

## TECHNICAL NOTES

### Seasonally Adjusted National Accounts of the Philippines

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#### I. Introduction

The Seasonally Adjusted National Accounts (SANA) of the Philippines was first designated for generation and release in 1994 through the National Statistical Coordination Board (NSCB) Resolution No. 6, Series of 1994. By the virtue of Republic Act No. 10625, the Philippine Statistics Authority (PSA) was created to be the central statistical authority of the Philippine government on primary data collection. With this, the designation for generation and release of the SANA was later on adopted through the PSA Resolution No. 1, Series of 2017.

Through the Macroeconomic Accounts Service, the PSA, regularly releases the quarterly Gross Domestic Product (GDP) with the quarterly Seasonally Adjusted National Accounts (SANA) of the Philippines. The SANA presents the economic performance of the country without the influence of predictable seasonal patterns. It is a tool to identify the underlying trends revealing the true behavior of the series, compares quarter-on-quarter changes, and analyzes the seasonal effects in the series. It also provides early signals to the economic planners through quarter-on-quarter changes that will serve as a guide for better plans and decisions in maintaining the economic stability of the country.

The publication includes the Seasonally Adjusted GDP compiled at the production side and expenditure side. The GDP production and GDP expenditure and its components are compiled and presented by major industries and by major expenditure items including its details. The Seasonally Adjusted Net Primary Income and Gross National Income are also included.

#### 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. Quarterly Survey on Philippine Business and Industry (QSPBI)	PSA	Quarterly; 30 days after the reference quarter
3. Monthly Integrated Survey of Selected Industries (MISSI)	PSA	Monthly; 35 days after the reference month
4. Family Income and Expenditure Survey (FIES)	PSA	Triennial (every 3 years)

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5. 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
6. Foreign Trade Statistics (FTS)	PSA	Monthly; 40 days after the reference month
7. Consumer Price Index (CPI)	PSA	Monthly; 5 days after the reference month
8. General Wholesale Price Index (GWPI)	PSA	Monthly; 45 days after the reference month
9. Construction Materials Wholesale Price Index in NCR	PSA	Monthly; 15 days after the reference month
10. General Retail Price Index in NCR	PSA	Monthly; 30 days after the reference month
11. Producer Price Index	PSA	Monthly; 30 days after the reference month
12. Farmgate Prices	PSA	Monthly
13. Survey on Overseas Filipinos (SOF)	PSA	Annual
14. Labor Force Survey (LFS)	PSA	Monthly; 40 days after the reference month
15. Performance of Philippine Agriculture	PSA	Quarterly; 39 days after the reference quarter
16. Rice and Corn Inventory (NFA, Household, and Commercial)	PSA	Monthly; 40 days after the reference month
17. National Expenditure Program	Department of Budget and Management (DBM)	Annual; Available at the beginning of the reference year
18. Staffing Summary	DBM	Annual; Available at the beginning of the reference year
19. Budget of Expenditures and Sources of Financing (BESF)	DBM	Annual; Available at the beginning of the reference year
20. Cash Disbursement	DBM	Quarterly; 30 days after the reference quarter
21. Annual Financial Report	Commission on Audit	Annual; 9 months after the reference year
22. Public-Private Partnership Projects	Public Private Partnership Center	Quarterly; 40 days after the reference quarter
23. Production of Raw Sugar (In metric tons)	Sugar Regulatory Administration (SRA)	Quarterly
24. Composite Price of Raw	SRA	Quarterly

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Sugar		
25. Compendium on Research & Development Statistics	Department of Science and Technology	Every 2 years
26. Crude and Petroleum Products Inventory	Department of Energy (DOE)	Monthly; 30-40 days after the reference month
27. Petroleum Products Wholesale Posted Prices	DOE	Monthly; 30-40 days after the reference month
28. Petroleum Production	DOE	Monthly; 30 days after the reference month
29. Domestic and International Demand for Petroleum Products	DOE	Monthly; 30-40 days after the reference month
30. Market Share of Retailing Petroleum Companies	DOE	Monthly; 30-40 days after the reference month
31. Coal Run-of-Mine Production	DOE	Monthly; 30 days after the reference month
32. 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
33. Metallic Mineral Production	Mines and Geosciences Bureau	Monthly; 30 days after the reference month
34. Electricity Gross Generation, Electricity Transmission	National Grid Corporation of the Philippines	Quarterly; 40 days after the reference quarter
35. Energy Sales, Distribution Price	Meralco	Quarterly; 40-45 days after the reference quarter
36. Volume of Steam Production, Steam Selling Price	Energy Development Corporation	Quarterly; 40-45 days after the reference quarter
37. Water Production	Metropolitan Waterworks and Sewerage System	Quarterly; 40-45 days after the reference quarter
38. Income Statement of Banks and Non-banks Institutions	Bangko Sentral ng Pilipinas (BSP)	45-50 days after the reference period
39. Balance of Payments	BSP	Monthly; 90 days after the reference month
40. Exchange Rates	BSP	Daily
41. Consumer Expectations Survey	BSP	Quarterly
42. Business Expectations Survey	BSP	Quarterly
43. Income Statement of	Insurance	50-60 days after the

