The Macroeconomic Social Accounting Matrix of Algeria in 2009

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Abstract:

This paper presents the 2009 Social Accounting Matrix (SAM) for Algeria which was assembled as part of a project aimed at analysingsome characteristics of the Algerian economy from the social accounting matrix. The SAM disaggregates the production activities, labor and households accounts, and gives us the possibility to engage in a detailed analysis of the productive structure of the economy, as well as of the income distribution channels. The paper describes both, the macroeconomic and microeconomic SAMs, paying special attention to data sources, and to the analysis that which deal the Algerian productive system and its economic relations with the rest of the world.The method used in this analysis is based on the input-output model of Leontief and multipliers.

Keywords: SAM, Algerian Economy, Leontief Model, Multipliers.

1-Introduction

A SAM is a particular representation of the macro and micro economic accounts of asocio-economic system, which capture the transactions and transfers between all economic agents inthe system (Pyatt and Round, 1985; Reinert and Roland-Holst, 1997). In common with othereconomic accounting systems it records transactions taking place during an accounting period,usually one year. The main features of a SAM are threefold. First, the accounts are represented as asquare matrix; where the incomings and outgoings for each account are shown as a correspondingrow and column of the matrix. The transactions are shown in the cells, so the matrix displays theinterconnections between agents in an explicit way. Second, it is comprehensive, in the sense that itportrays all the economic activities of the system (consumption, production, accumulation anddistribution), although not necessarily in equivalent detail. Thirdly, the SAM is flexible, in that,although it is usually set up in a standard, basic framework there is a large measure of flexibility bothin the degree of disaggregation and in the emphasis placed on different parts of the economic system.

As it is an accounting framework not only is the SAM square but also the corresponding row andcolumn totals must be equal. Clearly, at one extreme, any set of macroeconomic aggregates can beset out in a matrix format. But this would not be a ‘social’ accounting matrix in the sense in which theterm is usually used. An overriding feature of a SAM is that households and household groups are atthe heart of the framework; only if there exists some detail on the distributional features of thehousehold sector can the framework truly earn the label ‘social’ accounting matrix. Also, a SAMtypically shows much more detail about the circular flow of income, including transactions betweendifferent institutions (including different household groups) and between production activities, and inparticular recording the interactions between both these sets of agents via the factor and productmarkets.

The origins of matrix accounting go back a long way, but it is generally acknowledged that SAMs wereinitially due to the pioneering work of Sir Richard Stone in the 1960s based on the United Kingdomand some other industrialised countries. These ideas were further developed and used to helpaddress poverty and income distribution issues in developing countries by Pyatt, Thorbecke andothers from early in the 1970s onwards (Pyatt and Thorbecke, 1976). A large number of SAM-basedmultiplier studies have since followed, some of the earliest being for Sri

Lanka (Pyatt and Round,1979), Botswana (Hayden and Round, 1982), Korea (Defourny and Thorbecke, 1984), Indonesia(Thorbecke, et al, 1992), and more recently, for Ghana (Powell and Round, 2000) and Vietnam (Tarp,Roland-Holst and Rand, 2002).). In all of these studies the aim has been to examine the nature of themultiplier effects of an income injection in one part of an economic system on the functional andinstitutional distribution in general and on the incomes of socio-economic groups of households inparticular. It should be noted that some similar multiplier analyses that aimed to close the input-output model with respect to households by incorporating a (Keynesian-type) income-expenditureloop within an input-output framework, were proposed by Miyazawa (1976) and others also in theearly 1970s (see Pyatt, 2001 for a discussion of this earlier history).

Three principal motivations underlie the development of SAMs. First, the construction of a SAM helpsto bring together data from many disparate sources that help to describe the structural characteristicsof an economy. A SAM can also be used to good effect in helping to improve the range and quality ofestimates, by highlighting data needs and identifying key gaps. Secondly, SAMs are a very good wayof displaying information; the structural interdependence in an economy at both the macro and mesolevels are shown in a SAM in a simple and illuminating way. A SAM shows clearly the linkagebetween income distribution and economic structure and, of course, this is especially important in thecontext of this volume. Thirdly, they represent a useful analytical framework for modelling; that is,they provide a direct input into a range of models, including fixed-price multiplier models and are alsoan integral part of the benchmark data set required to calibrate computable general equilibrium (CGE)models (Pyatt, 1988).

