

TECHNICAL NOTES

2018 Input-Output Accounts

I. Introduction

The 2018 Input-Output (I-O) Accounts of the Philippines is the twelfth (12th) of a series of inter-industry studies of the Philippine economy since the construction of the first benchmark I-O table in 1961. The first two series, 1961 and 1965 I-O accounts, were prepared and published independently by the National Economic Council (the forerunner of the National Economic Development Authority, NEDA) and the Bureau of Census and Statistics (the then National Statistics Office, NSO). The next three tables (1969, 1974 and 1979) were collaborative works of these two offices. With the creation of the National Statistical Coordination Board (NSCB), the succeeding series, 1985, 1988, 1994, and 2000 were produced as a joint undertaking of the NSCB and NSO. With the virtue of Republic Act No. 10625, the Philippine Statistics Authority (PSA) was created from the merging of the NSCB, NSO, Bureau of Agricultural Statistics (BAS), and Bureau of Labor and Employment (BLES). As the central statistical authority of the Philippine government on primary data collection and production of statistics, the PSA released the two latest I-O tables of 2006 and 2018.

The 2018 Benchmark I-O presents the latest structure of the economy following the results of the overall revision and rebasing to 2018 of the national accounts. Among others, this covers the (1) digitalization of the economy; (2) emerging and highlighted industries and demand commodities such as information and communication, accommodation and food service activities, education, and human health and social work activities; (3) inclusion of valuables; (4) use of new classification based on the latest standards; and (5) advancement in measurement techniques and methods.

The 2018 Benchmark I-O Accounts provides disaggregative measures of the economic structure of the country, providing a detailed description of the process of production and the use of goods and services (or products) as well as the income generated by production. Thus, it provides planners and policymakers with a more in-depth view of the economic structure towards a more effective and specific translation of economic development plans and programs. It consists of an integral set of tables and matrices which shows the interrelationships between industries in the economy in terms of their production and uses of their products as well as imported products.

The 2018 I-O includes the I-O Transaction Table, the Technical Coefficient Matrix, and the Leontief Inverse Matrix with 16x16, 80x80, and 240x240 dimensions each.

Also included in the 2018 I-O release was the 2018 Input-Output industry classification for the 16, 80 and 240 industries and commodities.

II. Data and Data Sources

Data	Source Agency/ Data Source	Schedule of Release/ Data Availability
1. Census of Philippine Business and Industry (CPBI)	Philippine Statistics Authority (PSA)	Every 6 years
2. Input-Output Survey of Philippine Business and Industry (IOSPBI)	PSA	Every 6 years
3. Quarterly Survey on Philippine Business and Industry (QSPBI)	PSA	Quarterly; 30 days after the reference quarter
4. Monthly Integrated Survey of Selected Industries (MISSI)	PSA	Monthly; 35 days after the reference month
5. Family Income and Expenditure Survey (FIES)	PSA	Triennial (every 3 years)
6. Building permits	PSA	Monthly; 60 days after the reference month for the first two months; and 40 days for the third month of the reference quarter
7. Foreign Trade Statistics (FTS)	PSA	Monthly; 40 days after the reference month
8. Consumer Price Index (CPI)	PSA	Monthly; 5 days after the reference month
9. General Wholesale Price Index (GWPI)	PSA	Monthly; 45 days after the reference month
10. Construction Materials Wholesale Price Index in NCR	PSA	Monthly; 15 days after the reference month
11. General Retail Price Index in NCR	PSA	Monthly; 30 days after the reference month
12. Producer Price Index	PSA	Monthly; 30 days after the reference month
13. Farmgate Prices	PSA	Monthly
14. Survey on Overseas Filipinos (SOF)	PSA	Annual
15. Labor Force Survey (LFS)	PSA	Monthly; 40 days after the reference month
16. Performance of Philippine Agriculture	PSA	Quarterly; 39 days after the reference quarter
17. Rice and Corn Inventory (NFA, Household, and Commercial)	PSA	Monthly; 40 days after the reference month
18. National Expenditure	Department of	Annual; Available at the

