Social Accounting Matrix: an economic analysis of Mexico

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Abstract

This article illustrates the construction and usefulness of a Social Accounting Matrix (SAM) for Mexico, 2013, presenting the methodology used for its elaboration, as well as its characteristics and qualities as an accounting tool for the evaluation of economic policy linked to the study of economic growth and development. The SAM includes 21 economic sectors, four types of import goods industries, and four institutional sectors subdivided into low-, middle -, and high-income households; financial and non-financial corporations (public and private), government, and the rest of the world. Via inter-institutional analysis, SAMs allow for the detailed observation of the productive structure and the institutional sectors of the Mexican economy.

Keywords: Social Accounting Matrix; economic development; household income-expenditure distribution; industrialization; economic policy.

1. INTRODUCTION

The Social Accounting Matrix (SAM) is a useful and powerful accounting tool for economic analysis, especially for evaluating economic growth and development. Taking Quesnay's (1894) tables as a reference, Leontief (1941)[1] developed the idea of economic circular flow, using what he called the Input-Output Matrix (IOM) to analyze economic transactions between an economy's productive sectors. This matrix provides a detailed picture of the economic relationships of the productive sectors. Subsequently, Stone (1956)[2] incorporated the institutional sectors into the IOM, which resulted in the now widely-known SAM. In contrast to the analysis with IOM, the use of SAM allows for a specific analysis of the productive sector's relationship with households, government, societies, and the rest of the world.

The primary objective of this article is to demonstrate the usefulness of a SAM for inter-institutional accounting analysis and its relationship with the development of the Mexican economy. Based on an analysis of the inter-institutional relationships between economic agents, a bridge is drawn between the analysis of income production and distribution, including transactions from the government, corporations, and the rest of the world to households. This article also provides a methodological approach for analyzing the relationship between the SAM and economic development, and combines the available data from the productive sectors and the institutional account system. The SAM-Mexico 2013 presented here includes 21 economic sectors: 4 types of import goods industries; 4 institutional sectors subdivided into households by income level (low, medium, and high); public and private financial and non-financial corporations; government; and rest of the world. A SAM with the aforementioned level of disaggregation has not yet been published. The SAM was compiled using data from the 2013 IOM and the institutional accounts system, as well as data from INEGI's National Household Income and Expenditure Survey (ENIGH) and the balance of payments published by the Bank of Mexico.

This article is structured in five sections, including an introduction. The second section briefly reviews the definition and characteristics of a SAM. The third section then describes the methodology followed to develop the SAM-Mexico 2013, concluding with a presentation of the model. The fourth section goes on to provide a descriptive analysis of the Mexican economy based on the results from the model, which serve as a basis for subsequent inter-institutional analyses, and the final section offers some conclusions.

The SAM-Mexico 2013 constitutes a useful methodological tool for the analysis of economic development in Mexico, due to its level of disaggregation and the data presented. The proposed model will allow for the elaboration and evaluation of public policies that are better focused on addressing not only economic growth, but also the distribution of this growth between the institutional sectors of the economy.

2. DEFINITION AND CHARACTERISTICS OF THE SAM-MEXICO 2013

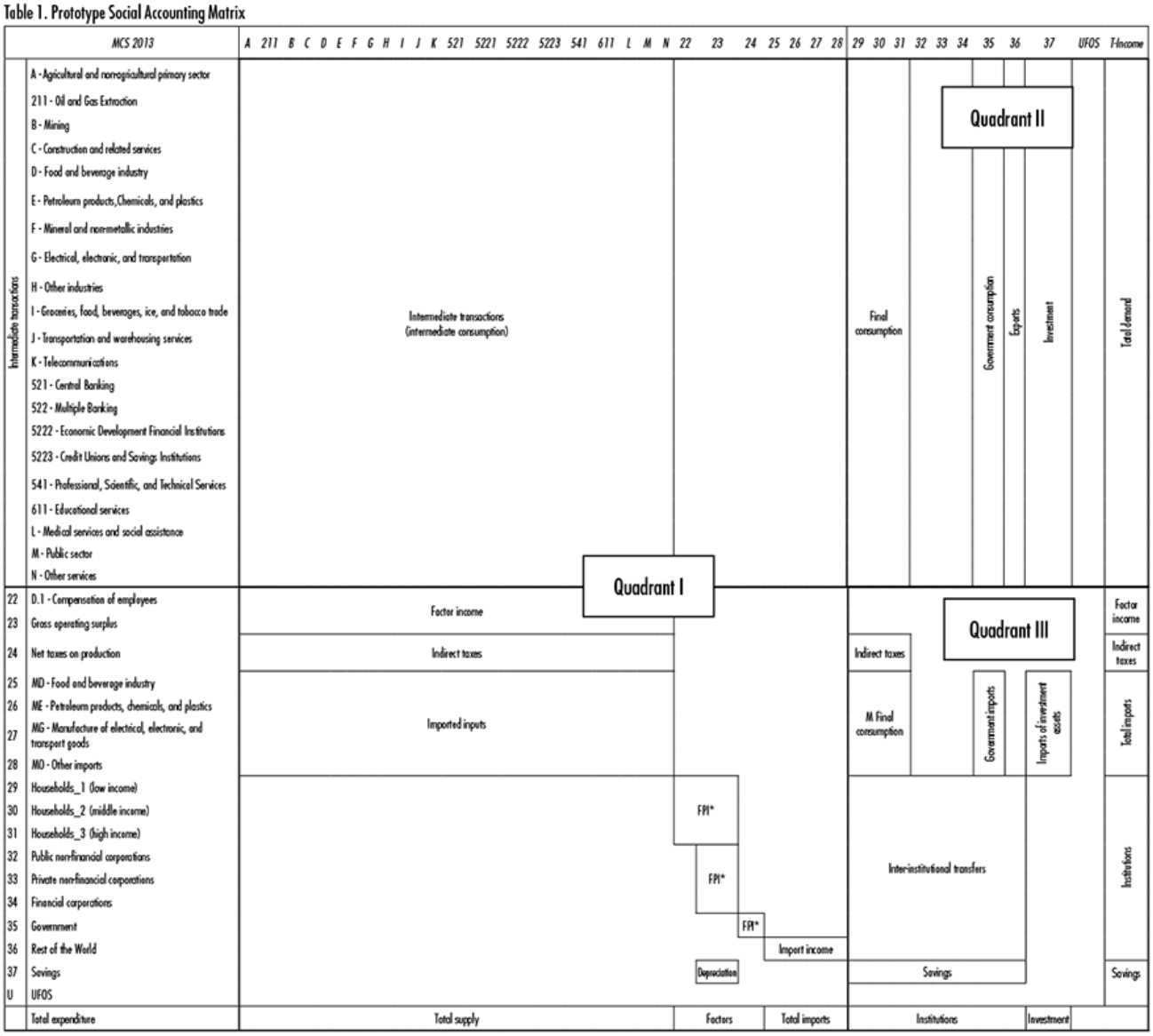
The elaboration and presentation format of the SAM is based on the System of National Accounts (SNA) methodology (UN, 1993 and 2016) and has a similar structure to that of the SAMs published by the International Labor Organization (ILO], 2019) and the International Food Policy Research Institute (Breisinger *et al*., 2009). The SAM is an accounting representation of the transactions carried out between the productive and institutional sectors of the economy. Following the double-entry method, a square matrix is obtained in which each accounting record has a row (income) and column (expenditure); the total value of each row is equal to the value obtained in each column; and the total income of each sector is spent (including savings). On the production side, all the goods supplied are demanded by the institutional sectors and there are no inventories (Robinson *et al*., 2001).