In summary, a suitably-designed and disaggregated SAM shows a great deal about the structuralfeatures and interdependencies of an economy. It represents a snapshot of the transactions (flows)taking place in a given year. The SAM is a meso-level framework: it serves as a useful bridgebetween a macro framework and a more detailed description of markets and institutions. Of coursethe detail in the SAM might not be limited to the real economy, and there are some notable examplesof SAMs and SAM-based models that incorporate the financial sectors and the flow of funds (seeSadoulet and de Janvry, 1995). Clearly the economic structure of the SAM may change as theeconomy changes and responds to shocks. A more formal modelling approach should thereforeinclude structural or behavioural specifications for the various groups of transactions. This isespecially true for example if the structure changes as a result of changes in relative prices.

However, often as a first-cut ex ante analysis, a SAM has frequently been used to examine the partialequilibrium consequences of real shocks, using a multiplier model that treats the circular flow ofincome endogenously. The circular flow captures the generation of income by activities in producingcommodities, the mapping of these income payments to factors of production of various kinds, thedistribution of factor and non-factor income to households, and the subsequent spending of income byhouseholds on commodities. These patterns of payments are manifested in the structure of the SAM,and are modelled analogously to the input structure of activities in an input-output model based onlyon inter-industry transactions. However, it is important to stress that the results differ from input-outputby virtue of the fact that input-output multipliers are augmented by additional multiplier effects inducedby the circular flow of income between activities, factors and households. A main outcome of SAM-Based multiplier analysis is to examines the effects of real shocks on the economy on the distribution ofincome across socio-economic groups of households. One other important feature of SAM-basedmultiplier analysis is that it lends itself easily to decomposition,thereby adding an extra degree oftransparency in understanding the nature of linkage in an economy and the effects of exogenousshocks on distribution and poverty.

The objective of this paper is the construction of asocial accounting matrix for the Algerian economy.Before starting the development of this SAM, the paperpresents an analysis that dealswith the Algerian productive system and its economic relations with the rest of the

world.The method used in this analysis is based on the input-output model of Leontiefthrough the calculation of a number of indicators and by making a distinguishing between the imported inputs and those produced locally.This distinction in the inputs used to measure the degree of dependence of the Algerian productive system towards the outside, anddistinguish potentially user's imported inputs and their impact on economic recovery.This analysis also allows us to highlight the role of final demand in economic growth and its impact on income.

2- The Algerian productive system and imported input

2-1-Theoretical Foundations

The goal of input-output analysis is to study the inter-relationships among different parts of the economic system.Thereof, called branches or sectors, are the units of economic activity. The input-output analysis focuses on flows between branches and tries to quantify these interdependencies within the productive system by analyzing the way in which the output of a branch is used as input by other branches.The input-output model of Leontief is based on the table of inter-industry trade, also called input-output table (IOT) Michel.P.Todaro (1984).In the formalization of this analysis, used the following notations:

Ci:Matrix of total intermediate consumption (of local originand imported).
:Ci^m Imported intermediate consumption matrix.
V:Matrix of technicalcoefficientsof primaryinputs (Value added).
A:Matrix of technical coefficients of total intermediate inputs.
A^d:Matrix of technical coefficients of intermediate inputs of local origin.
A^m:Matrix of technical coefficients of imported intermediate inputs.
F:Vector of final demand.
F^m: Vector of final demand imported.
F^d:Vector of final demand of local origin.
Y:Vector of primary inputs(Value added).
Xs:Vectorproductionbyproduct group.
Xsd: Diagonal matrix production.
M:Vector of intermediate imports by product group.
Df:Diagonal matrix of final demand.
Df^d:Diagonal matrix of final demand of local origin.
I:Unitary matrix; *I1*:Vectors formed of 1.
We have the following identities:

