

Quarterly and Annual Gross Domestic Product: Sources and Methods



REPUBLIC OF THE PHILIPPINES

PHILIPPINE STATISTICS AUTHORITY

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The Quarterly and Annual Gross Domestic Product: Sources and Methods
is a publication prepared by the Macroeconomic Accounts Services (MAS)
of the PHILIPPINE STATISTICS AUTHORITY (PSA)
whenever there would be major revisions done in the Philippine System of National Accounts (PSNA)
based on the recommendations of the UN System of National Accounts Manual.
For technical inquiries, please contact us at: (632) 8376-1982 or email us at eiad.staff@psa.gov.ph

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Foreword

The Philippine Statistics Authority (PSA) presents the Manual on the Sources and Methods on the Quarterly and Annual National Accounts of the Philippines. This manual aims to inform our stakeholders and users about the improvements and changes made in the Philippine System of National Accounts (PSNA) with the adoption and implementation of the 2008 United Nations System of National Accounts (UNSNA) recommendations.

The Sources and Methods Manual consists of eight (8) chapters. Chapter 1 provides an overview of the measurement of the Gross Domestic Product (GDP), the history of the PSNA, and its boundaries and uses. Chapter 2 discusses the PSNA revision and 2018 rebasing, which includes the new configuration of industries and expenditure items, benchmarking, backcasting, and some statistical analysis. Chapter 3 is on the statistical infrastructure that discusses the classification systems and the sources of data used in the revision and 2018 rebasing. Chapter 4 defines the GDP by industry and expenditure items. Chapter 5 presents the general methodologies used in the production and expenditure approaches at current and constant prices. Chapter 6 introduces the process of reconciliation, interpolation, and extrapolation, as well as the linking of the annual and quarterly series. Chapter 7 includes the revision policy and seasonal adjustments. Lastly, Chapter 8 presents the detailed methods in deriving the production industries and expenditure items.

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Undersecretary

National Statistician and Civil Registrar General

Quezon City, Philippines
December, 2022

List of abbreviations and acronyms

AFR	Annual Financial Report
ASPBI	Annual Survey of Philippine Business and Industry
BESF	Budget of Expenditures and Sources of Financing
BOP	Balance of Payments
BPM6	Balance of Payments Manual, Sixth edition
BSP	Bangko Sentral ng Pilipinas
CAF	Census of Agriculture and Fisheries
CAIO	Consolidated Accounts and Income and Outlay Accounts
CFC	Consumption of Fixed Capital
CLPS	Commercial Livestock and Poultry Survey
CMWPI	Construction Materials Wholesale Price Index
COA	Commission on Audit
COICOP	Classification of Individual Consumption According to Purpose
CPBI	Census of the Philippine Businesses and Industries
CPH	Census of Population and Housing
CPI	Consumer Price Index
DSA	Daily Subsistence Allowance
EDC	Energy Development Corporation
FAO	Food and Agriculture Organization of the United Nations
FIES	Family Income and Expenditure Survey
FS	Financial Statement
FTS	Foreign Trade Statistics
GDP	Gross Domestic Product
GNI	Gross National Income
GO	Gross Output
GOCC	Government-owned and Controlled Corporations
GRDE	Gross Regional Domestic Expenditure

GRDP	Gross Regional Domestic Product
GVA	Gross Value Added
GVA _r	Gross Value Added Ratio
IACMAS	Interagency Committee on Macroeconomic Accounts Statistics
IBPAP	Information Technology - Business Process Association of the Philippines
IC	Intermediate Consumption
IO	Input-Output Accounts
IOSPBI	Input-Output Survey of Philippine Business and Industries
IPIN	Implicit Price Index
LE	List of Establishments
LFS	Labor Force Survey
LGU	Local Government Unit
MISSI	Monthly Integrated Survey of Selected Industries
MOOE	Maintenance and Other Operating Expenses
N.E.C.	Not Elsewhere Classified
NAP	National Accounts of the Philippines
NDI	Net Disposable Income
NEA	National Electrification Administration
NEXA	National Education Expenditure Accounts
NG	National Government
NGCP	National Grid Corporation of the Philippines
NNI	Net National Income
NPC	National Power Corporation
NPISH	Non-profit institutions serving households
NSDS	National Strategies for the Development of Statistics
ORR	Overall Revision and Rebasing
OS	Operating Surplus
PCOICOP	Philippine Classification of Individual Consumption According to Purpose
PCPC	Philippine Central Product Classification

PFDA	Philippine Fisheries Development Authority
PPI	Producer Price Index
PPP	Public-Private Partnership Center of the Philippines
PS	Personnel Services
PSCC	Philippine Standard Commodity Classification
PSE	Philippine Stock Exchange
PSGC	Philippine Standard Geographic Code
PSIC	Philippine Standard Industrial Classification
PSNA	Philippine System of National Accounts
PSDP	Philippine Statistical Development Program
PSS	Philippine Statistical System
PTSA	Philippine Tourism Satellite Accounts
QNAP	Quarterly National Accounts of the Philippines
QSPBI	Quarterly Survey of Philippine Business and Industry
ROW	Rest of the World
SANA	Seasonally Adjusted National Accounts
SDS	System of Designated Statistics
SEC	Security and Exchange Commission
SEEA	System of Environmental-Economic Accounting
SITC	Standard International Trade Classification
SNA	System of National Accounts
SRA	Sugar Regulatory Administration
SSS	Social Security System
SUT	Supply and Use Table
TIEZA	Tourism Infrastructure and Enterprise Zone Authority
TNVS	Transportation Network Vehicle Service
U.S. BLS	United States Bureau of Labor Statistics
UNSD	United Nations Statistics Division
WB	World Bank
WPI	Wholesale Price Index

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Chapter 1. The Philippine System of National Accounts (PSNA)

The Philippine Statistics Authority (PSA), as mandated through Republic Act No. 10625 also known as the “Philippine Statistical Act of 2013”, shall plan, develop, prescribe, disseminate and enforce policies, rules and regulations and coordinate government-wide programs governing the production of official statistics, general-purpose statistics, and civil registration services. It shall primarily be responsible for all national censuses and surveys, sectoral statistics, consolidation of selected administrative recording systems and compilation of national accounts.

The Philippine System of National Accounts (PSNA) is a statistical framework for compiling and presenting economic data, in concepts and formats that are comprehensive, consistent, and integrated, which is designed for purposes of economic analysis, decision-making and policymaking. The framework is based on the 2008 System of National Accounts (SNA) which allows international comparability despite some unique features to better reflect the Philippine economy.

Following an international practice among national statistical offices producing national accounts, the PSNA is likewise continuously being improved to maintain the relevance of its generated data series to the current situation of the economy. The improvement is done through revision and rebasing to update base year of the accounts. The revision and rebasing of the PSNA are done to (a) align with the present economic structure of the country; (b) adopt updated classification systems; (c) use of new data and data sources; and (d) to implement recommendations of the 2008 SNA.

1.1 History of the PSNA

In 1950, the Department of Economic Research of the Central Bank of the Philippines (CBP), now the Bangko Sentral ng Pilipinas (BSP), came up with the first National Accounts of the Philippines (NAP) series from 1946-1950 based on the final value of goods and services produced.