Several SAMs have been developed in Mexico. Banegas and Blancas (2019) analyze the effects of public spending on economic growth and social welfare using an aggregated 2011 SAM; Núñez and Romero (2020), meanwhile, study the effect of increasing private savings and granting subsidies to the consumption of domestic inputs using a 2012 SAM; Casares *et al*. (2017), for their part, observe the effect of fiscal policy and government transfers on household income using a 2003 SAM that disaggregates the household account by deciles; while Blancas (2010) elaborates an SAM which disaggregates the savings/investment account by the institutional sectors of central, commercial, and development banking, thus allowing for analysis of the relationship between current and capital account flows through what he calls inter-institutional analysis. Meanwhile, Cardona *et al*. (2018) estimate an SAM to determine an economy's key productive sectors. Finally, Chapa *et al*. (2019) use an SAM to evaluate the expected effectiveness of an elderly assistance program. However, these studies do not advance a methodology with which to elaborate an SAM for Mexico using the available data. Therefore, there is a vital need to formulate a coherent and standardized methodology to elaborate an SAM that serves as a tool to analyze the country's economic development.

The objectives of the SAM-Mexico 2013 are as follows: to shed light on the relationship between the national productive sector and the type of imports; to include the relationship between the productive and institutional sectors; and to disaggregate household income-expenditure into low, medium, and high. The matrix is compiled based on data from the IOM[3] 2013 (INEGI, 2018a); the institutional relationships are calculated using the data published in the System of National Accounts-Institutional Sector Accounts (INEGI, 2013b); and the institutional sector of households is constructed using data from the 2014 National Survey of Household Incomes and Expenditures (Encuesta Nacional de Ingresos y Gastos de los Hogares, ENIGH) (INEGI, 2014).[4] The aforementioned bases group an additional set of official information published by INEGI (2013b and 2014).

Table 1 shows the prototype SAM divided into three quadrants. The first integrates transactions for intermediate consumption, factor income, indirect taxes, and imported inputs; the second includes data on domestic and foreign demand for final goods and services; and the third includes data on inter-institutional transfers.

Table 1. Prototype Social Accounting Matrix



Note: * Factor payment income

Source: compiled by the authors based on studies by Blancas (2006 and 2010), Núñez and Romero (2020), Casares et al. (2017), and Cardona et al. (2018).

The institutional sectors included in the SAM-Mexico 2013 are Households, Public and private financial and non-financial corporations, Government, and Rest of the world.[5] Table 2 shows the exchanges (income-expenditure) made between the productive and institutional sectors. The difference between income and expenditure of the institutional sectors is considered as savings-investment.

Table 2. Income and expenditure of institutional sectors

	Expenditure				
Revenues	Production sectors	Households	Government	Companies	Rest of the world
Productive sectors	Intermediate consumption	Consumption of goods and services	Government consumption	X	Exports
Households	Payment of remunerations and capital services	Transfers between households	Social transfers	Income from dividend payments	Payment of services of the factors of production abroad and transfers
Government	Taxes on production	Payment of taxes, profits, and duties	Transfers between government entities	Taxes on income and profits	Tariffs on imports and transfers
Corporations	Gross operating surplus	Acquisition of assets	Capitalization of public companies and transfers to private companies	Intercompany transfers (assets and liabilities)	Purchase of assets or liabilities and reinvestment of earnings in non-residents' holdings
Rest of the world	Imports	Payments or transfers	Transfers and payments for services (humanitarian aid, foreign consultancy)	Payment of dividends and decapitalization of companies to non-residents	X

Source: compiled by the authors.

3. SAM-MEXICO 2013

IOM data in the SAM

The first step in elaborating the SAM consists of incorporating the data from the IOM in quadrant I, which represents the total supply of the economy (intermediate inputs, productive factors, total imports, and direct taxes).

The transactions of the productive sectors are based on IOM data that includes 79 productive subsectors, which are grouped into 21 industries within quadrant I of the SAM (see Table 3). Intermediate inputs in the IOM correspond to the intermediate demand of the productive sectors.

Table 3. Productive sectors included in the SAM

Sector	Production sector (sub-sectors-NAICS)	NAICS code	Production (% of GDP)
Primary	A-Agricultural and non-agricultural primary sector	111-115	3.1
	211-Oil and gas extraction	211	5.5
	B-Mining	212-213	1.6
Secondary	C-Construction and related services	221-222 and 236-238	8.9
	D-Food and beverage industry	311-312	4.6
	E-Petroleum products, chemicals, and plastics	324-326	2.6
	F-Mineral and non-metallic industries	327, 331-332	2.0
	G-Electrical, electronic, and transportation goods manufacturing	333-336	4.9
	H-Other industries	313-316, 321-323, 337 and 339	1.8
Tertiary (services)	I-Grocery, food, beverages, ice, and tobacco trade	431 and 461	16.8
	J-Transportation and warehousing services	481-488 and 491-493	6.1
	K-Telecommunications	511-512, 515 and 517-519	2.0
	541-Professional, scientific, and technical services	541	1.9
	611-Educational services	611	4.1
	L-Medical services and social assistance	621-624	2.4
	M-Public sector	813 and 931	4.6
	N-Other services	5224-5225, 523-524, 531-533, 551, 561-562, 711-713, 721-722, 811-812 and 814	20.9
Tertiary (financial)	521-Central banking	521	0.1
	5221-Multiple banks	5221	1.8
	5222-Economic development financial institutions	5222	0.3
	5223-Credit Unions and Savings Institutions	5223	0.2

Source: Compiled by the authors using data from SCIAN (INEGI, 2013a) and MIP (INEGI 2018a).

The factors of production are labor and capital available for the production of goods and services. The income/payment to the factors of production (FPI–lines 22 and 23) is divided into employee remuneration (W) and Gross Operating Surplus (EBO):

$$FPI = W + EBO \quad (1)$$

Data on imports is obtained from the IOM of imported goods and services by productive sector. The SAM-Mexico 2013 disaggregates imports from the rest of the world account. Blancas (2006) performs a similar procedure when he disaggregates the savings-financial account to analyze the relationship between the financial sector and the real economy.

The IOM disaggregated by imported requirements makes it possible to identify the demand for imports. Table 4 disaggregates imports into four categories: the first three account for more than 92% of total imports and, because of their high household demand, MD-Food and beverage industries is included.

Table 4. Imports by productive sectors included in the SAM

Industries	NAICS	Imports (% total)
MD-Food and beverage industry	311 and 312	4.34
ME-Petroleum products, chemicals, and plastics	324, 325 and 326	21.85
MG-Manufacturing of electrical, electronic, and transportation goods	333, 334, 335 and 336	66.44
MO-Other imports	NA	7.37

Source: compiled by the authors using data from INEGI (2013a).