$$A = A^d + A^m \quad (1)$$

and

$$Xs = (1 - A)^{-1}F \quad (2)$$

The reasoning above can be adapted to an analysis to separate the intermediate local origin of the imported consumption.A macroeconomic point of view, final demand is equivalent to the sum of value added and imports, ie:

$$Xs + M = Ci + F \quad (3)$$

and

$$Xs + M = Y + Ci + Ci^m + F^m \quad (4)$$

from (3) and (4),deduced:

$$Ci + F = Y + Ci + Ci^m + F^m \quad (5)$$

Subtracting$F^m$from both sides of the equation (5), have:

$$F - F^m = Y + Ci^m \text{و} F^d = Y + Ci^m \quad (6)$$

2-2-Calculation of the cumulative costs

The methodology of calculation of the cumulative costs is largely based on the method ofAvonds,Degel and Gilot (2003).theequation (6) shows that the final demand for domestic production consists of value added and imported intermediate imports.The study of the structure of the cumulative costs is interesting when it comes to assessing the effect of changes in input prices imports on prices of locally produced goods.The cumulative matrix for domestic production is:

$$(I - A^d)^{-1} Df^d \quad (7)$$

The cumulative matrix of primary inputs by component is given by:

$$V(I - A^d)^{-1} DF^d \quad (8)$$

The columns of the matrix obtained by (7) give the cumulative effects (direct and indirect) on the remuneration of the factors of production to meet final demand produced locally.Total cumulative primary inputs by product of final demand of domestic origin are given by:

$$(I1)'V(I - A^d)^{-1} Df^d \quad (9)$$

The matrix of intermediate imports is given by

$$A^m(I - A^d)^{-1} Df^d \quad (10)$$

The total cumulative intermediate imports by product obtained from the final demand of domesticorigin:

$$(I1)'A^m V(I - A^d)^{-1} Df^d \quad (11)$$

By adding the cumulative primary inputs (9) and intermediates imports combined (11), the final demand for products of domestic origin is obtained as following.

$$(I1)'A^m V(I - A^d)^{-1} Df^d + (I1)'V(I - A^d)^{-1} Df^d = F^{d'} \quad (12)$$

given that:

$$(I1)'(A^m) = (I1)'(I - A^d)$$

In actuality,calculatesthecumulativecostsensure thatall intermediateinputslocallybecomevalueaddedand eventuallydisappear.The cumulative costs can be also calculated for each component of final demand:

$$V(I - A^d)^{-1} Df_i^d \quad (13)$$
$$A^m(I - A^d)^{-1} Df_i^d \quad (14)$$

$(Df_i)^d$ is the vector of the i^{th} component of final demand of origin domestic by product.

2-3- Multipliers calculating

Multipliers showing the cumulative change in final demand on production and primary inputs and this ratio as compared to the direct effect.We use the output multipliers and the income multiplier.

Output multipliers are defined as the ratio between the cumulative effect and the direct effect on the production engendered a unit change in final demand for a product made locally.The total aggregate output is given by:

$$(I1)'(I - A^d)^{-1}Df^d \quad (15)$$

The element j of this vector is equal to the cumulative total of each product generated by the change in final demand of domestic origin of the product j.direct effect on domestic output is given by the final demand itself.Output multipliers by product are equal:

$$(I1)'(I - A^d)^{-1}\mathrm{Df}^{\mathrm{d}}\left(Df^{\mathrm{d}}\right)^{-1} = (I1)'(I - A^d)^{-1} \quad (16)$$

The equation (16) shows that the output multipliers are total columns of the Leontief inverse matrix.