In 1952, the CBP adopted the double entry method of transaction. This method was used for the national accounts series from 1946-1956.

The compilation of NAP was transferred to the Office of Statistical Coordination and Standards (OSCAS) of the National Economic Council (NEC) in 1957. NEC compiled the national accounts series for the period of 1956-1967 following United Nations guidelines.

In 1967, the NEC undertook the first revision and rebasing of the PSNA with a shift of the base year from 1955 to 1967, producing the 1946-1967 NAP series.

With government restructuring in 1973, the National Economic Development Authority (NEDA) was created from its predecessor, the NEC. The compilation of NAP was then assigned to the National Accounts Staff of NEDA.

In 1976, based on the recommendations from the 1971 national accounts workshop, the second revision of the PSNA was implemented. The PSNA was then rebased from 1967 to 1972 and was aligned with the recommendations of the 1968 United Nations System of National Accounts (UNSNA).

By virtue of Executive Order No. 121, the Philippine Statistical System (PSS) was restructured in 1987 resulting in the establishment of the National Statistical Coordination Board (NSCB) which took over the compilation of the PSNA in the said year.

In 1990, the NSCB implemented the third revision and rebasing of the PSNA, with a shift of base year from 1972 to 1985. The revisions are from the recommendations of the 1993 SNA and recommendations of the 1968 UNSNA that were previously not implemented due to the lack of adequate data.

In 2011, the fourth NAP revision was launched by NSCB. The series moved its base year from 1985 to 2000 and adopted most of the recommendations of the 2008 SNA. The revision was a project under the Multi Donor Trust Fund for Statistical Capacity Building of the World Bank.

Through Republic Act No. 10625 also known as the Philippine Statistical Act of 2013, the Philippine Statistics Authority (PSA) was created, merging the four major statistical government units namely, NSCB, National Statistics Office, Bureau of Agricultural Statistics, and the Bureau of Labor and Employment Statistics. With this merging, the compilation of the PSNA is now with the PSA.

The overall revised and rebased 2000-2019 time series with 2018 as the base year was released by the PSA in April 2020. The revised time series includes both annual and quarterly production sub-industries, expenditure sub-items, and net primary income from the rest of the world. Annual back-cast estimates for major industries were implemented starting from 1946. Quarterly back-cast estimates for production and expenditure aggregates are available starting from 1981. The PSNA has been revised and rebased five times since it was first compiled in 1950.

1.2 Measuring Gross Domestic Product (GDP)

Three approaches can be used to calculate GDP:

- Production approach. This method calculates what each separate producer adds to the value of final output (value added), by deducting intermediate consumption from gross output. Value added is summed for all producers. In practice, the components of value added are also independently estimated.

- Income approach. This approach directly measures the incomes received by the owners of the factors of production. These represent the returns to the labor and capital employed such as wages and salaries, and profits.
- Expenditure approach. This method sums the values of all final demands, that is, final consumption expenditures (of households, government and private non-profit institutions serving households), gross capital formation, and net exports (or exports less imports).

The Production and Expenditure approaches are produced on an annual and quarterly basis while the Income approach is generated on an annual basis. The statistical discrepancy between the two approaches for both the annual and quarterly estimates are reconciled using the Supply and Use Table (SUT).

1.3 Boundaries of the PSNA

The PSNA covers all economic activities that fall within the following boundaries as defined in the 2008 SNA:

1.3.1 Production Boundary

The production boundary includes all goods and services produced through economic activities within an economy such that they can be provided to another unit, with or without charges. For the household production, the goods produced by the households for own final consumption or gross capital formation are included in the production (internal transactions). However, domestic, and personal services produced and consumed by members of the same household are not included in the production accounts, except housing services for own consumption and the production of domestic and personal services using paid domestic staff. The reasons for national accountants to exclude unpaid domestic and personal services are many, although the most significant one is that by including them, virtually the whole adult population would be economically employed and unemployment is eliminated (*2008 SNA, para 6.31*). Natural growth of biological resources, either cultivated or uncultivated, over which ownership rights have been established and enforced is a part of the production boundary (*2008 SNA, para 10.88-10.96*), however that of uncultivated resources that are not owned, not under control and responsibility of any institutional units fall outside the production boundary (*2008 SNA, para 10.167*).

1.3.2 Consumption Boundary

The range of goods and services that are included in the household final consumption expenditure, is likewise guided by the boundaries of production. Household expenditures include the estimated value of agricultural products consumed by households that they have produced themselves and the values of the housing services consumed by owner occupiers, but not the personal services for own final consumption such as do-it-yourself repairs and maintenance of household durables. However, the

expenditure on the goods utilized for such purposes are recorded in the household final consumption expenditure.

1.3.3 National Boundary

The GDP of a country, being equal to the sum of the gross value added of all resident institutional units engaged in production, is not necessarily the same as the sum of the gross value added of productive activities taking place in the geographical boundaries of the country. Some of the production of a resident institutional unit may take place abroad, and some of the production taking place within a country may be attributed to non-resident institutional units (*2008 SNA, para 1.49*).

The same concept goes for the expenditure side of the GDP. Adjustments have to be made for goods and services produced by residents but consumed by non-residents, and vice versa. All transactions with the rest of the world need to be identified to properly account for their impact on measures relating to the resident economy (*2008 SNA, para 1.50*).

1.3.4 Asset Boundary

Assets are defined in the SNA as entities that function as stores of value and over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits can be derived by using them over time. Hence, ownership is an important criterion in determining which natural resources are treated as assets, regardless, if the assets are government or privately owned. Resources on which no ownership rights can be exercised, the atmosphere for an instance, are not considered as assets. Undiscovered and/or unworkable mineral or fuel deposits are also not included since they are not capable of bringing any benefits to their owners.

1.3.5 Non-Monetary Boundary

The goods and services produced within an economy are automatically included in the accounts and valued at market prices, the prices at which sellers are willing to sell and buyers are willing to pay. Goods and services provided to other units for free as transfers in kind or bartered for other goods and services must also be accounted for, however, their values must be estimated. Estimating the values of all goods and services that are not sold but disposed of in other ways must be done to obtain comprehensive measures; they are either measured at equivalent market prices or at production cost when equivalent market prices are not available.

1.4 Uses of the PSNA

The PSNA serves as a statistical and coordinating framework for the compilation of the national accounts, and its uses are the following:

- Assessment of economic performance;
- Impact-analyses of government policies;
- Formulation of economic targets;
- Identification of causal relationships between variables and the support of economic models; and
- Assessment of regional, subregional and more disaggregated economic performance.

The estimation of quarterly national product and expenditure, as well as annual national income, are closely followed by the government, the private sector economists, the media, as well as those in the financial markets, and researchers. The estimation of annual regional product (Gross Regional Domestic Product) and regional expenditure (Gross Regional Domestic Expenditure) are analyzed.