Total imports are integrated into the SAM as the sum of imports by type of demand: imported intermediate goods (M*Int*), households (M*Cons*), government (M*Gob*), and investment or gross fixed capital formation (MFBKF).

$$M = M_{Int} + M_{Cons} + M_{Gob} + M_{FBKF} \quad (2)$$

The sum of the four types of imports equals the income in the rest of the world account. To comply with the double-entry income-expenditure accounting rule, the imports account balances with income from imports for the rest of the world (see Table 3, row 36, columns 25-28).

Taxes and subsidies on production and imports recorded in the IOM correspond to indirect taxes (INEGI, 2018a); in the SAM they are included as Net taxes on production (line 24).

The sum of intermediate transactions, factor income, input imports, and indirect taxes represents the total supply of the economy (see equation 3).

$$Total\ supply = Inputs + Factor\ income + M_{intermediates} + T_{indirect} \quad (3)$$

Quadrant II integrates the intermediate consumption of the productive sectors (inputs), household demand, government, exports, and gross fixed capital formation (GFCF). Stock changes are values that are not reported in the IOM[6] and are included within the SAM as UFOS (line/column 38).

Adding intermediate demand with demand by institutional sectors and investment (FBKF) gives final demand by productive sector. The sum of final demand by productive sector represents the national aggregate demand.

$$Total\ Demand = Inputs + C + G + X + FBKF \quad (4)$$

Additionally, it is demonstrated that total supply equals total demand accounting identity or equilibrium condition:

$$Total\ supply = Total\ Demand \quad (5)$$

Data from the Institutional Accounts System in the Sam

To determine the values of quadrant III, the monetary transfers made between institutional sectors are disaggregated using the Institutional Sectors Account (ISA) database.

The first step consists of transforming the total payment of productive factors into the income of the institutional sectors (line/columns 22 and 23). Remuneration payments (W) are obtained from the ISA as D.1- Employee remuneration and includes sub-accounts D.11-Wages and salaries and D.12-Employers' social contributions; the data is recorded in the SAM as household income (lines 29-31).

$$W = Employee\ remuneration \rightarrow Households \quad (6)$$

The payment to subaccounts B.2b-Gross operating surplus (EBO) and B.3b-Gross mixed-income is distributed among all institutional sectors and depreciation (see information in Table 5). The sum of EBO and salaries reported in the ISA is equal to the value reported in the IOM.

Table 5. Distribution of EBO by institutional sector (millions of pesos at 2013 prices)

Institutional sector	*B.2b-Gross operating surplus*	*P.51c1-Consumption of fixed capital over gross operating surplus*	*B.2n-Net operating surplus*
S.11001-Public Non-Financial Corporations	1 222 276	477 211	745 065
S.11002,03-Private non-financial corporations[a]	4 416 063	1 388 378	3 027 685
S.12-Financial corporations	397 751	22 402	375 349
S.13-General Government	8 657	8 657	0
S.14-Households[b,c]	4 967 600	670 582	4 297 018
S.2-Rest of the World	NA	NA	NA

Notes: [a] S.11002 and S.11003-Domestic and foreign-controlled private non-financial corporations; [b] Includes B.3b-Gross mixed-income, P.51c2-Fixed capital consumption over gross mixed-income and B.3n-Net mixed-income; [c] Includes S.15-Non-profit institutions serving households (NPISHs); NA: Not Applicable.

Source: compiled by the authors using data from INEGI, 2013b.

The Net taxes on the production account (line 24) includes indirect taxes paid by households such as Value Added Tax (VAT) and taxes on exports and investment; the total value is transferred to the government as revenue (line 35/column 24).

The gross value added generated in the economy is transferred to the institutional sectors as remuneration payments, net taxes on production, and gross operating surplus (columns 22-24). Similarly, the depreciation payment is subtracted from the EBO and transferred to the savings account (line 33).

The next step in the construction of the SAM is to transfer the payment for imports of intermediate, capital, and consumption inputs from the productive sector, households, government, and investment (lines 24-27) to the rest of the world account (line 38/columns 24-27).

Registering import payments by residents to the rest of the world concludes the exchanges between the productive sector and the institutional sectors; additionally, the data from the IOM was incorporated into the SAM via the ICS. The structuring of the data ensures that the SAM is squared and that the sum of the grand total of the columns and rows is equal.

Institutional transfers matrix

Finally, the Institutional Transfers Matrix (ITM) is contained in quadrant III. This matrix is constructed by aggregating the inter-institutional exchanges reported in section II-Income Distribution and Utilization Account and subsection II.1.2-Primary Income Allocation Account of the ISA. Exchanges are also recorded for D.4-Property income, D.5-Current taxes on income, wealth, etc., and D.7-Other current transfers.

The method used to estimate payments between institutional sectors consists of identifying their transactions with the rest of the sectors. To determine each transaction, the ICS is disaggregated at the institutional subsector level and the subaccounts at the highest level of disaggregation. As an example of how each transfer from the ICS is recorded, Table 6 shows the transfers from sub-account D.5-Current taxes on income, wealth, etc., and shows that the institutional sectors transfer resources to sector S.13-General government for current taxes.

Table 6. Inter-institutional transfers from sub-account D.5-Current taxes on income, wealth, etc. (millions of pesos at 2013 prices)

Institutional sector	*U-Uses*	*R-Resources*
S.11001-Public Non-Financial Corporations	10 642	
S.11002,03-Private non-financial corporations[a]	466 955	
S.12-Financial corporations	28 342	
S.13-General Government		1 062 905
S.14-Households[b]	556 966	
S.2-Rest of the World	NA	NA
Total	1 062 905	1 062 905

Notes: [a] S.11002 and S.11003-Domestic and foreign-controlled private nonfinancial corporations; [b] Includes S.1-Nonprofit institutions serving households (NPISHs); NA: Not Applicable. Rounded figures.
Source: compiled by the authors using data from INEGI, 2013b

The exchanges of account D.5 are presented in a matrix form in Table 7. This submatrix is an example of the set of sub-matrices that make up the ITM.

Table 7. Sub-matrix of inter-institutional transfers from account D.5-Current taxes on income, wealth, etc. (millions of pesos at 2013 prices)

	S.11001	*S.11002,03*	*S.12*	*S.13*	*S.14*	*S.2*	*Total*
S.11001-Public Non-Financial Corporations							
S.11002,03-Private non-financial corporations							
S.12-Financial corporations							
S.13-General government	10 642	466 955	28 342		556 966		1 062 905
S.14-Households							
S.2-Rest of the World							
Total	10 642	466 955	28 342		556 966		1 062 905

Note: figures rounded.
Source: compiled by the authors using data from Table 6.

The ITM is concluded by summing the information from each submatrix (see Table 8), which contains the information required in quadrant III of the SAM.