Revenue multipliers are defined as the ratio between the cumulative effect and the direct effect engendered a change in final demand of domestic origin on primary inputs by product.Cumulativeprimaryinputsare givenby equation (9).Direct primary inputs are limited to an effect in the branch of corresponding product:

$$(I1)'Vdf^d \quad (17)$$

Finally, the income multiplier is given by the ratio of equation (18):

$$(I1)'V(I - A^d)^{-1}Df^d[(I1)'V \times Df^d]^{-1} = (I1)'V(I - A^d)^{-1}Df^d[(I1)'V]^{-1} \quad (18)$$

2-4-Data and empirical results

Data used in this analysis concerning input-output tables of Algeria in 1999 and 2002 with the classifications (NSA with 19 sectors and NAPR with 94 sectors respectively). It should be emphasized that this analysis is performed on data for the year 2002. Moreover, the matrix of intermediates consumption of IOT for 2002 was disintegrated betweenlocal and imported inputs where the originality of this analysis for the Algerian economy.

2-4-1-Content inintermediate import and value added in the final demand satisfied by national production

The results obtained for the cumulative costs calculated with equation (12).They show that overall of the final request to the national production apparatus turns into value added for agriculture and energy, whosethe value of imported inputs remains very low.However, industrial products have a value-added content below the intermediate imports.This shows the dependence of the industrial sector of imported inputs (8), (9).The rest of the industrial products record intermediate import ratesclose to 50% of final demand (1), (3), (4), (5) and (6) as well as the

sector of chemical industry, rubber and plastic.These results show the Dependency of this sector to the vagaries of the international situation.Figure (1) shows the same indicators by major commodity groups and confirms the results obtainednamely a dominance of imported inputs in the areas of food-industry and industry whose costs depend more on imported inputs.Sectors of agriculture, the energy and petroleum products have a value-added content very high 93.38% and 92.17% respectively.

2-4-2-Contentin intermediate import and value added by component of final demand

Content of value added and intermediate imports by component of demand (final consumption including government spending, investment including changes in inventories and exports) calculated by equations (13) and (14),shows that the cost structure varies from one component to another (Figure 2).Thus, the content values added prove very important in exports (96.77%) against a low intermediate imports rate (3.23%).this result indicates a low level of integration of the Algerian production system and confirms the dominance of the hydrocarbon sector in the national economy.

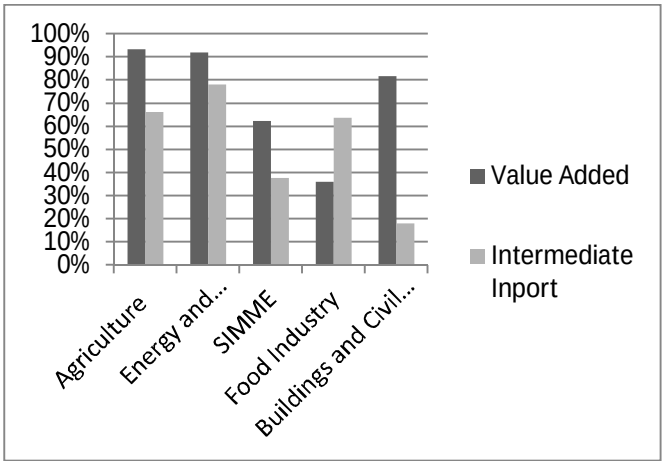

Figure 1: Content in intermediate import and value added by products group

Comparison of these results with those obtained for foreign economies shows significant differences.For information only, the share of intermediate imports for the manufacture of exported products is 43% for the Belgian economy.

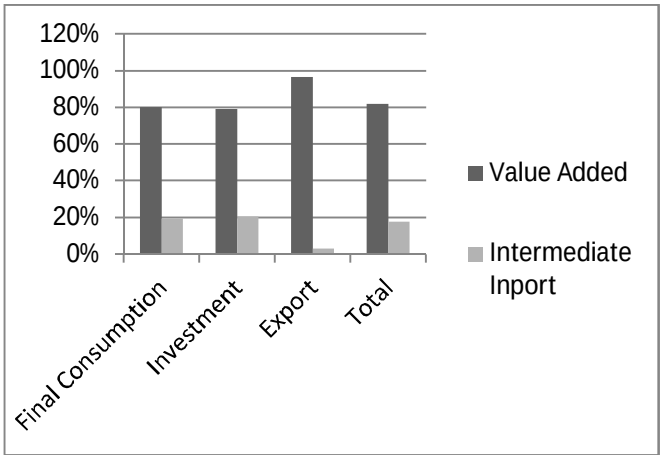

Figure 2: Content in intermediate import and value added by component of final demand