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Program	Budget and Management (DBM)	beginning of the reference year
19. Staffing Summary	DBM	Annual; Available at the beginning of the reference year
20. Budget of Expenditures and Sources of Financing (BESF)	DBM	Annual; Available at the beginning of the reference year
21. Cash Disbursement	DBM	Quarterly; 30 days after the reference quarter
22. Annual Financial Report	Commission on Audit	Annual; 9 months after the reference year
23. Public-Private Partnership Projects	Public Private Partnership Center	Quarterly; 40 days after the reference quarter
24. Production of Raw Sugar (In metric tons)	Sugar Regulatory Administration (SRA)	Quarterly
25. Composite Price of Raw Sugar	SRA	Quarterly
26. Compendium on Research & Development Statistics	Department of Science and Technology	Every 2 years
27. Crude and Petroleum Products Inventory	Department of Energy (DOE)	Monthly; 30-40 days after the reference month
28. Petroleum Products Wholesale Posted Prices	DOE	Monthly; 30-40 days after the reference month
29. Petroleum Production	DOE	Monthly; 30 days after the reference month
30. Domestic and International Demand for Petroleum Products	DOE	Monthly; 30-40 days after the reference month
31. Market Share of Retailing Petroleum Companies	DOE	Monthly; 30-40 days after the reference month
32. Coal Run-of-Mine Production	DOE	Monthly; 30 days after the reference month
33. Electricity Gross Generation, Electricity Sales and Consumption of Distribution Utilities, Volume of Steam Production, Steam Selling Price	DOE	Annual; 3 months after the reference year
34. Metallic Mineral Production	Mines and Geosciences Bureau	Monthly; 30 days after the reference month
35. Electricity Gross Generation, Electricity Transmission	National Grid Corporation of the Philippines	Quarterly; 40 days after the reference quarter

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36. Energy Sales, Distribution Price	Meralco	Quarterly; 40-45 days after the reference quarter
37. Volume of Steam Production, Steam Selling Price	Energy Development Corporation	Quarterly; 40-45 days after the reference quarter
38. Water Production	Metropolitan Waterworks and Sewerage System	Quarterly; 40-45 days after the reference quarter
39. Income Statement of Banks and Non-banks Institutions	Bangko Sentral ng Pilipinas (BSP)	45-50 days after the reference period
40. Balance of Payments	BSP	Monthly; 90 days after the reference month
41. Exchange Rates	BSP	Daily
42. Consumer Expectations Survey	BSP	Quarterly
43. Business Expectations Survey	BSP	Quarterly
44. Income Statement of Insurance Companies	Insurance Commission	50-60 days after the reference period
45. Passenger Traffic and Gross Sales of Metro Rail Transit (MRT) 3	Department of Transportation	Quarterly; 30 - 45 days after the reference quarter
46. Gross Rail Revenue, Net Sales and Total Passengers/Ridership for Light Rail Transit (LRT) – Line 2	Light Rail Transit Authority	Quarterly; 30 - 45 days after the reference quarter
47. Rail Revenue and Average Daily Ridership for LRT – Line 1	Metro Pacific Investments Corporation	Quarterly; 30-40 days after the reference quarter
48. Passengers Carried and Revenues	Philippine National Railways	Quarterly; 30-45 days after the reference quarter
49. Domestic and International Passenger Traffic	Civil Aeronautics Board	Quarterly; 45-47 days after the reference quarter
50. Passengers Carried and Revenues	Philippine Airlines (PAL)	Quarterly; 30-40 days after the reference quarter
51. Fuel and catering services availed outside Philippines	PAL	Quarterly; 30-40 days after the reference quarter
52. Passengers Carried and Revenues	Cebu Pacific, Inc. (Cebu Pac)	Quarterly; 30-35 days after the reference quarter
53. Fuel and catering services availed outside Philippines	Cebu Pac	Quarterly; 30-40 days after the reference quarter
54. Cargo Throughput (domestic and foreign)	Philippine Ports Authority (PPA)	Quarterly; 25-30 days after the reference quarter
55. Ship calls (domestic and foreign)	PPA	Quarterly; 25-30 days after the reference quarter
56. Passenger traffic	PPA	Quarterly; 25-30 days after

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(embarked/disembarked)		the reference quarter
57. Acquisition of Fixed Assets of GOCCs	Department of Finance (DOF)	Quarterly; 90 days after the reference quarter
58. Actual Statements of Financial Operations of 16 Major Non-financial Government Corporations (MNFGCs)	DOF	Quarterly
59. Infrastructure Flagship Projects	National Economic Development Authority	Quarterly
60. Number of totally damaged houses	National Disaster Risk Reduction and Management Council	Quarterly; 30 days after the reference quarter
61. Forecast revenue and employment for the IT and BPO industry	IT & Business Process Association of the Philippines	
62. Overall Status of DPWH Infrastructure Program	Department of Public Works and Highways	Quarterly
63. Tourist/Visitors Receipts and Tourist Arrivals; Outbound Philippine Residents by Purpose; Outbound by Port of Disembarkation	Department of Tourism	Monthly; 60 days after the reference month
64. Travel Tax	Tourism Infrastructure and Enterprise Zone Authority	Quarterly; 30 days after the reference quarter
65. Deployment; Average salaries of OFW's	Philippine Overseas Employment Administration	Monthly; 30 days after the reference month
66. Trade margin of cattle for breeding	Federation of cattle Raisers Associations of the Phils	Quarterly
67. Commonly used fertilizer prices	Fertilizer and Pesticide Authority	Weekly
68. Trade margin of carabao for breeding	Philippine Carabao Center	Quarterly
69. Trade margin of poultry animals for breeding	Food and Agriculture Organization	Quarterly
70. Financial Statements of Companies	Philippine Stock Exchange	Quarterly; 40-45 days after the reference quarter

71. World Bank Commodity Prices and Indexes	World Bank	Monthly; 15-20 days after the reference month
72. Export and Price Indexes	US Bureau of Labor Statistics	Monthly; 15-20 days after the reference month

III. Methodology

III.1. Basic Framework

To facilitate input output analysis, three main tables are produced: the transactions table, the table of technical coefficient, and, the table of interdependence coefficient (inverse matrix).