Moreover, various macroeconomic indicators can be derived from the quarterly and annual production and expenditure accounts. Indicators based on national accounts aggregates are used to monitor the overall performance of the economy. Some indicators are supplemented by other important indicators obtained from other specialized statistics. Some of the indicators that can be derived from the national accounts are:

- Labor Productivity
- Major Industries contribution to GNI
- Terms of Trade
- Trading Gains/Loses
- Trade Balance
- Trade-to-GDP ratio
- Share of Top Imports and Exports to total Merchandise
- Fixed Capital Formation to GDP
- Debt-to-GDP ratio

Other accounts such as agricultural accounts, input-output accounts, and various satellite accounts are available to the public and are used by the specific government agencies, the academe, and those with interest, for various situation and factor analyses for both policy and educational purposes.

Chapter 2. The PSNA overall revision and rebasing to 2018

The overall revision and rebasing activity of the PSA is an international practice being done by compilers of national accounts. On 20 April 2020, the PSA released and disseminated the revised and 2018 rebased estimates of the National Accounts of the Philippines.

The revised and rebased series is presented annually from 2000 to recent year, and quarterly from Q1 2000 to recent quarter. Longer series of the major industries starts from 1946, while the quarterly series with major industries starts from Q1 1981.

2.1 The need to revise and rebase the PSNA

As per PSA Board Resolution No. 11, series of 2018, entitled “*Approving the General Policy on the Revision and Rebasing of the Philippine System of National Accounts*” the PSA has embarked in series of activities to revise and rebase to 2018 the PSNA because of the following:

- development and utilization of more updated national accounts shall provide planners, policymakers and researchers with an effective tool with economic analysis and policy formulation;
- additional and more comprehensive data become available such as those from the Census of Philippine Business and Industry (CPBI) and the Input Output (IO) Accounts;
- there is a need to revise the PSNA further in accordance with the international guidelines based on the framework and methodologies of the System of National Accounts, 2008 (2008 SNA);
- regular updating of base year is necessary to capture changes in the economy, consumer behavior, statistical developments, and changes in user needs.

2.2 The new industries and expenditure components

The present revision and rebasing of the PSNA, there are 16 industries measured in the production approach. Table 2.1 shows the industries of the 2018-based vis-à-vis the 2000-based, while Table 2.2 presents the revisions done in the industries in the production side.

Table 2.1 Comparison of Industries in the 2000-based and 2018-based PSNA

2000-based Industries	2018-based Industries
<ol style="list-style-type: none"> 1. Agriculture, hunting, forestry, and fishing 2. Mining & quarrying 3. Manufacturing 4. Construction 5. Electricity, gas and water supply 6. Transport, storage & communication 7. Trade and repair of motor vehicles, motorcycles, personal and household goods 8. Financial intermediation 9. Real estate, renting and business activities 10. Public administration and defense; compulsory social security 11. Other services 	<ol style="list-style-type: none"> 1. Agriculture, forestry, and fishing 2. Mining and quarrying 3. Manufacturing 4. Electricity, steam, water and waste management 5. Construction 6. Wholesale and retail trade; repair of motor vehicles and motorcycles 7. Transportation and storage 8. Accommodation and food service activities 9. Information and communication 10. Financial and insurance activities 11. Real estate and ownership of dwellings 12. Professional and business services 13. Public administration and defense; compulsory social activities 14. Education 15. Human health and social work activities 16. Other services

Table 2.2 Revisions made in the 2018-based PSNA industry classification

Industry	Revisions
Agriculture, forestry, and fishing	<ul style="list-style-type: none"> • Adopted the SNA concept of industry like inclusion of secondary activities of farmers, e.g., a palay farmer can engage on other activities such as trading, raising livestock and poultry • Included other livestock and poultry, e.g., horses, quails, crocodiles, ornamental plants, etc. • Included “work-in-progress” in agriculture
Mining and quarrying	<ul style="list-style-type: none"> • Highlighted coal, precious metals as separate sub-industry

Manufacturing	<ul style="list-style-type: none"> • Highlighted manufacturing of pharmaceuticals products and repair/installation of machinery and equipment • Merged computer, electronics and optical products • Merged transport equipment • Transferred publishing to ICT; repairs of furniture to repairs of consumer durables; recycling to waste collection
Electricity, steam, water, and waste management	<ul style="list-style-type: none"> • Included sewerage, waste management and remediation activities
Construction	<ul style="list-style-type: none"> • Updated parameters • Presented the gross value of construction by institutional sector, e.g., household, government, private corporations.
Trade	<ul style="list-style-type: none"> • Excluded retail trade of motor vehicles and motorcycles • Expanded the coverage of household unincorporated activities (e.g., trading through online).
Transportation and storage	<ul style="list-style-type: none"> • Expanded the coverage of household unincorporated activities (e.g., Transportation Network Vehicle Service (TNVS) System)
Accommodation and food service activities	<ul style="list-style-type: none"> • Highlighted as new industry, previously part of hotels and restaurants sub-industry of Other services • Expanded the coverage of household unincorporated activities (e.g., increase activities through online marketplace facilitation)
Information and communications	<ul style="list-style-type: none"> • Highlighted as new industry to include: <ol style="list-style-type: none"> 1. Telecommunications; 2. Publishing activities; 3. Motion picture, video and television program activities; 4. Programming and broadcasting activities; 5. Computer programming, consultancy, and related activities; and 6. Information service.
Financial and insurance activities	<ul style="list-style-type: none"> • Highlighted insurance activities and re-insurance • Capture digital financial transactions
Professional and business activities	<ul style="list-style-type: none"> • Highlighted new industry, previously a sub-industry of Renting and Business Activities • Expanded the coverage of household unincorporated activities (i.e., digital economy)

Public administration and defense; compulsory social security	<ul style="list-style-type: none"> • Used updated data on income and expense from updated financial statements of the Commission on Audit (COA) • Used updated price indicators from updated financial statements of COA
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In measuring GDP of the Philippine economy by expenditure approach in the revised and rebased to 2018 series, the following expenditure components are highlighted:

1. Household final consumption expenditure;
2. Government final consumption expenditure;
3. Construction;
4. Durable equipment;
5. Breeding stocks and orchard development;
6. Intellectual property products;
7. Changes in inventories;
8. Valuables;
9. Exports of goods;
10. Imports of goods;
11. Exports of services; and
12. Imports of services.

Valuables, is the additional expenditure component included in the 2018 overall revision and rebasing of the PSNA. No expenditure component was removed following the 2000-based series. Table 2.3 presents the revisions done in the expenditure components.

Table 2.3 Revisions done in the 2018-based PSNA expenditure components

Expenditure components	Revisions
Household final consumption expenditures	<ul style="list-style-type: none"> • Included expenditures of Filipino residents abroad • Better capturing of institutional households from the available Census of Population, e.g., prisons, dormitories, etc. • Used alternative data sources, e.g., revenue data from the Census of Philippine Business and Industry for Retail Trade
Government final consumption expenditures	<ul style="list-style-type: none"> • Used updated data on income and expense from updated financial statements of the COA • Used updated price indicators
Durable equipment	<ul style="list-style-type: none"> • Included interplant transfer of durable equipment produced for own final use • Excluded non-durable equipment, e.g., spare parts for equipment and machineries, small tools, etc.