2-4-3-Calculation of output multipliers

Output multipliers provide direct and indirect effects of a change in final demand for a good on the whole economy.Analysis of the results on output multiplier using two matrices of intermediate inputs local and imported shows that sectors including importedintermediate consumption is important, has a higher output multiplier to multipliers from the local inputs matrix.Thus, the industry sectors which depend on outside inputs have high multipliers production like sectors,other plastic intermediate goods, rubber products, fats, soft drinks, milk and dairy products, canned fruits and vegetables, food products not elsewhere classifiedwhich presentingmultipliers which have two to three times, those using local inputs.Can also observe that in the sector of sugar produced has a multiplier equal to 7.04.These results show that any efforts to revive the industrial sector by final demand inevitablyrequire a change the structure of the production system by promoting the use of locally produced inputs.

Results also indicated clearly that the multipliers more than a third of sectors (37 sectors) and whose multipliers are derived from the matrix of imported inputs are superior to their counterparts calculated with the matrix of local inputs.These sectors are in their majority in the steel industry, mechanical, metallurgical and electrical (SIMME) and food-industry.

2-4-4-Calculating the income multipliers

Calculating revenue multipliers is given by equation (18).Theanalysis of the results shows that the hydrocarbons sector remains and far the first generator of income.Thus, the refined petroleum product has a multiplier income 23.03, followed very distantly by sector products for animal feed with 5.31 and liquefied natural gas sector with 3.76.Sectors meats and canned meat and fish, and sector of canned fruits and vegetables have very significant multipliers income, 3. 1 and 3.2 respectively.Sectors of phosphate ores and fertilizers and pesticides have multipliers 2.51 and 2.4 respectively.The rest of the sectors have the multipliers less than 2.0.These results mean that the creation of wealth remains subordinate to petroleum products and some sectors within small and medium enterprises.

Figure 3 shows the results of income multipliers by component of final demand.Noting that exports have a high multiplier (1.65).This confirms the results discussed above, that is to say, the dominance of the hydrocarbons sector in the generation of income.This has the effect of strengthening relative contribution of this sector to GDP over the investment which ranks second in matters of income generation with a multiplier (1.43) and this is due to the acceleration of investment during this period, and thefinal consumption have a multiplier of 1.29.

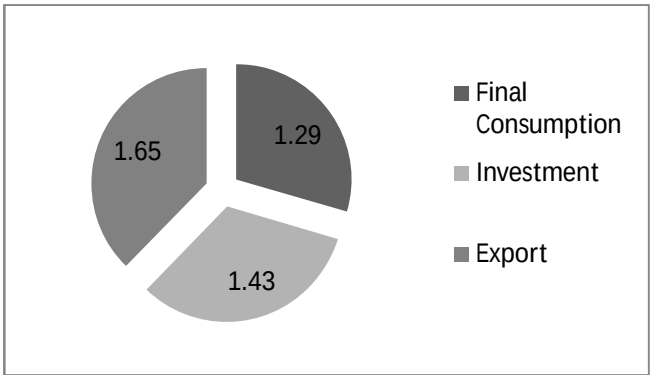

Figure 3: income multipliers by component of final demand (per unit of final demand)

Figure 4 complete figure 2 relative to cumulative costs where different components of final demand are decomposed into added value and import.In this case, the value added content of different categories of final demand is broken down into direct and indirect value added.Direct value added by component of final demand is obtained by dividing the total effect by the multiplier of income.The results of this division are represented by the histogram hereinafter.