Table 8. Institutional transfers matrix (millions of pesos at 2013 prices)

Sector institucional	*S.11001*	*S.11002,03*	*S.12*	*S.13*	*S.14*	*S.2*	*Total*
S.11001-Public Non-Financial Corporations	836	9 988	6 633	8 015	4 159	563	30 195
S.11002,03-Private non-financial corporations	6 971	83 284	98 562	40 586	114 176	55 775	399 353
S.12-Financial corporations	25 630	292 938	180 930	162 800	386 054	43 159	1 091 511
S.13-General government*	886 549	653 499	68 012	2 244 131	972 079	1 698	4 825 968
S.14-Households	14 786	2 672 026	318 587	1 357 046	31 919	344 070	4 738 433
S.2-Rest of the World	24 320	412 414	66 469	143 225	12 841	0	659 269
Total	959 092	4 124 148	739 192	3 955 804	1 521 228	445 264	11 744 729

Notes: S.11002 and S.11003-Domestic and foreign-controlled private nonfinancial corporations; Includes S.15-Nonprofit institutions serving households (NPISHs). Rounded figures. *In the general government account (income) a value outside the matrix of 3,974 was found. This data is reported by INEGI in sub-account D.7-Other current transfers.
Source: compiled by the authors using data from INEGI (2013b) and Banco de México (2013).

Disaggregation of the household account

According to Cortés (2018) and Nava and Brown (2018), income distribution problems persist in Mexico, so considering only one type of household would imply an understanding of households as homogeneous. Following the methodology of Blancas (2006 and 2010) and Casares *et al*. (2017), this article disaggregates the institutional sector of households into the following three groups: low-income (deciles I-IV), middle-income (V-VIII), and high-income (IX-X). To disaggregate the household account, the composition of income/expenditure by decile from the ENIGH 2014 (INEGI, 2014) is taken as a reference. This article then goes on to adopt a classification technique similar to the one presented by Leyva (2004, p. 30).

Disaggregating the household account is crucial to understanding the distribution of household income-expenditure and its relationship with economic development. Various current studies address the problem of homogenization and the use of data on income distribution. One such study is Bustos and Leyva (2017), which illustrates the discrepancies in the measurement of income distribution on the national accounts side with respect to the ENIGH, even pointing to a possible problem of underestimation for some data. The authors decided to take the ENIGH data as a reference because the estimation of household income on the national accounts side focuses on the construction of macroeconomic aggregates, while the survey has a marked use for recognizing the distribution of income among households (Villatoro, 2015, p. 11). For this reason, data by household income decile from

the ENIGH-2014 is used to form three groups of households (low, middle, and high) by grouping the survey deciles by household type (see Table 9). It is important to note that "low-income" households have a negative balance of their current income-expenditure, so the SAM-Mexico 2013 reflects negative savings in this group.

Table 9. Aggregation of households by income decile, ENIGH 2014.
(quarterly expenditure thousands of pesos at 2014 values)

Deciles	*% of households*	*Total current income*	*Total current expenditure*	*Balance*
I to IV	19.2	183 027	209 831	-26 804
V to VIII	36.1	432 166	394 935	37 230
IX to X	44.8	642 752	490 520	152 232

Source: compiled by the authors using data from ENIGH, 2014.

The disaggregation by low-, middle- and high-income household in the SAM is resolved by multiplying the income/expenditure values of the household account by the percentage of income/expenditure reported in the ENIGH; the percentage composition of household expenditure is taken and integrated with the absolute value of the income/expenditure of the SAM household account.

With the 2014 ENIGH tabulations, the data on income by household type is integrated with the resource transfers received by households from the rest of the institutional sectors (see Table 10); proxies are constructed from the values reported in the ENIGH that are included within the SAM. For example, the payment of remunerations recorded in the SAM-Mexico 2013 corresponds in the ENIGH to household income from Remunerations from subordinate work, Income from self-employment, and Income from other work. Therefore, the proportion of this income concentrated in deciles I to IV (11.23%) is a proxy for the proportion of income from Remuneration Payments of Low-income Households (row 25/column 22). Leyva (2004, p. 30) performs a similar estimation to adjust the national accounts data with the ENIGH.

Table 10. Prototype SAM institutional transfers and household income items (ENIGH)

Institutional transfers	*Proxy ENIGH*	*% of income by household group*			
		Low	*Medium*	*High*	*Total (%)*
Remuneration payments	Compensation for subordinate employment[a]	11.23	34.53	54.24	100
	Income from self-employmenta				
	Income from other work[b]				
Gross operating surplus	Income from cooperatives, partnerships, and companies operating as partnerships[c]	1.73	6.77	91.50	100
Transfers from companies	Income from property	18.38	29.39	52.23	100
	Donations in money from institutions and other households				
	Other current income				
	Transfers in kind from institutions				
Transfers from government	Retirements, pensions, and indemnities for work-related accidents, dismissal, and voluntary retirement	18.91	29.51	51.57	100
	Scholarships from government and institutions				
	Benefits from government programs				
	Transfers in kind from institutions				
Transfers from the rest of the world	Income from other countries	31.10	39.53	29.36	100
Household transfers	Donations in money from institutions and other households	22.33	36.82	40.86	100
	Current income from self-consumption				
	In-kind transfers from other households				
	Estimated housing rent				

Notes: [a] Includes only income from main and secondary work; [b] Includes income from jobs 3 to 7 and income obtained in the reference period from other work performed outside the period; [c] Includes earnings and profits from incorporated companies, cooperatives, and quasi-corporations.

Source: compiled by the authors using data from ENIGH, 2014.

The estimation of expenditures by type of household follows the same breakdown as for income (see Table 11). Four groups are considered: Expenditure on domestic final consumption goods, Imports of final consumption goods, Payment of indirect taxes, and Transfers to the rest of the institutional sectors that represent proxies of the expenditure of the household account of the SAM.

Table 11. Institutional transfers and household spending

Final consumption	*ENIGH Proxy*	*% of expenditure by type of household*			
		Low	*Medium*	*High*	*Total (%)*
A-Agricultural and non-agricultural primary sector	Food, beverages, and tobacco (ABT)	25.20	40.47	34.33	100
211-Oil and gas extraction	NA	NA	NA	NA	NA
B-Mining	Total household expenditures on consumer goods (GTHBC)	18.41	35.23	46.37	100
C-Construction and related services	Services and materials for repair, maintenance, and/or expansion of housing	14.37	26.00	59.63	100
D-Food and beverage industry	ABT	25.20	40.47	34.33	100
E-Petroleum products, chemicals, and plastics	Housing, maintenance services, electric power, and fuels. Items and services for cleaning, care of the house, household goods and furniture, glassware, household utensils, and white goods	21.23	37.53	41.24	100
F-Mineral and non-metallic industries	GTHBC	18.41	35.23	46.37	100
G-Manufacture of electrical, electronic, and transport goods	Transportation; vehicle procurement, maintenance, accessories, and services; communications (TAMASVC)	13.82	36.60	49.58	100
H-Other industries	GTHBC	18.41	35.23	46.37	100
I-Grocery, food, beverages, ice, and tobacco trade	ABT	25.20	40.47	34.33	100
J-Transportation and warehousing services	TAMASVC	13.82	36.60	49.58	100
K-Telecommunications	GTHBC	18.41	35.23	46.37	100
521-Central Banking	NA	NA			
5221-Multiple banking	Payment by credit card to the bank or commercial house	2.12	14.21	83.67	100
5222-Economic development financial institutions	Deposit in savings accounts, savings accounts, savings banks, etc.	8.55	18.21	73.24	100
5223-Credit unions and financial institutions	Deposit in savings account, savings, savings banks, etc.	8.55	18.21	73.24	100
541-Professional, scientific and technical services	GTHBC	18.41	35.23	46.37	100
611-Educational services	Education services, educational items, recreational items, and other recreational expenses	11.27	28.28	60.45	100
L-Medical services and social assistance	Health care	17.12	27.94	54.95	100
M-Public sector	GTHBC	18.41	35.23	46.37	100
N-Other services	GTHBC	18.41	35.23	46.37	100
Imports of final consumer goods					
Type of imported goods	*ENIGH Proxy*	*Low*	*Medium*	*High*	*Total*
MD-Food and beverage industry	ABT	25.20	40.47	34.33	100
ME-Petroleum products, chemicals, and plastics	Housing, utilities, electric power, and fuels	21.23	37.53	41.24	100
MG-Manufacturing of electrical, electronic, and transportation goods	TAMASVC	13.82	36.60	49.58	100
MO-Other imports	GTHBC	18.41	35.23	46.37	100
Excise taxes					
Payment of taxes	GTHBC	18.41	35.23	46.37	100
Inter-institutional transfers					
Institutional transfers	Expense transfers	8.42	28.57	63.01	100