Breeding stocks and orchard development	<ul style="list-style-type: none"> • Included other livestock for breeding, e.g., horses, dogs, ostrich, etc. • Included other plantations for consideration under orchard development like cacao, coffee, durian, etc. • Used updated parameters on expenditures or maintenance costs of permanent trees under orchard development
Valuables	<ul style="list-style-type: none"> • New additions under gross capital formation – examples are precious stones, jewelries, paintings, etc., which are considered “store of values” by holder of these economic assets
Export and Imports of goods and services	<ul style="list-style-type: none"> • Harmonized SNA compilation of Exports and Imports of goods and services with the latest Balance of Payments to include the following: <ul style="list-style-type: none"> ○ Refined the recording of goods for processing ○ Included net merchanting ○ Included tuna caught on high seas ○ Included catering and fuel services availed by resident/non-resident airlines ○ Improved estimation methodologies for better capture of export and imports, both goods and services ○ Used updated BOP data
Net Primary Income	<ul style="list-style-type: none"> • Adopted one-year residency rule in accounting for the compensation of land-based workers; • Accounted for total outflow of compensation paid by residents to non-residents working in the Philippines

2.3 The Supply and Use Tables

The central framework of the SNA provides the Supply and Use Tables (SUT) in the form of matrices that record how supplies of goods and services originate from domestic industries and imports and how those supplies are allocated between intermediate or final uses.

The SUT provides an accounting framework within which the product flow method of compiling national accounts, whereby the total supplies and uses of individual types of goods and services have to be balanced with each other, can be systematically exploited. The SUT also provides the basic information for the derivation of detailed input-output tables that may be used for purposes of economic analyses and projections.

In the process of the overall revision and rebasing to 2018 of the PSNA, various data from censuses, surveys, and administrative-based information were utilized to compile the SUT. The SUT provides a tool to reconcile the production of goods and services and its utilization into intermediate consumption and final consumption while ensuring the conceptual soundness of NAP.

The PSA produced the 2018 benchmark SUT at the 240 x 240, 80 x 80, and 16 x 16 industry x commodity disaggregation. Annual SUTs from 2000 to 2019 were also produced at the summarized 80x80 and 16x16 industry levels. The SUT was the foundation of the estimates of the detailed sub-industries and expenditure items of the revised and rebased NAP.

2.4 Benchmarking

Benchmark is a standard, or point of reference, against which things can be compared, assessed, measured, or judged, while benchmarking is the process of comparing performance against that of others to identify areas of improvement (*OECD, n.d.*).

In the case of the quarterly national accounts compilation, the available datasets used for the scheduled estimation process that are mostly from survey results and administrative data, are limited in terms of completeness and scope, compared with census results and audited administrative reports. Best practice is to undertake an annual benchmark to bring the quarterly estimates into line with data, based on the information available only annually, assuming that this is more reliable than the quarterly information (*The 2008 SNA - compilation in brief, para 1.31*).

The annual benchmark estimates incorporate more comprehensive datasets therefore provide the most reliable information on the overall and long-term progress of the economy.

Benchmarking deals with the problem of combining a series of high-frequency data (e.g., quarterly data) with a series of low-frequency data (e.g., annual data) for the same variable into a consistent time series. (*QNA Manual, 2017 Edition, p. 86*). The ratio of the annual benchmark to the sum of the quarterly indicators for the four quarters shows the relationship between the two series as a single figure, which is called the benchmark–indicator (BI) ratio (*QNA Manual, 2017 Edition, para. 3.9*)

Simple benchmarking methods such as pro rata distribution of the annual total introduce discontinuity in the series between years known as the “step problem”. To avoid this, several mathematical techniques had been developed such as:

1. The proportional Denton method, which keeps the ratio of the benchmarked series to the indicator (i.e., the quarterly BI ratio) as constant as possible subject to the constraints provided by the annual benchmarks (*QNA Manual, 2017 Edition, para. 6.34*), and
2. The proportional Cholette–Dagum method with AR error, which is grounded on a statistical model that allows for (a) the presence of bias and auto-correlated errors in the indicator and (b) the presence of nonbinding benchmarks. The AR model for the error guarantees that (a) movements in the indicator are sufficiently pre-served in the back series and (b) extrapolations of the forward series are adjusted for a local level bias in the indicator. (*QNA Manual, 2017 Edition, para. 6.51-52*).

The benchmarking method applied during the overall revision and rebasing to 2018 was the Cholette–Dagum method using R software. The set of commands in R used the Cholette–Dagum method with AR error (ϕ value of 0.995).

2.5 Backcasting

Backcasting is a statistical technique employed to ensure the coherence of the time series across time while maintaining economic history of a country. Macroeconomic data requires long and consistent time series which are components for short-term economic modeling and forecasting. Policy development makes use of forecasts which are dependent on the use of long time series to estimate and project the dynamics of the economy. Data should be coherent over time to provide accurate measurements of short- and long-term economic changes.

2.6 Statistical analysis of the revisions

This statistical analysis is simply to compare the properties of the growth and trends of the major economic variables. This is a validation process to look at the statistical impact of the correction of the consistency issues on the important variables and balancing entries of the accounts.

Summary statistics of growth rates and revisions to growth rates for each relevant variable are as follows:

Growth rate or revision to growth rate	Purpose of summary statistic
Mean	Indicates average growth over the historical period
Mean Absolute	Indicates averages growth without offsets of positive and negative
Standard Deviation	Estimate of the dispersion of the growth rates
Minimum value	Lowest growth rate
Maximum Value	Highest growth rate
Range of 90% of values	Used to identify outliers – which may have economic significance
Cumulative Revisions or growth rates	Graph over time to find periods of news and noise

The summary statistics calculated are used to assess the reasonableness of the overall results, by looking at the consistency of the series with the new data sources, methods, and economic situation of a particular period. These summary statistics are also done for 2000 based and 2018 based series where it is compared and assessed.

Chapter 3. Statistical Infrastructure

This part defines the various statistical infrastructures adopted by the PSNA to generate consistent and comparable economic statistics.

3.1 Classification Systems

Statistical classifications serve as one of the key requirements on standard measuring of international statistics to ensure the reliability, and comparability of official statistics. For the purposes of analysis, certain elements need to be observed and grouped according to characteristics. Thus, all economic phenomena that are to be described in the form of statistics require systematic classification. Classifications divide the universe of statistical data into categories that are as homogeneous as possible with respect to those characteristics that are the objects of the statistical analysis.

The classification systems serve as frameworks for data collection, processing, compilation, and analysis to ensure the harmonization and comparability of statistics across all countries in supporting policies and decision-making. They are used as the international language in communicating statistics with other countries. The United Nations Statistics Division (UNSD) and other international organizations are the custodians of several international classification systems.

The UNSD in collaboration with the other international organizations maintains and updates international standard classifications with the recommendations and approval of the Expert Group on International Statistical Classifications. The classification systems serve as an international standard for the classifications of economic, social, environment and other activities. They also serve as bases for all countries in creating their own national classification systems.

The PSA is mandated to coordinate with concerned government departments and local government units (LGUs) in the adoption of statistical standards involving techniques, methods, concepts, definitions, and classifications to ensure that the data collected are categorized and measured according to the international classification and statistical standards.