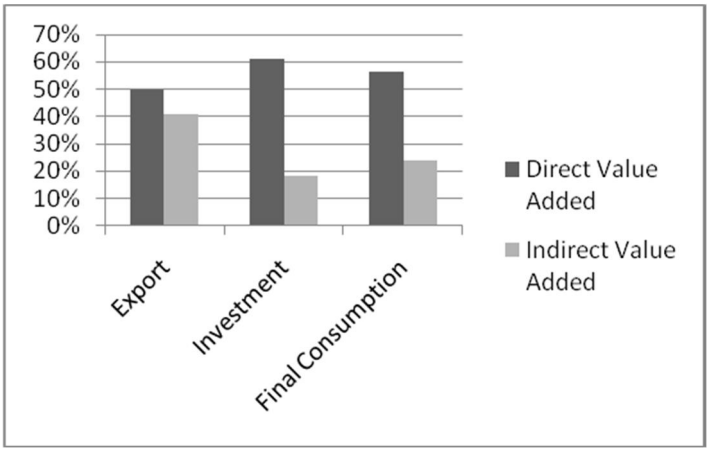

Figure 4: The direct and indirect value added by component of final demand

Indirect value added is obtained by subtracting the direct value added of the total effect.The results in Figure 4 are interesting and permit to good choose the policy for economic recovery through final demand, due to its established efficacy.

Thus, remarked that the effect of final demand on exports implies a generation of value added in the export sectors and in the rest of the economy with more or less similar proportions (49.8% and 40.97 %).The effect of final demand on investment is essentially limited to a preponderant direct effect (60.98).The indirect effect is moderate with only 18.29%; this denotes the low propagation of the investment effects on the rest of the economy.For thefinal consumption, the direct effect of the value added outweighs widely about indirect effect.

3-The Social Accounting Matrix for the Algerian Economy in 2009.

In this section, we present a numerical social accounting matrix of the Algerian economy for 2009.this matrix represent of the macro and meso economic accounts of asocio-economic system of Algeria, which capture the transactions and transfers between all economic agents inthe system, and we usedyear 2009 because the last IO table available is for this years.

3-1-The data sources used

Sources used for the construction of this SAM, the first is input-output table (IOT) for 2009which is a table that already has the balance resources uses of goods and services and the various intermediates consumption data,decomposition of value added compensation wages and gross operating surplus. This IOT consists of 19 industries according to the classificationestablished by the system the Algerian economic accounts (SAEA).The second data source used is the ensemble economic table (EET, 2009).In this table the data used in four accounts:production account,operating account,account income and expenses, and investment account.According to the classification of SAEA, in the EET 2009there are 5 agents: companies (C), households and individual enterprises (HIE), government (G),financial institutions (FI) and the rest of the world (ROW).

To the sides of these two data sources,important for the development of a SAM in general, used also other publications of the National Office of Statistics (NOS)as well as economic reports published by the National Council Economic and Social (NCES) in 2009.

3-2-The accounts of the SAM 2009

The matrix that built has 14 branches of activity resulting from the aggregation of the 19 branches of activities of IOT 2009.The 14 branches are:Agriculture (1), Water, energy, building and public works (2), Hydrocarbons (3), Services and Public Works oil (4), Mines and Quarries (5), Steel industries, mechanical, metallurgical and electrical (6), Building Materials (7), Chemical, Rubber and Plastic (8), Industries food (9), Textiles, Apparel (10), Leather and Shoes (11), Wood, cork and paper (12), Various industries (13), Services (14).Theother accounts of the SAMabout 14 composites products to 14 corresponding branches mentioned above.The term composite product refers to the original local product and that of foreign origin of the same nature.Followed four accounts for institutional agents used are: the financial and non-financialcompanies, households and individual enterprises, government and the rest of the world.The remaining accounts concerning two accountsfor the Sales tax (Tva) and duties and taxes on imports (Tariff), account for Income taxes (Ytax), two other accounts for the two factors of production: Labor and Capital and finally account for Saving-Investment.