Note: NA: Not Applicable.

Source: compiled by the authors using data from ENIGH, 2014.

Tables 10 and 11 complete the information necessary to conclude the SAM-Mexico 2013 (see Table 12).

Table 12: Social Accounting Matrix Mexico 2013

		SP1	SP2	SP3	SP4	SP5	SP6	SP7	SP8	SP9	SP10	SP11	SP12	SP13
Productive sectors	A - Agricultural and non-agricultural primary sector	64 377	0.52	0.34	302	393 558	7 062	103	2.04	19 349	1.72	2.18	1.95	
	211 - Oil and gas extraction				82		494 197							
	B - Mining	784	351	6 670	36 292	2 278	7 140	162 572	714	239	188	182	162	
	C - Construction and related services	13 476	3 437	24 921	165 761	33 108	23 602	45 833	35 555	25 170	45 338	13 106	4 405	75
	D - Food and beverage industry	67 660	25	19	235	174 159	1 629	185	222	5 506	2 481	100	98	13
	E - Petroleum products, chemicals, and plastics	38 152	28 639	41 350	152 574	57 056	220 559	27 492	65 066	45 274	61 292	248 270	2 927	5
	F - Mineral and non-metallic industries	1 897	3 199	7 078	189 411	23 046	11 336	171 842	200 190	11 630	7 645	1 386	2 094	6
	G - Electrical, electronic, and transportation manufacturing	2 046	770	3 885	28 588	2 254	2 314	4 523	189 257	3 414	8 218	15 380	9 028	4
	H - Other industries	2 262	939	3 531	21 505	14 851	12 842	9 471	32 683	123 517	32 166	2 010	755	1 274
	I - Grocery, food, beverages, ice, and tobacco trade	44 348	11 465	15 058	137 531	173 396	122 685	101 334	268 345	76 152	37 102	47 726	14 770	528
	J - Transportation and warehousing services	6 188	5 170	2 914	29 591	29 105	47 382	18 809	54 908	11 822	51 426	62 549	8 126	102
	K - Telecommunications	363	1 398	1 013	24 382	10 820	6 138	6 548	24 038	5 514	22 971	11 629	24 732	12
	521 - Central Banking													
	522 - Multiple banking	1 398	10	1 064	14 532	3 427	2 374	2 782	2 528	1 430	14 722	1 189	1 630	57
	5222 - Economic Development Financial Institutions	31	106	214	2 354	40	129	130	199	11	345	33	1.47	
	5223 - Credit Unions and Savings Institutions	61		16	27	71	19	86	12	16	304	23	0.55	
	541 - Professional, scientific, and technical services	605	18 655	10 002	25 367	15 890	19 767	9 740	28 739	7 090	20 334	9 277	14 046	204
	611 - Educational services	1.23	5	1.97	14	63	78	9	336	16	101	18	21	0.37
	L - Medical services and social assistance	5	12	11	23	36	27	21	61	172	65	106	30	0.04
	M - Public sector	20	13	58	988	390	266	215	345	599	1 076	810	848	
	N - Other services	4 030	28 499	27 570	60 552	60 278	84 342	44 314	114 106	40 564	254 425	116 894	76 512	101
W	D.1 - Remuneration of employees	87 476	34 803	37 008	444 846	96 261	107 588	69 974	277 769	127 324	417 291	304 755	55 149	2 044
K	Gross operating surplus	423 414	857 768	222 962	1 002 718	637 071	301 015	257 929	508 935	160 621	2 309 816	708 515	268 289	13 834
TY	Net taxes on production	-4 148	-609	-2 323	-4 156	11 492	7 081	2 980	13 567	2 945	13 068	-24 913	1 345	58
M1	MD - Food and beverage industry	9 228	130	90	24	57 572	7 206	74	167	1 742	562	6	0.96	0.00
M2	ME - Petroleum products, chemicals, and plastics	26 547	26 590	6 899	23 258	32 517	571 835	22 912	121 879	49 751	20 340	73 019	1 531	0.14
M3	MG - Manufacture of electrical, electronic, and transport goods	2 543	7 334	14 502	80 041	11 686	19 802	32 168	1 306 158	48 293	31 870	78 627	57 892	0.23
M4	MO - Other imports	17 945	4 252	12 125	113 718	99 921	27 926	136 452	294 153	154 886	32 318	23 588	6 185	55
H1	Households_1 (low income)													
H2	Households_2 (middle income)													
H3	Households_3 (high income)													
S1	Public non-financial corporations													
S2	Private non-financial corporations													
S3	Financial corporations													
G	G Government													
RM	RM Rest of the world													
S	S Savings													
	UFOS													
	Total expenditure	810 711	1 032 962	436 639	2 550 560	1 940 345	2 106 340	1 128 497	3 539 933	923 046	3 385 466	1 694 287	550 578	18 371

Table 12: Social Accounting Matrix Mexico 2013 (continuation)