As the custodian of the Philippine Classification Systems, the PSA regularly maintains and updates its version of classification systems aligned with the international classifications in collaboration with the interagency committees of the Philippine Statistical System recommendations and with the approval of the PSA Board. Below are the classifications adopted in the revised and 2018 rebased series.

- Philippine Standard Industrial Classification (PSIC) is a detailed classification of industries prevailing in the country according to the kind of productive activities undertaken by establishments. The international reference classification is the International Standard Industrial Classifications of All Economic Activities (ISIC) that provides classification according to the kind of economic activity in the fields of economic and social statistics, such as for statistics on national accounts, demography of enterprises, employment, among others. Latest classification is the 2009 PSIC and its International Classification alignment is ISIC rev. 4
- Philippine Standard Commodity Classification (PSCC) is a detailed classification of all commodities that enter the Philippine trade. The classifications are aligned with the Standard International Trade Classification (SITC) that is designed to provide the commodity aggregates required for purposes of economic analysis and to facilitate the international comparison of trade-by-commodity data. The latest classification is the 2015 PSCC and its international classification alignment is SITC rev 4.
- Philippine Classification of Individual Consumption According to Purpose (PCOICOP) is a detailed classification of individual consumption expenditures on goods and services. The international reference classification is the Classification of Individual Consumption According to Purpose (COICOP), that provides a framework of homogeneous categories of goods and services, which are considered a function or purpose of household consumption expenditure. The latest classification is the 2009 PCOICOP and its latest international classification is 2018 COICOP.
- Philippine Central Product Classification (PCPC) is a standard classification of goods and services, including tangible assets based on their physical properties and intrinsic nature as well as industrial origin. This is aligned with the Central Product Classification (CPC) that serves as an international standard for assembling and tabulating all kinds of data requiring product detail, including industrial production, national accounts, service industries, domestic and foreign commodity trade, international trade in services, balance of payments, consumption, and price statistics. The latest classification is the 2004 PCPC which is aligned with the CPC version 2.1.
- Philippine Standard Geographic Code (PSGC) is a classification and coding of the geographical-political subdivisions of the country, such as the region, the province, the municipality/city, and the barangay. The latest classification is 2018 PSGC.
- Philippine Standard Occupation Classification (PSOC) is a classification of the different occupations of the working population, including the military workforce of the country. The reference international classification is the International Standard Classification of Occupations (ISCO) that provides a basis for the international reporting, comparison, and exchange of statistical and administrative data about occupations; a model for the development of national and regional classifications of occupations; and a system that can be used directly in countries that have not developed their own national classifications. The International Labour Organisation (ILO) is the custodian for this classification. The latest classification is 2014 PSOC which is aligned with 2008 ISCO.

The 2009 PSIC provides the reclassification of industries of the PSNA to the current 16 major groupings. The revision of the PSIC reflects the changes in economic activities, emergence of new industries, and the structure of the economy considering the new technologies being used by industries that made them shift to another class of economic activity. Example is the online transactions for accommodation, travel, and the like, that used to be dealt with by travel agencies and related entities.

The adoption of the 2015 PSCC provides classification of all commodities that are traded in the Philippines. The emergence of the new commodities is brought about by the new technologies adopted by industries.

Table 3.1. Comparison matrix on the PSNA adopted classifications

International classification systems	Current Philippine classification systems (PSNA 2018-Based)	Previous Philippine classification systems (PSNA 2000-Based)
ISIC Rev. 4	2009 PSIC	1994 PSIC (11 Industries)
SITC Rev. 4	2015 PSCC	2004 and 1999 PSCC
2018 COICOP	2009 PCOICOP	1994 PCOICOP
None	2018 PSGC	2018 PSGC

3.2. Sources of Basic Data

The data used in the compilation of the PSNA are taken from three major sources: administrative data; census data; and survey data from the PSA, national line agencies, private establishments, and international websites.

3.2.1 Administrative data

Administrative data are generated from the monitoring and regulatory functions of government and private agencies. It is an extensive source of information and is relatively inexpensive compared to censuses and surveys.

As one of its functions, the PSA collaborates with national government agencies including Government-owned and controlled corporations (GOCCs) and their subsidiaries in the collection, compilation, maintenance, and publication of statistical information, including special statistical data derived from the activities of those departments, corporations, and their subsidiaries.

Administrative data used in the compilation of the PSNA are shown in Table 3.2.

Table 3.2. Administrative data used as input in the estimation of quarterly National Accounts of the Philippines

	Data	Data source agency
1	Balance of Payments	Bangko Sentral ng Pilipinas
2	Monthly Foreign Exchange Rates	
3	Overseas Filipinos remittances	
4	Income Statement of Banks and Non-banks Institutions	
5	Statement of Receipts and Expenditures	Bureau of Local Government Finance
6	Data on the recommended quantity of fertilizer applied to permanent crops	Bureau of Plant Industry
7	CPI of Trading Partners	Trading Economics
8	Annual Financial Report	Commission on Audit
9	Budget of Expenditures and Sources of Financing	Department of Budget and Management
10	National Expenditure Program	
11	Staffing Summary	
12	Cash Disbursement	
13	Data on Coal Gross Sales by Coal Contractors	
14	Monthly inventory of crude and petroleum products and monthly prevailing common prices of finished petroleum products	Department of Energy
15	Petroleum Service Contracts	
16	Power Consumption Data by Sector	
17	Alien Employment Permit	
18	Employed Persons	Department of Labor and Employment
19	Salaries of Alien Employees by industry	
20	Status of Implemented Projects data	
20	Status of Implemented Projects data	Department of Public Works and Highways
21	Visitor Arrivals and Tourist Receipts, Outbound Filipinos by Purpose and by Disembarkation and Average Length of Stay	Department of Tourism

	Data	Data source agency
22	Data on Rail Revenue	Department of Transportation
23	Steam Average Selling Price Data	Energy Development Corporation
24	Trade margin of animals for breeding	Federation of Cattle Raisers Associations of the Philippines
25	Monthly data on the average fertilizer retail prices	Fertilizer and Pesticide Authority
26	Trade margin of animals for breeding	Food and Agriculture Organization of the United Nations
27	Forest Charges on Minor Forests Products	Forest Management Bureau
28	Value and Volume of Production of Logs and other Forests Products	
29	Data on Dubai crude oil prices from World Bank	Index Mundi
30	Estimates and forecasts of the IT-BPM industry in terms of its revenue	IT and Business Process Association of the Philippines
31	Data on fishery products including tuna and shrimps (volume and unit value)	Japan Customs
32	Data on Rail Revenue	Light Rail Transit Authority
33	Number of Water Connections	Manila Water
34	Number of Water Connections	Maynilad
35	Water Production, Billed Volume, Billed Amount, and Average Price	Metropolitan Waterworks and Sewerage System
36	Volume and Value of Production mostly for metallic mining	Mines and Geosciences Bureau
37	Transmission Price Data	National Grid Corporation of the Philippines
38	Generation Price Data	National Power Corporation
39	Data on catering and fuel services availed by the airlines abroad as payment to non-resident	Philippine Airlines
40	Passengers Carried and Revenues	
41	Live weight data of carabao	Philippine Carabao Center
42	Trade margin of animals for breeding	