3-3-Remarks about the construction of SAM 2009

Before start to reading this SAM,we give some remarks on the relationship between certain accounts of the SAMand different sources of data used:

- most of the information contained in the SAM is extracted directly from IOT for 2009 such as the values of the production by activity,wages, gross operating surplus,Taxes linked to production,the value added tax, tariff and imports.
- For services, we corrected the values of labor compensation by wages paid by financial institutions, insurance companies andthe real estate businessas well as gross operating surplus of enterprises mentioned above because the latter are considered non-productive agents in the SAEA.
- Final consumption of financial institutions, insurances and the real estate businessis included in intermediate consumption of services branch for the same reasons mentioned above,for the same reasons mentioned above,namely that these firms, seen their character of non-productive agents,have no intermediate consumption.
- The taxes associated with the production of the services sector are corrected by thosefinancial institutions, insurances and the real estate business.

Table 1: Sectoral Aggregation of Algerian Social Accounting Matrix (SAM) for year 2009(DZD thousand)

3-4-Detailed Discussion of the Macro-SAM

In the previous section, we constructed an aggregate macro-SAM using 2009 data from Algeria. The balanced macro-SAM is shown in Table 1. In this background section we discuss each of the entries and identify where information can usually be found to construct a more disaggregated SAM. Cell entries are identified as row-column combinations and are valued in thousands of AlgeriaDZDat 2009.

Value-added [Labor-Capital, Activities: 8273639] Total value-added is the earnings received by the factors of production, such as the wages and salaries paid to labor and the profits paid to capital. Total value-added is also called “GDP at factor cost.” Information on GDP for different

sectors is usually found in national accounts. Where Algeria's GDP at factor cost was reported for 14 sectors. Total value-added was split into labor and capital components using technology coefficients from Algeria's input–output table. The national capital–labor coefficient estimates that 71.3 percent of GDP is generated by capital, implying that Algeria is a "capital-intensive" economy.

Intermediate demand [Commodities, Activities: 4403061]Intermediate demand is the goods and services used in the production process. This was a single number in the macro-SAM, and so it could only describe the national ratio of spending on factor to nonfactor inputs. However, a more detailed SAM that disaggregates activities and commodities would reveal differences in production technologies across sectors.

Factor income distribution [Households, Labor-Capital: 5286439] Factor incomes in the macro-SAM were paid to an aggregate household account. However, most SAMs split households into different groups, such as rural and urban. This information allows us to assess distributional impacts from policies. As a simple example, if our SAM shows that low-income households rely more on labor earnings than higher-income households, then policies that increase production in labor-intensive sectors should disproportionately benefit poorer households. Obviously, the greater the disaggregation, the more we can refine our assessment. Thus, the distribution of factor incomes is an important part of a SAM. This information is usually drawn from labor force or household income surveys. There may also be factors payments to non-household accounts.

Private consumption [Commodities, Households: 3922963] Households use most of their incomes to purchase commodities for consumption. Although the macro-SAM contains a single entry, most SAMs disaggregate private consumption across different commodities and household groups because house- holds' consumption patterns vary, especially across income groups. For example, poorer households usually spend a larger share of their income on food than do wealthier households, and so changes in the supply of foods will affect poorer house- holds more. These differences can influence the distributional impacts of policies and external shocks. Information on consumption patterns can be drawn from household income and expenditure surveys, such as the World Bank's Living Conditions Monitoring Surveys.

Government recurrent spending and investment demand [Commodities, Government: 1862704] and [Commodities, Investment: 4545845] Total absorption in an economy consists of private consumption, as well as public consumption spending and investment demand. Public consumption or recurrent expenditure consists of the goods and services purchased to maintain government function. Investment demand consists of both public and private gross capital formation, such as spending on roads, schools, and residential housing. Investment demand is therefore mainly for commodities like cement and construction services. This information is usually drawn from national accounts, government budgets, and supply-use tables.

Foreign trade [Commodities, Restof world: 3427170] and [Rest of world, Commodities: 3690885] Information on export earnings and import payments comes from three sources. National accounts and the balance of payments provide aggregate estimates of international trade in goods and services. Most SAMs include further detail on specific commodities groups, the information for which is compiled from a country's customs or trade data.