		SP14	SP15	SP16	SP17	SP18	SP19	SP20	SP21	W	K	TY	M1	M2
Productive sectors	A - Agricultural and non-agricultural primary sector				0.75	421	64	18	4 671					
	211 - Oil and gas extraction													
	B - Mining				65	21	62	51	544					
	C - Construction and related services	1 332	185	802	7 218	15 240	12 843	22 161	47 588					
	D - Food and beverage industry	47	23	3	170	1 153	2 026	7 369	38 378					
	E - Petroleum products, chemicals, and plastics	226	67	846	7 503	2 627	49 801	20 209	51 825					
	F - Mineral and non-metallic industries	62	18	5	619	176	147	722	12 560					
	G - Electrical, electronic, and transportation manufacturing	70	13	4	530	231	610	727	19 405					
	H - Other industries	4 486	245	94	4 229	3 116	11 009	9 250	26 498					
	I - Grocery, food, beverages, ice, and tobacco trade	2 527	195	186	6 621	5 234	29 264	13 579	61 316					
	J - Transportation and warehousing services	1 996	1 178	41	5 583	3 974	5 706	10 508	24 347					
	K - Telecommunications	3 708	729	899	11 363	6 627	5 266	27 281	32 203					
	521 - Central Banking	10 726	3 579											
	522 - Multiple banking		1 002	115	1 109	647	573	11 572	19 020					
	5222 - Economic Development Financial Institutions	414	39	9	33			3 307	1 429					
	5223 - Credit Unions and Savings Institutions				0.85	0.04	0.01		2.30					
	541 - Professional, scientific, and technical services	10 722	3 701	2 880	8 609	6 589	10 986	44 587	92 424					
	611 - Educational services	34	41	2.08	123	1 413	188	3 064	291					
	L - Medical services and social assistance	12	0.89	0.61	25	9	5 368	39	106					
	M - Public sector	984	135	0	1 214	0.77	0.18	6	2 531					
	N - Other services	68 397	2 694	1 025	50 322	17 927	30 778	59 719	262 589					
W	0.1 - Remuneration of employees	88 526	10 458	3 225	96 235	593 349	297 733	674 744	716 295					
K	Gross operating surplus	199 071	42 023	34 118	214 985	69 403	75 139	30 804	2 673 915					
TY	Net taxes on production	10 721	568	-55	943	6 227	13 413	39 855	8 819					
M1	MD - Food and beverage industry	0.06	0.08	0.09	6	90	771	2 069	7 034					
M2	ME - Petroleum products, chemicals, and plastics	35	14	33	1 072	1 869	16 185	6 681	23 039					
M3	MG - Manufacture of electrical, electronic, and transport goods	245	14	49	7 592	3 614	2 915	7 052	39 295					
M4	MO - Other imports	1 615	743	683	4 629	8 963	13 190	14 734	66 337					
H1	Households_1 (low income)									511 565	74 265			
H2	Households_2 (middle income)									1 572 433	290 782			
H3	Households_3 (high income)									2 470 172	3 931 971			
S1	Public non-financial corporations										745 065			
S2	Private non-financial corporations										3 027 685			
S3	Financial corporations										375 349			
G	G Government											721 986		
RM	RM Rest of the world												224 188	1 123 794
S	S Savings										2 567 230			
	UFOS													
	Total expenditure	405 957	67 665	44 963	430 799	748 921	584 039	1 010 109	4 232 463	4 554 170	11 012 348	721 986	224 188	1 123 794

Tabla 12. Matriz de Contabilidad Social México 2013 (*continuation*)

		M3	M4	H1	H2	H3	S1	S2	S3	G	RM	I	UFOS	TI
Productive sectors	A - Agricultural and non-agricultural primary sector			34 552	55 485	47 067					110 404	49 224	24 045	810 711
	211 - Oil and gas extraction										539 826		-1 143	1 032 962
	B - Mining			939	1 797	2 365					44 129	166 771	2 323	436 639
	C - Construction and related services			16 694	30 196	69 262				9 268	4 662	1 879 322	0	2 550 560
	D - Food and beverage industry			370 724	595 320	505 006					148 335	2 089	17 368	1 940 345
	E - Petroleum products, chemicals, and plastics			126 355	220 823	320 491					293 354	1 962	21 598	2 106 340
	F - Mineral and non-metallic industries			14 510	27 768	36 552					348 481	53 971	2 148	1 128 497
	G - Electrical, electronic, and transportation manufacturing			101 219	268 009	363 006					2 538 103	302 942	-324 617	3 539 933
	H - Other industries			61 073	116 881	153 853				2 796	249 400	26 683	-4 373	923 046
	I - Grocery, food, beverages, ice, and tobacco trade			375 627	603 193	511 685					468 493	256 911	197	3 385 466
	J - Transportation and warehousing services			148 209	392 430	531 529					129 509	111 184		1 694 287
	K - Telecommunications			57 501	110 044	144 854				622	2 549	7 375		550 578
	521 - Central Banking									4 066				18 371
	522 - Multiple banking			6 849	45 929	270 399					1 602			405 957
	5222 - Economic Development Financial Institutions			5 031	10 715	43 094								67 665
	5223 - Credit Unions and Savings Institutions			3 790	8 072	32 463								44 963
	541 - Professional, scientific, and technical services			8 506	16 279	21 429				20 303	1 241	2 827		430 799
	611 - Educational services			18 404	46 163	98 692				579 469		371		748 921
	L - Medical services and social assistance			27 779	45 337	89 171				413 987		1 634		584 039
	M - Public sector			9 858	18 866	24 834				945 847		205		1 010 109
	N - Other services			508 531	973 219	1 281 073				9 696	35 789	18 517		4 232 463
W	D.1 - Remuneration of employees										11 316			4 554 170
K	Gross operating surplus													11 012 348
TY	Net taxes on production			111 992	214 328	282 126					0.57	16 662		721 986
M1	MD - Food and beverage industry			34 613	55 583	47 151						68		224 188
M2	ME - Petroleum products, chemicals, and plastics			19 235	33 996	37 357						7 202		1 123 794
M3	MG - Manufacture of electrical, electronic, and transport goods			33 170	87 828	118 959						464 062		2 455 708
M4	MO - Other imports			22 912	43 848	57 718						66 431	219 762	1 445 089
H1	Households_1 (low income)			600	2 036	4 491	2 717	491 070	58 550	256 670	107 019			1 508 983
H2	Households_2 (middle income)			989	3 358	7 405	4 346	785 380	93 641	400 494	136 016			3 294 843
H3	Households_3 (high income)			1 098	3 726	8 218	7 722	1 395 575	166 395	699 882	101 035			8 785 795
S1	Public non-financial corporations			350	1 188	2 621	836	9 988	6 633	8 015	563			775 260
S2	Private non-financial corporations			9 610	32 622	71 944	6 971	83 284	98 562	40 586	55 775			3 427 038
S3	Financial corporations			32 492	110 303	243 259	25 630	292 938	180 930	162 800	43 159			1 466 860
G	G Government			81 814	277 741	612 524	886 549	653 499	68 012	2 244 131	1 698		3 974	5 551 928
RM	RM Rest of the world	2 455 708	1 445 089	1 081	3 669	8 091	24 320	412 414	66 469	143 225				5 908 049
S	S Savings			-2 377 676	289 346	3 595 612	-184 209	-696 733	469 526	-388 291	386 484			3 661 290
	UFOS									-1 639	152 152			152 152
	Total expenditure	2 455 708	1 445 089	-131 571	4 746 099	9 644 299	774 883	3 427 416	1 208 719	5 551 928	5 911 094	3 436 410	-37 079	

Source: compiled by the authors using data from INEGI, based on Blancas (2006 and 2010), Núñez and Romero (2020), Casares et al. (2017), and Cardona et al. (2018).

The robustness of the matrix's findings becomes clear when the economic aggregates from the SAM-Mexico 2013 are compared against data from the National Accounts (see Table 13).

Table 13. Comparison of macroeconomic aggregates between the SAM-Mexico 2013 and the SNA of Mexico 2013 (millions of pesos at 2013 prices).

Variable	*MCS-Mexico 2013*	*National Accounts-INEGI*
GDP	16 288 503	16 277 187
Intermediate consumption[a]	8 091 685	8 091 685
Exports	4 915 878	5 068 030
Imports	5 248 780	5 251 825
Aggregate supply	27 642 648	27 642 648
Savings	3 436 410	3 661 290
FBKF	3 661 290	3 661 290

Note: [a] Intermediate imports not included.
Source: compiled by the authors using data from the SAM-Mexico 2013 and INEGI (2018c).