A. The Transactions Table

The Transactions Table, which is the basic table of the I-O system, records all production flows within the economy during the specified year/period. To prepare the Transactions Table, the economy is divided into I-O sectors based on the 2019 Philippine Standard Industrial Classification (PSIC). Other classifications that were bridged into the I-O sectors were the 2009 Philippine Classification of Individual Consumption According to Purpose (PCOICOP) and the 2015 Philippine Standard Commodity Classification (PSCC). The output of each industry is distributed along a row of the table while the corresponding column records the inputs of the sector. Entries in a row present how the output of a certain sector is disposed, either as intermediate sales to other industries or as final deliveries of goods and services for (a) household final consumption expenditure, (b) government final consumption expenditure, (c) gross capital formation, and, (d) exports of goods and services. Entries in a column, on the other hand, reflect the value of inputs utilized to produce the output of the sector. These are comprised of the intermediate inputs which include the materials, supplies, and services purchased from other industries; and the primary inputs which are payments to the factors of production in the form of (a) compensation of employees, (b) taxes on production and on imports paid to government, and (c) depreciation allowance (or consumption of capital allowance) for the use of capital; and operating surplus paid to entrepreneurs.

B. The Table of Technical Coefficient

The Technical Coefficients Table or direct requirements matrix presents the unit cost structure of production in an economy. This describes the coefficient value of intermediate inputs and primary inputs required in the production of one unit of output of the industry. The technical coefficients are derived by dividing each element in the intermediate transactions matrix by the total input of each sector as shown in the column total.

C. The Inverse Matrix

The Inverse Matrix or Leontief Matrix shows the production required, directly and indirectly, per peso of delivery to final demand. The elements in a column correspond not only to the direct requirements but also to the indirect sectoral output requirements needed to meet a unit increase in the final demand for that industry's output. To illustrate, the effect of an increase in demand for a certain product/commodity does not end with its required direct intermediate inputs. It generates a long chain of interaction in the production processes since each of the products/commodities used as inputs needs to be produced, and will, in turn, require various inputs. One cycle of input requirements needs another cycle of inputs, which in turn requires another cycle. The sum of all these chained reactions is reflected in the inverse matrix.

For I-O analysis, the Leontief matrix is very important because it provides the link between production and the final demand. This can be used to calculate the required output levels of a postulated set of final demands. The matrix is calculated as the inverse of the technology matrix $(I - A)$, where A is an input coefficient and I is the identity matrix.

Other I-O analysis that can be calculated using the Inverse Matrix include multiplier analyses (income and employment multipliers); backward (index of power of dispersion, and forward linkages (index of sensitivity); price cost analyses, and impact analyses.

III.2. Basic Input-Output Assumptions

Basically, two assumptions are considered in constructing the I-O table, namely: homogeneity and proportionality. By homogeneity, it is assumed that (a) each industry produces a single output (i.e., all the products of the industry are either perfect substitute for one another or are produced in fixed proportions); (b) each industry has a single input structure (i.e., one which does not vary in response to changes in product mix); and, (c) there is no substitution between the products of different industries. ^{1/} In effect, the same product or close substitutes could not be contained in two different industries.

On the other hand, proportionality requires that in any productive process all inputs are used in strictly fixed proportions. Any increase or decrease in inputs will result to a proportional increase or decrease in the level of output. Hence, a process that is labor intensive cannot be substituted by the capital-intensive alternative. Regardless of the extent of capacity expansion or reduction, the same fixed ratio is maintained.

IV. Concepts and Definition of Terms

1. **The Transaction Table** records all production flows within the economy during the specified year/period. Entries in a row show how the output of a certain sector is disposed while entries in a column reflect the value of inputs utilized to produce the output of the sectors.

2. **The Technical Coefficients Table** or direct requirements matrix presents the unit cost structure of production in an economy. This describes the coefficient value of intermediate inputs and primary inputs required in the production of one unit of output of the industry.

3. **The Inverse Matrix** or Leontief Matrix provides the link between production and final demand. It shows the production required, directly and indirectly, per peso of delivery to final demand.

V. Dissemination of Results

The Input-Output Accounts is being released every six (6) years. The latest 2018 I-O Table was released on 09 December 2021.

The next update of the I-O Table will coincide a year after the releases of the two major data sources of the accounts: the 2024 CPBI and the 2024 IOSPBI.

The web release materials include press release, statistical tables, infographics, publication report, and social cards.

VI. Citation

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VII. Contact Information

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