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Insurance Companies	Commission	reference period
44. Passenger Traffic and Gross Sales of Metro Rail Transit (MRT) 3	Department of Transportation	Quarterly; 30 - 45 days after the reference quarter
45. 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
46. Rail Revenue and Average Daily Ridership for LRT – Line 1	Metro Pacific Investments Corporation	Quarterly; 30-40 days after the reference quarter
47. Passengers Carried and Revenues	Philippine National Railways	Quarterly; 30-45 days after the reference quarter
48. Domestic and International Passenger Traffic	Civil Aeronautics Board	Quarterly; 45-47 days after the reference quarter
49. Passengers Carried and Revenues	Philippine Airlines (PAL)	Quarterly; 30-40 days after the reference quarter
50. Fuel and catering services availed outside Philippines	PAL	Quarterly; 30-40 days after the reference quarter
51. Passengers Carried and Revenues	Cebu Pacific, Inc. (Cebu Pac)	Quarterly; 30-35 days after the reference quarter
52. Fuel and catering services availed outside Philippines	Cebu Pac	Quarterly; 30-40 days after the reference quarter
53. Cargo Throughput (domestic and foreign)	Philippine Ports Authority (PPA)	Quarterly; 25-30 days after the reference quarter
54. Ship calls (domestic and foreign)	PPA	Quarterly; 25-30 days after the reference quarter
55. Passenger traffic (embarked/disembarked)	PPA	Quarterly; 25-30 days after the reference quarter
56. Acquisition of Fixed Assets of GOCCs	Department of Finance (DOF)	Quarterly; 90 days after the reference quarter
57. Actual Statements of Financial Operations of 16 Major Non-financial Government Corporations (MNFGCs)	DOF	Quarterly
58. Infrastructure Flagship Projects	National Economic Development Authority	Quarterly
59. Number of totally damaged houses	National Disaster Risk Reduction and Management Council	Quarterly; 30 days after the reference quarter
60. Forecast revenue and employment for the IT and BPO industry	IT & Business Process Association of the Philippines	

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61. Overall Status of DPWH Infrastructure Program	Department of Public Works and Highways	Quarterly
62. 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
63. Travel Tax	Tourism Infrastructure and Enterprise Zone Authority	Quarterly; 30 days after the reference quarter
64. Deployment; Average salaries of OFW's	Philippine Overseas Employment Administration	Monthly; 30 days after the reference month
65. Trade margin of cattle for breeding	Federation of cattle Raisers Associations of the Phils	Quarterly
66. Commonly used fertilizer prices	Fertilizer and Pesticide Authority	Weekly
67. Trade margin of carabao for breeding	Philippine Carabao Center	Quarterly
68. Trade margin of poultry animals for breeding	Food and Agriculture Organization	Quarterly
69. Financial Statements of Companies	Philippine Stock Exchange	Quarterly; 40-45 days after the reference quarter
70. World Bank Commodity Prices and Indexes	World Bank	Monthly; 15-20 days after the reference month
71. Export and Price Indexes	US Bureau of Labor Statistics	Monthly; 15-20 days after the reference month

### III. Methodology

#### III.1. Basic Framework

The Philippine Statistics Authority currently uses the internationally recommended seasonal adjustment method which is the X-13ARIMA-SEATS, a seasonal adjustment software program developed and maintained at the U.S. Census Bureau.

##### A. The X-13ARIMA-SEATS

The SEATS (Signal Extraction in ARIMA Time Series) seasonal adjustment method available in X-13ARIMA-SEATS uses parameter estimates from

autoregressive integrated moving average (ARIMA) models to filter the series and derive the seasonal factors and other components.

The decomposition model for the series may be multiplicative or additive. The multiplicative model assumes dependence between the components therefore monthly seasonal factors for the multiplicative model are ratios with all positive values. Meanwhile, additive decomposition assumes independence of the components, thus seasonal factors may represent positive or negative deviations from the original series. The seasonally adjusted series may exhibit negative values depending on the resulting decomposition of the trend-cycle, seasonal, and irregular component.

### **B. Indirect Method for Seasonal Adjustment**

In the Seasonally Adjusted National Accounts, the quarterly GDP is generated using Indirect Approach or by seasonally adjusting the 80 sub-industries and summing the seasonally adjusted components to produce indirect seasonal adjustment aggregates. Hence, the seasonally adjusted GDP is derived at the production side.

Moreover, the expenditure items are also seasonally adjusted independently and aggregated to major expenditure categories.

The seasonally adjusted Gross National Income is also derived by adding the seasonally adjusted GDP and Net Primary Income.

### **C. Quality Measures**

Decomposition of the (preadjusted) series should be conducted using either the moving average X-11 method or the model-based SEATS method. The X-13ARIMA-SEATS program, which implements both X-11 and SEATS, is the recommended procedure for seasonal adjustment in the Quarterly National Accounts.

To examine the reliability of the estimates, the Quality Statistic (Q-statistic) is measured for each adjusted series.

## **IV. Concepts and Definition of Terms**

1. A **Time Series** is a set of observations on a variable measured or recorded chronologically with equal intervals.
2. **Seasonality** (seasonal component) is a regular fluctuation with similar patterns and magnitude that repeatedly occur within a calendar year and normally observed for high frequency data such as monthly and quarterly series.

3. **Seasonal adjustment** is a statistical technique to remove the effects of seasonal calendar influences operating on a time series.

## V. Dissemination of Results

The Seasonally Adjusted National Accounts is included in the PSA System of Designated Statistics, indicated to be released 40 days after the reference period, except Q4, which is to be released 30 days after the reference period. The following schedules are the releases of SANA based on the Advance Release Calendar of PSA:

<b>SANA Report</b>	<b>Schedule of Release</b>
Quarter 4 of the Previous Year	January of the Current Year
Quarter 1 of the Current Year	May of the Current Year
Quarter 2 of the Current Year	August of the Current Year
Quarter 3 of the Current Year	November of the Current Year

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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