	Data	Data source agency
43	Monthly data volume of unloading of tuna and other species (in metric tons)	Philippine Fisheries Development Authority
44	Data on Rail Revenue	Philippine National Railways
45	Average Salary of OFWs	Philippine Overseas Employment Administration
46	Monthly Deployment Data on Overseas Filipino Workers (OFWs)	
47	Number of Overseas Filipino Workers and Average Salaries	
48	Prices of Horses	Philippine Racing Commission
49	Ship calls (domestic and foreign)	Philippine Ports Authority
50	Passenger traffic (embarked/disembarked)	
51	Cargo Throughput (domestic and foreign)	
52	Passengers Carried and Revenues	Cebu Pacific, Inc.
53	Construction Statistics from Approved Building Permits	Philippine Statistics Authority
54	Foreign Trade Statistics	
55	Philippine Tourism Satellite Accounts	
56	Production Accounts from the National Accounts of the Philippines	
57	Financial Statement of selected companies	Philippine Stock Exchange
58	Construction projects through public-private partnerships	Public-Private Partnership Center of the Philippines
59	Monthly inventory levels of raw sugar (centrifugal sugar) and for composite price of raw sugar	Sugar Regulatory Administration
60	Sugarcane Volume of Production	
61	Monthly Outbound Travel Tax Collections	Tourism Infrastructure and Enterprise Zone Authority
62	Compendium on Research and Development Statistics	Department of Science and Technology
63	Monthly Export and Import Price Indexes by Harmonized System	U.S. Bureau of Labor Statistics

	Data	Data source agency
64	Monthly commodity prices and indexes	The World Bank
65	Financial Statements of Major Non-Financial Corporations	Department of Finance
65	Office of the Development Assistance - Data	National Economic Development Authority
66	Infrastructure flagship projects	

3.2.2 Census

Census provides a complete coverage of statistical units and conducted at regular intervals, which make comparisons over time easier. In terms of timeliness and budget, however, the preparation, collection and analysis require more time and financial budget to conduct than sampling surveys. The PSNA relies heavily on census-based data for benchmark. The following censuses conducted by the PSA, are used in the PSNA:

3.2.2.1. Census of the Philippine Businesses and Industries (CPBI)

The CPBI provides establishment data on outputs, inputs, employment, compensation, capital expenditures and related statistics. It is used for the benchmark estimation of the production aggregates output, intermediate consumption, and gross value added, as well as the output components and the intermediate consumption components for the 2018 SUT. Some of the expenditure items such as capital formation items also use CPBI in the benchmark estimation.

3.2.2.2. Census of Population and Housing (CPH)

The CPH is the source of information on the size and distribution of the population as well as information about the demographic, social, economic, and cultural characteristics. Population projections from population census data series enable PSNA to generate per capita data. It also provides housing count and housing characteristics which provides information and parameters in estimating ownership of dwelling and construction industries.

3.2.2.3. Census of Agriculture and Fisheries (CAF)

The CAF is a decennial undertaking of complete count of all farm operators. Source of information on structures and characteristics of farms such as size; tenure of holdings; land use and area planted to crops; production and number of livestock and poultry; and distribution and number of households engaged in farming, fishing, and related activities.

3.2.3 Survey

A survey is an investigation about the characteristics of a given population by means of collecting data from a sample of that population and estimating their characteristics through the systematic use of statistical methodology.

Surveys provide more timely statistics used as a basis for policy and decision making. Conduct of surveys requires lesser budget and preparations than censuses. However, surveys only cover a selection of people or a subset of a population (sampling) with a view of drawing inferences about the whole population. Sampling surveys may not perfectly reflect the information compared with the data collected through censuses and thus it provides sampling error.

The PSA regularly conducts the following surveys that are used as inputs in the compilation of the PSNA as shown in Table 3.3 and Table 3.4.

Table 3.3. List of establishment-based surveys

	Industry-based Surveys
1	Annual Survey of Philippine Business and Industry
2	Commercial Livestock and Poultry Survey
3	Dairy Production Survey
4	Input-Output Survey of Philippine Business and Industry
5	Monthly Integrated Survey of Selected Industries
6	Producer Price Survey
7	Price Survey
8	Quarterly Aquaculture Survey
9	Quarterly Commercial Fisheries Survey
10	Quarterly Municipal Fisheries Survey
11	Quarterly Survey of Philippine Business and Industry
12	Retail Price Survey
13	Survey of Slaughterhouses and Poultry Dressing Plants
14	Wholesale Price Survey

Table 3.4. List of household-based surveys

	Household-based Surveys
1	Backyard Livestock and Poultry Survey
2	Costs and Returns Survey
3	Crops Production Survey
4	Family Income and Expenditure Survey
5	Farm Prices Survey
6	Labor Force Survey
7	Palay and Corn Production Survey

Chapter 4. Terms and Definitions

GDP is the best-known and most frequently used measure of economic performance of a country, which is usually presented in terms of growth. This pertains to all output or production activities carried out by all institutional units in the Philippines during any given time, with no double counting. The 2008 SNA defines the scope of output and production measured in the national accounts.

As stated above, there are three approaches of measuring GDP. PSA produces quarterly GDP estimates using the production and expenditure approaches. The production-based GDP is derived by industry, whereas the expenditure-based GDP series is calculated by final demand items.

4.1 Gross domestic product by industry

One of the major objectives of national accounts is to measure the value added resulting from production activities in the economy. If all production, including non-market output, were added together, considerable duplication would occur because many goods and services provided by one producer are purchased by another for use in subsequent production. As a result, the value of some goods and services becomes incorporated in the value of other goods and services. The national accounting process removes the value of intermediate consumption to avoid double counting. This is the concept of value added, or production-approach of GDP.

Gross value added is defined as output less intermediate consumption. It is a measure of the contribution to GDP made by an individual producer, industry, or sector; gross value added is the source from which the primary incomes of the SNA are generated and is therefore carried forward into the primary distribution of income account.

Gross output	<ul style="list-style-type: none"> ● Revenue from main activity ● Industrial services done for others ● Non-industrial services done for others ● Trade margin on goods for resale ● Changes in inventory of finished products, goods for resale and work-in-progress ● Fixed assets produced on own account ● Other production income not relating to ownership of financial and non-produced assets
Less: Intermediate consumption	<ul style="list-style-type: none"> ● Materials and supplies ● Fuels purchased ● Electricity consumed ● Industrial and non-industrial services done by others ● Changes in inventory of materials and supplies ● Other intermediate cost
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Equals: Gross value added (GVA) </div>	

4.2 Gross domestic product by expenditure

All output from production is destined for either intermediate or final consumption. Since the national accounts aims to measure the unduplicated value of production, this is equivalent to examining the value of all final uses or demands. By summing the components of final demand, expenditure on GDP is obtained.

In the expenditure approach, GDP is derived as the sum of final consumption expenditures, gross fixed capital formation (which is acquisition less disposals of produced and non-produced fixed assets), changes in inventories and exports of goods and services less imports of goods and services.

