Sea and coastal, inland passenger water transport services	118	Freight transport services by road, transport services via pipeline
121	Passenger air transport services	118	Freight transport services by road, transport services via pipeline
135	Non-life insurance and reinsurance services	134	Life insurance and reinsurance services
153	Tertiary education services	152	Education services except tertiary education services

Source: Authors' compilation.

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