Government taxes [Government, Activities: 1083040] and [Government, Households: 797552][Government, Sales tax: 1083040] [Government, Income tax: 1083040] [Government, Tariff: 1083040] [Government, Rest of world: 598871] The government

generates revenue from direct and indirect taxes. Direct taxes include personal (pay as you earn) and corporate taxes imposed on domestic institutions, such as households and enterprises, and the various indirect taxes imposed on commodities, such as sales and export taxes, import tariffs and taxes related a production. Information on tax rates on different commodities and households can usually be obtained from tax authorities, customs data, and household income and expenditure surveys,and there also to other current transfers between the Government and the rest of the world.

Remittances and social transfers [Households, Government: 1102359] and [Households, Rest of world: 25387] Apart from factor payments, households also receive transfers from the government and the rest of the world. Government transfers include social security payments and public pensions. Foreign receipts usually include remittances from family members living and working abroad. Conversely, householdsmight also remit incomes to family members living abroad.

Domestic and foreign savings [Savings, Households: 1514413], [Savings, Government: 1430023],and [Savings, Enterprises: 1601408]the difference between incomes and expenditures is savings (or dis-savings if expenditures exceed incomes). For the government account, this is equal to the fiscal surplus/deficit; this information is documented in the government budget. However, information on domestic private savings is rarely recorded in developing datasets. Therefore, household savings is often treated as a residual when balancing a macro-SAM.

4-Conclusion

In this paper, presented in the first part the different characteristics of the Algerian economy by focusing on certain aspects of the Algerian productive system and its interdependencies with imported inputs and in the second partthat developed a social accounting matrix, while it provides a detailed reading.A reading that has revealed a certain number of characteristic elements of the Algerian productive system.

Moreover, technical analysis of economic relationship of the Algerian productive system with the rest of the world, focusing on the problem of the nature of inputs used, allows us to formulate the following conclusions:

- The analysis of the cumulative costs shows that they clearly depend on imported inputs to the sectors of industry and food-industry.This situation makes these sectors very exposed to the vagaries of the international economy in materials of imported inflation and exchange rates.Still in the context of cumulative costs, the analysis also showed a dominance of the value added in the oil sector and agriculture as well as in the building and public works sector,where the opportunity specialization of the Algerian economy in these sectors generating of value added and less consumer for imported inputs.
- Examining the output multipliers shows that consuming sectors of imported inputs have higher multipliers in the industry and food industry sectors and which denotes the necessary change in the Algerian productive system toward industries consumer of inputs produced locally.
- The income multipliers show that exports (hydrocarbons) are generating a large coefficient of income, and the effect of final demand on exports implies a generation of value added in the rest of the economy,unlike investment whose effect is limited to the sectors concerned.

It should be emphasized that the reading of the matrix allowed us to highlight the major conclusions are:

- The GDP, in Algeria, is marked by the predominant contributions of hydrocarbon and services sectors.
- Expenditures are intended primarily for household consumption, followed after by investment and exports as secondary recipients.

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The Macroeconomic Social Accounting Matrix of Algeria in 2009

Table 1: Sectoral Aggregation of Algerian Social Accounting Matrix (SAM) for year 2009(DZD thousand)

	A	C	L	C	H	E	G	S-I	Ytax	Tva	Tariff	ROW	Total
Activities		13759741											13759741
Commodities	4403061				3922963		1862704	4545845				3427170	18161745
Labor	8273639												8273640
Capital													
Household				5286439	7052	29228	1102359					25387	6450466
Enterprises				2986615		5277	542227					14000	3548120
Government	1083040				797552		701887		1984716	542063	169055	598871	5877188
Saving-Investment					1514413	1601408	1430023						4545845
Income tax					205540	1779176							1984716
Sales tax		542063											542063
Tariff		169055											169055
ROW		3690885	585		2943	133029	237986						4065430
Total	13759741	18161745		8273640	6450466	3548120	5877188	4545845	1984716	542063	169055	4065430	
Source: Author													

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