Expenditure on GDP is calculated as:

Household final consumption expenditure
 plus Government final consumption expenditure
 plus Gross fixed capital formation
 plus Changes in inventories
 plus Acquisitions less disposals of valuables
 plus Exports of goods and services
 less Imports of goods and services
 = Expenditure on gross domestic product

When calculating GDP by this method, the value of imports must be deducted since they are implicitly included in the final sales and represent non-residents rather than Philippine produced goods and services.

4.2.1 Household final consumption expenditure

Household final consumption expenditure (HFCE) consists of expenditures incurred by resident households on consumption goods or services. It also includes the estimated value of barter transactions, goods and services received in kind, and goods and services produced and consumed by the same household.

HFCE includes the final consumption expenditure of the following residents: a) individual households, b) institutional households, c) Filipinos abroad during vacation or visits, and d) overseas Filipino workers (OFWs) that are still considered residents, following the SNA rule of residency that is based on their center of predominant economic interest. Normally, at least one year of activity or residence in a territory is required to treat a unit as resident of that territory. Exceptions to that rule are: 1) students who go abroad to study full time are to be treated as residents of the countries they come from; 2) patients who go abroad for treatment; 3) diplomats and military personnel; and 4) cross-border workers, international organization.

Specifically, HFCE consists of the following groups and their expenditures:

- Individual and institutional households (HHs)
 - All goods and services bought for final consumption by HHs;
 - All goods produced for own final consumption by HHs including those goods produced by HH enterprise and retained for final consumption;
 - Domestic services produced for own final consumption by employing paid domestic staff;
 - Services of owner-occupied dwellings (whose imputed values are equivalent to market rentals);
 - All goods and services acquired by HHs in barter transactions for final consumption;
 - All goods and services received by HHs as payment in kind from producers;
 - Expenditures incurred in “do-it-yourself” decoration, maintenance and routine repairs of own dwellings (should avoid double-counting if they are treated as intermediate consumption of owner-occupied housing services), and personal goods;
 - Payment to government units to obtain various kinds of licenses, permits, certificates, passports, etc.; and
 - Explicit and imputed service charge on household uses of financial intermediation services provided by banks, insurance companies and pension funds, etc.

- Non-profit institutions serving households (NPISHs)
 - Expenditures on market goods and services that are supplied without transformation and free of charge to HHs (social transfers in kind)

4.2.2 Government final consumption expenditure

Government final consumption expenditure consists of expenditures incurred by the general government on both individual consumption goods and services and collective final consumption services. The values of these expenditures are equal to the sum of:

- The estimated values of all types of government output less the value of production for own capital formation and less the values of any receipts from sales; and
- The expenditure by the government on market goods and services on behalf of households is recorded as both final consumption expenditure of the government and actual final consumption of households.

The government final consumption expenditure is divided into expenditure that benefit individuals (individual goods and services) and expenditure that benefit the community (i.e., collective services). In the PSNA, the estimates for GFCE are derived separately for national government agencies, local government, social security schemes and non-profit institutions serving the government.

4.2.3 Gross capital formation

Gross capital formation (GCF) shows the acquisition less disposal of produced assets for purposes of fixed capital formation, inventories, and valuables.

GCF is measured within the context of the asset boundary. The asset boundary is defined as the line between products that are retained in the economy and those that are used for consumption and products that are used for capital formation.

4.2.3.1 Gross fixed capital formation (GFCF)

This comprises the outlays of producers on fixed assets such as buildings, motor vehicles, plant and machinery, road construction, improvements to land, software, and mineral exploration and evaluation. In measuring the outlays, sales of fixed assets are deducted. While improvements to land are included, net purchases of land itself are excluded. Also included is the value of construction work done by a firm's own employees.

Fixed capital goods are used repeatedly in production and have a usable lifetime of one year or more. The term 'gross' indicates that consumption of fixed capital (depreciation) has not been deducted from the value of outlays.

Expenditure on existing capital assets is included in gross fixed capital formation if it increases the productivity of the asset (for example, extending its life, increasing quality of quantity or output). Expenditure that is intended to maintain the current level of productivity is considered as intermediate consumption.

4.2.3.1.1 Construction

Construction is measured in the production accounts and expenditure accounts. The output of the construction industry is either a consumption or an investment of the institutional sectors in the economy. Small value construction repairs are either final consumption of households and government, or intermediate consumption of industries. Construction output that will be used for further production, such as construction of residential buildings for the ownership of dwellings, or roads and bridges as investments by the general government to be used by households and firms to carry out their respective activities. In the 2018-based, the then Public construction is now relabeled as General government, whereas Private construction is disaggregated into Financial and non-financial corporations, and Households and NPISHs.

4.2.3.1.2 Durable equipment

Durable equipment (DEQ) under GFCF are machinery and equipment that are used repeatedly or continuously in production processes for more than a year. It consists of the producer's value of acquisitions of new and existing machinery and equipment less the value of disposals of existing machinery and equipment. It covers transport equipment, industrial equipment and other machinery and equipment. A durable equipment is capitalized when there is a change of ownership and is used in the production process.

In more details, it includes:

- Acquisition of new and existing less disposal of existing machinery and equipment that are used repeatedly or continuously in production for more than a year;
- Major improvements, including renovations and reconstruction of machinery and equipment that significantly increase their productive capacity;
- Costs associated with the transfers of ownership of machinery and equipment; and
- Expenditures on military equipment.

However, it excludes:

- Small, inexpensive tools that are used to perform relatively simple operations like saws, spades, knives, axes, hammers, etc.
- Machinery and equipment that are acquired by household for purposes of final consumption or consumer durables;
- Machinery and equipment integral to buildings; and
- Parts of machinery and equipment which are considered intermediate goods.

4.2.3.1.3 Breeding stocks and orchard development

Breeding Stocks and Orchard Development (BSOD) is one of the expenditure items under Fixed capital formation. BSOD, also referred to as cultivated biological resources, cover animal and plant resources yielding repeat products whose natural growth and regeneration are under the direct control, responsibility, and management of institutional units.

Animal resources yielding repeat products such as breeding stock, dairy cattle, sheep reared for wool, and draught animals are considered as fixed assets. Similarly, tree, crop, and plant resources yielding repeat products such as fruit trees, rubber trees, palm trees, etc. are fixed assets.

4.2.3.1.4 Intellectual property products

Intellectual Property Products (IPP) is a separate expenditure item that falls under Fixed capital formation. According to the 2008 SNA, these are the result of research, development, investigation, or innovation leading to knowledge that the developers can market or use to their own benefit in production because use of the knowledge is restricted by means of legal or other protection.

The scope and coverage of the IPP are summarized in the following sub-sector classification:

- Research and development

Research and development consists of the value of expenditures on creative work undertaken on a systematic basis to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the SNA.

- Mineral exploration and evaluation

Mineral exploration and evaluation consist of the value of expenditures on exploration for petroleum and natural gas and for non-petroleum deposits and subsequent evaluation of the discoveries made. Mineral exploration is undertaken to discover new deposits of minerals or fuels that may be exploited commercially.

- Computer software and databases

Computer software and databases consists of computer programs, program description and computing materials for both systems and application software. Gross fixed capital formation in computer software includes both the initial development and subsequent extensions of software as well as acquisition of copies that are classified as assets.