In the SAM-Mexico 2013, a total value of MXN$ 83,712,129 million was obtained on the expenditure side (column 39 T-Income), similar to that obtained on the expenditure side (line 39 T-Expenditure); however, there is a discrepancy of MXN$152 billion, equivalent to 0.18% of the total value of income and expenditure in the matrix, as recorded in the UFOS column. This is due to the fact that in some cases, the values of the line items do not have an exact match with their respective column.

Resolving the discrepancy between total income and expenditures requires examining in greater detail at least three account transactions that report inconsistencies of origin: total imports reported in the IOM concerning the value of imports in the ISA; the payment of remunerations from the rest of the world to households (distinct from the value reported for remittances); this value is reported in the ISA, but not in the IOM; and the transfers made between inter-agency sectors in sub-account D.759- Other miscellaneous current transfers. Other miscellaneous current transfers; this ISA account is the only one that does not comply with the double-entry principle (Total debits=Total credits).

4. ANALYSIS OF RESULTS

The findings from the SAM-Mexico 2013 (see Table 13) reflect the state of the Mexican economy's productive structure and institutional sectors. In addition to production, the matrix includes the distribution of income and expenditure of the sectors, thus completing the bridge of analysis that forms a methodological tool for the study of economic development from an inter-institutional perspective of the Mexican productive structure.

A brief accounting analysis of the Mexican economy illustrates the usefulness of the SAM-Mexico 2013. Here, it should be noted that the current characteristics of the productive structure and income distribution are the result of neoliberal policies that, since the 1980s, have skewed the economy outward, thus promoting a strong dependence on international markets, imported inputs, and foreign direct investment, causing an outflow of economic surplus through trade balance deficits, profit remittances from foreign companies, and capital flight (Puyana, 2020; Romero, 2020; Blancas, 2015). This translates into low economic growth rates with high-income concentration, along with higher levels of poverty and social exclusion of sectors of the population with lower levels of income and social opportunities[7] (Blancas and Aliphat, 2020).

Quadrant I of the SAM shows that intermediate consumption represents 29% of total supply, while imports account for 14%; a ratio of almost 2 to 1 between local and imported inputs. Additionally, 48% of total imports consist of electrical, electronic, and transportation goods, with subsector G-Manufacture of electrical, electronic, and transportation goods concentrating 75% of the demand for these imported goods.

Table 14 shows the export trend of the primary and secondary sectors; more than 25% of their demand corresponds to exports. This is characteristic of the so-called global economies (List, 1997), which, unlike national economies, do not privilege the development of national productive forces. Within a national economy, the objective is to ensure that production supplies the domestic market and not global production chains. On the production side, the main problem is imports from the secondary sector, as this sector, instead of functioning as an axis of integration between the primary and tertiary sectors within the national economy, serves as an articulator in the global economy at the expense of the national production system (Romero and Aliphat, 2019; Vázquez, 2020).

Table 14. Composition of total demand and supply by economic sector in 2013 (percentage of the total by sector of economic activity)

Economic sector	Total demand				Total supply		
	Domestic		Exports	Total demand (%)	Domestic production	Foreign (imports)	Total supply (%)
	Inputs	Final consumption					
Primary sector	59	15	27	100	94	6	100
Secondary sector	26	44	29	100	74	26	100
Tertiary sector	28	67	5	100	96	4	100

Source: compiled by the authors based on SAM-Mexico 2013.

In terms of institutional sectors (see Table 15), the breakdown of productive sectors and intermediate imports (15A) shows that 64% of imports correspond to intermediate goods and services destined for the secondary sector. Under the conditions of the SAM-Mexico 2013, greater demand from the secondary sector could increase imports, and an economic policy focused on promoting a greater demand for secondary goods would result in trade deficit balances with little effect on the national economy.

Table 15. Destination of imports by productive sector, type of household, and type of investment asset 2013 (percentage of total imports).

Import destination	Intermediate	Consumption	Investment
15A Productive sectors			
Primary sector	2.55		
Secondary sector	63.91		
Tertiary sector	11.07		
Subtotal	77.53%		
15B Homes			
Low-income		2.19	
Medium-income		4.40	
High-income		5.19	
Subtotal		11.78%	
15C Investment by type of asset			
MD - Food and beverage industry			0.001
ME - Petroleum, chemical, and plastics products			0.14
MG - Electrical, electronic, and transportation goods			9.23
MO - Other imports			1.32
Subtotal			10.69%
Total imports		100%	

Source: compiled by the authors based on SAM-Mexico 2013.

In terms of households (see Table 15B), 11% of total imports correspond to consumer goods, and there is a direct relationship between household income and the demand for imported consumer goods. Encouraging households to reduce their consumption of imported goods would strengthen the national economy. Furthermore, government transfers would strengthen the national productive structure through greater household demand, thus leading to greater economic growth, in addition to having a positive effect on income distribution and poverty reduction.

Table 15C shows that 10% of total imports correspond to investment assets, of which electrical, electronic, and transportation goods are the most demanded, with a 9 to 10 ratio. This indicates that there is a potential market for the production of capital goods in Mexico, equivalent to MXN$ 464 billion, a value higher than the national consumption of goods in the primary sector, according to data from the SAM.

The way in which added value is distributed among institutional sectors, as a result of the productive structure, is one of the central aspects that the SAM-Mexico 2013 makes visible. Table 16 indicates that 54% of remuneration payments and 39% of EBO correspond to high-income households, with 3.7% of remunerations going to low-income households. This shows that an economic policy strategy focused solely on economic growth will result in greater income concentration, accompanied by the inevitable effects on poverty growth (Expósito *et al*., 2017).

Table 16. Distribution of added value by institutional sector in 2013 (billions of pesos at constant 2013 values)

Household type	*Remunerations*	*%*	*EBO*	*%*
Low-income	511	11	74	0.6
Medium-income	1 572	34	291	2.6
High-income	2 470	54	3 932	35.0
Households subtotal	4 554	100	4 297	39.0
Type of corporation			*EBO*	*%*
Public non-financial corporations			745	6.7
Private non-financial corporations			3 028	27.4
Financial corporations			375	3.4
		Corporation subtotal	4 148	38
Depreciation			2 567	23.4
Total value-added	4 554	100	8 445	100.0

Source: compiled by the authors based on SAM-Mexico 2013.

Of the added value distributed between companies, 27% (corresponding to EBO), goes to private non-financial corporations with national or foreign control, while only 3.4% goes to financial corporations, and 6.8% to public non-financial corporations; findings indicate that private non-financial corporations lead the concentration of EBO (19% of total value-added). Capital replacement (depreciation) accounts for 23% of total value-added.

The total income of the institutional sectors is made up of payments for productive factors and inter-institutional transfers. When institutional sector income is disaggregated, it can be seen that low-income households receive 17% of their income from government transfers and 7% from transfers from the rest of the world (remittances) (see Table 17). Income generated by financial corporations has a high ratio with the government (11% of their income). Additionally, the rest of the world is closely related to non-financial corporations, which means that about 9% of their income corresponds to the payment of profits or transfers made by domestic financial corporations in the hands of non-residents.

Table 17. Proportion of income earned by institutional sector in 2013 (percentage of total income by institutional sector).

Institutional sector	*Factor income*	*Households*	*Corporations*	*Government*	*Rest of the world*	*Total income (%)*
Households (average)	65	0.2	22	10	3	100
Low income	39	0.5	37	17	7	100
Medium income	57	0.4	27	12	4	100
High income	73	0.1	18	8	1.1	100
Corporations (average)	73	8.9	12	4	2	100
Public non-financial corporations	96	0.5	2	1.0	0.07	100
Private non-financial corporations	88	3.3	6	1.2	2	100
Financial corporations	26	26	34	11	3	100
Government	13	18	29	40	0.03	100
Rest of the world	89*	0.2	9	2	NA	100

Notes: * The rest of the world receives income from imports from the domestic economy, which are recorded in the factor payment table; NA: Not Applicable.

Source: compiled by the authors based on SAM-Mexico 2013.

Analyzing the way in which the institutional sectors spend their resources is essential for understanding the flow of money in the economy, and also allows for the formulation of government transfer strategies with a greater effect on the development of the domestic market. Table 18 presents spending by institutional sectors; households spend 4.7% of their income on the rest of the world, mainly on imports of consumer goods, with high-income households spending the largest amount of resources on the rest of the world (16%), a figure that is even higher than the proportion spent on government (14%). Low-income households allocate a greater proportion of their income to consumption, so their spending has a greater effect on the development of the domestic market. Private non-financial corporations allocate 10% of their income to transfers from abroad; the data suggest a structural flight of capital in the Mexican economy. Government spending is concentrated in consumption (33%) and transfers to households (22%). Finally, the rest of the world concentrates 92% of its income in consumption (exports from the national economy), 6% in transfers to households, and only 2% in transfers to companies, a figure that contrasts with the income it obtains from corporations.

Table 18. Spending by institutional sector in 2013
(percentage of total income of each institutional sector)

Institutional sector	*Households*				*Corporations*			*Total*	*Government*	*Rest of the world*
	Low	*Medium*	*High*	*Total*	*Public non-financial*	*Private non-financial*	*Financial*			
Consumption	84	80	75	79					33	92
Direc taxes	5.0	4.8	4.7	4.8					NA	0.0
Imports	4.9	5.0	4.3	4.6					NA	NA
Transfers	6	10	16	12	100	100	100	100	67	8
Households	0.1	0.2	0.3	0.25	2	65	43	52	23	6
Low-income	0.03	0.05	0.07	0.06	0.3	12	8	9	4	2
Middle-income	0.04	0.1	0.12	0.09	0.5	19	13	15	7	3
High-income	0.05	0.1	0.14	0.10	0.8	34	23	27	12	2
Corporations	1.9	3.2	5.3	4.0	3.5	9	39	12	4	2
Government	3.6	6.2	10	7.6	92	16	9	28	38	0.03
Rest of the world	0.0	0.08	0.13	0.10	3	10	9	9	2	NA
Total	100	100	100	100	100	100	100	100	100	100

NA: Not Applicable.

Source: Compiled by the authors based on SAM-Mexico 2013.

Finally, Table 19 analyzes the composition of investment (FBKF) in the economy. It can be seen that 66% of investment is concentrated in the secondary sector; however, 54% is directed to construction. As can be seen in the SAM, investment in Mexico is mainly in buildings and not in machinery; 7.5% of investment spending in the services sector is concentrated in the I-Shopping, food, beverages, ice, and tobacco sector, and only 0.2% goes to the K-Telecommunications sector. Seventy times more is spent on FBKF for final primary consumer goods stores than on Information and Communication Technologies (ICT).

Table 19. Investment Destination (FBKF)
(billions of pesos at 2013 prices)

Investment	*Value*	*%*
Primary sector	215 994	6.3
Secondary sector	2 266 968	66.0
C-Construction and related services	1 879 322	54.7
D-Food and beverage industry	2 089	0.1
E-Petroleum products, chemicals, and plastics	1 962	0.1
F-Mineral and non-metal industries	53 971	1.6
G-Manufacturing of electrical, electronic, and transportation goods	302 942	8.8
H-Other industries	26 683	0.8
Tertiary sector	399 023	11.6
I-Grocery, food, beverages, ice, and tobacco trade	256 911	7.5
K-Telecommunications	7 375	0.2
Imports	537 763	15.6
MD-Food and beverage industry	68	0.0
ME-Petroleum products, chemicals, and plastics	7 202	0.2
MG-Manufacturing of electrical, electronic, and transportation goods	464 062	13.5
MO-Other imports	66 431	1.9
Indirect taxes	16 662	0.5
Total	3 436 410	100.0

Source: compiled by the authors based on SAM-Mexico 2013.

Regarding imports of investment assets, the Mexican economy is supplied with capital goods mainly from abroad; the percentage of imports related to electrical, electronic, and transportation goods is equivalent to the total expenditure per FBKF of the secondary sector (with the exception of construction spending). The data presented in Table 19 indicates that for every 100 pesos allocated to investment in Mexico in 2013, 54 were spent on construction activities, 15 on importing capital goods, and only 11 on domestic machinery and equipment.

5. CONCLUSIONS

The accounting analysis derived from the elaboration of the SAM-Mexico 2013 allows us to delve deeper into the intra- and inter-institutional relations of a systemic economy, finding a productive structure that is highly linked to the exterior and in which severe income distribution problems persist. The information provided by the SAM suggests that government transfers to households represent an increase in imports of intermediate goods, which is a crucial to the study of effective demand and economic growth.

In terms of economic development, the accounting analysis of the SAM-Mexico 2013 shows that low-income households are highly dependent on government transfers and resources from outside the economy (remittances); therefore, this category of households must increase their income obtained from the productive sphere, either through higher wages or through EBO, if possible. One proposal that could be derived from this analysis is to consolidate cooperatives that distribute the EBO generated among workers.

As a result of the accounting analysis, this article will allow for future economic development studies that consider the use of the SAM-Mexico 2013 and deepen the inter-institutional analysis through accounting multipliers and/or computable general equilibrium models.

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[1] In 1973 Leontief was awarded the Nobel Prize in Economics for his theoretical and empirical contributions on the Input-Output Model.

[2] In 1984 Stone was awarded the Nobel Prize in Economics for his contributions to the system of national accounts, including his approaches to the SAM, which were adopted by the United Nations (UN).

[3] According to the UN (1993), as no standardized method exists, data from the IOM or supply and use tables can be used.

[4] In the case of the 2014 ENIGH, only the percentage structure of income/expenditure by household decile is taken, and not the absolute values, and it is assumed that the composition for 2014 is the same as that of 2013.

[5] INEGI's glossary of national accounts (2018b) defines the characteristics of each institutional sector.

[6] The data in the IOM does not allow for the determination of the demand for goods and services for previous or future periods.

[7] Between 1994 and 2013, the annual GDP growth rate was 2.4% and the exports growth rate was 6.4%. In this same period, the Human Development Index barely went from 0.647 (1992) to 0.756 (2013); according to CONEVAL data, by 2014, 46% of the population was in poverty and 58% lacked social security.