On the other hand, databases consist of files of data organized in such a way as to permit resource - effective access and use of the databases may be developed exclusively for own use or for sale as an entity or for sale by means of a license to

access the information contained. The standard conditions apply for when an own-use database, a purchased database, or the license to access a database constitutes an asset.

- Entertainment, literary or artistic originals

Entertainment, literary or artistic originals consist of the original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programming, musical performances, sporting events, literary and artistic output, etc., are recorded or embodied.

- Other Intellectual Property Products

Other intellectual property products include any such products that constitute fixed assets but are not captured in one of the specific items above.

4.2.3.2 Changes in inventories

Inventories consist of outputs that are held by the producers before processing, selling, or delivering it to other units. It also includes acquired stocks intended to be used as input to production as goods for resale.

According to the 2008 SNA, inventories cover the following five transactions:

- Materials and supplies

These include all goods held by an enterprise to be used as intermediate inputs to production. Office supplies inventory of non-market producers owned by government units is also accounted for in materials and supplies.

- Work-in-progress

It consists of goods that are not yet finished and have not reached the state in which it is normally supplied to other institutional units.

- Finished goods

These are products held only by the producing unit and considered as final output not intended to be processed further.

- Military inventory

This includes single-use items ammunitions, missiles, rockets, bombs, etc. However, single-use weapons with high destructive capacity can be treated as fixed capital formation.

- Goods for resale

These are products acquired by wholesalers and retailers intended for reselling to their customers.

In the PSNA, Changes in inventories (CIN) is classified according to type of commodity with four components. First component is agriculture which includes all agricultural commodities like rice, corn, and sugar that are being held in inventories, as well as stock of other agricultural products like fisheries, tobacco, abaca, etc. It also captures inventory of livestock and poultry that are not accounted for in the capital formation. Second is crude oil and petroleum products inventory from establishments and refineries. Third is inventories classified according to the five transactions mentioned above and are held by different establishments. The last component is the materials and supplies inventories acquired by the government.

Period to period changes in inventories can be calculated by deducting the inventories at the end of the previous accounting period from the inventories at the end of the current accounting period. Stocks may be acquired through purchase, barter, or internal transactions of the producer. Disposal of goods through sale or transfer and accidental damage, wastage, or stolen goods are considered as withdrawals and losses from the inventory.

4.2.3.3 Valuables

Acquisitions less Disposals of Valuables are net acquisition of produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time. Valuables are expected to appreciate or at least not to decline in real value, nor to deteriorate over time under normal conditions. It can be acquired by any institutional units. The capital account records the acquisition of valuables when these are newly produced goods or imported.

It includes precious metals and stones, antiques and other art objects, and collectibles such as stamps, coins, etc. that have a recognized market value.

However, it excludes:

- Occurring valuables such as antiques and work of arts which are originally recorded as consumption goods;
- Precious stones and metals held by enterprises for sale or use as inputs into processes of production;
- Monetary gold and other precious stones and metals held as financial assets;
- Painting, sculptures, and other art objects held by enterprises for sale; and
- Monuments.

4.2.4 Exports of goods and services

Exports include all goods and services produced by Philippine residents and purchased by the rest of the world.

Exports of goods are valued free on board (fob), that is, the value of goods as they cross the customs border. The time of recording of the acquisition of goods is the moment when the economic ownership of these goods changes hands. Exports of goods are recorded when change of ownership occurs. In accordance with the change of ownership principle, the following transactions are excluded:

- Goods in transit through a country;
- Transportation equipment and other movable kinds of equipment which enter a country without change of ownership; for example, construction equipment used for installation or construction purposes abroad;
- Equipment and other goods which are sent abroad for minor processing, maintenance, servicing, or repair (excludes goods processed and transformed into different goods);
- Other goods which enter a country temporarily, being generally returned in their original state and without change of ownership (e.g., goods sent abroad for exhibition purposes only, equipment for orchestras, stages performances, etc., while on tour abroad, goods on consignment which are returned because an expected sale does not materialize, goods shipped under an operating lease, animals sent abroad for racing, shows, other forms of entertainment, or breeding purposes);
- Goods shipped from a country's own embassies, military bases or other enclaves which are geographically situated inside the national frontiers of another country; and
- Goods on consignment lost or destroyed after crossing a frontier but change of ownership occurs.

Exports of services is aligned with the underlying principles of the 2008 SNA as well as the Balance of Payments and International Investment Position. Manual, Sixth Edition (BPM6). The classification of the Exports of services includes:

- Transport
- Insurance and pension services
- Travel
- Government goods and services n.i.e.
- Telecommunications, computer and information services
- Business services
- Manufacturing services on physical inputs owned by others
- Miscellaneous services

4.2.5 Imports of goods and services

Imports include all goods and services produced by the rest of the world and purchased by Philippine residents. Imports of goods are also valued free on board (fob) and excludes freight and insurance. Exclusions for Imports of goods are also the same with the Exports of goods in terms of change of ownership principle. Meanwhile, classification of Imports of services is the same with Exports of services but highlighting "Charges for the use of intellectual property" instead of "Manufacturing services on physical inputs owned by others."

Chapter 5. General Methods

5.1 Production Approach

In the production approach, GDP is measured at market prices by getting the sum of the gross value added (GVA) of all resident enterprises plus any taxes less subsidies on products not already in value of output. In the PSNA, GDP is calculated as the sum of the gross value added for each of the 16 industries:

$$GDP = \sum_{j=1}^{n=16} GVA_j$$

Where:

GDP = gross value added of the total economy
 GVA_j = gross value added of industry j
 j = industry classification

Gross value added is defined as output less intermediate consumption. It is a measure of the contribution to GDP made by an individual producer, industry, or sector; gross value added is the source from which the primary incomes of the SNA are generated and is therefore carried forward into the primary distribution of income account.

Gross output is the value of goods and services produced by an establishment. It is equal to the value of sales adjusted for the changes in inventories of finished goods. Meanwhile, intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.

In the Philippines, output and intermediate consumption are not asked in surveys and censuses. The PSA derives these from administrative data and from specific items processed from the results of establishment- and household-based censuses and surveys.

In measuring GVA at the industry level, the PSNA also accounts for goods and services produced by both organized and unorganized industry. The organized industry includes establishments and the government as producers of output. In the PSNA, GVA of the organized industry is computed at the 5-digit level of PSIC for each of the sub-industries. These are then summed up to derive the total GVA of the industry.

On the other hand, the unorganized industry covers goods and services produced that are not captured in formal establishment censuses, surveys and administrative data. To come up with the GVA of the unorganized industry, indirect estimation is employed using the residual employment approach.

Using this approach, employment in the unorganized industry is derived as the residual of the employment of the Labor Force Survey (LFS) and the Census of Philippine Business and

Industry (CPBI) for the benchmark year or the Annual Survey of Philippine Business and Industry (ASPBI) for the non-benchmark years. The residual employment is multiplied by the per capita gross output of small establishments or those establishments with less than 20 employees in the ASPBI and CPBI to derive the gross output of the unorganized industry. GVA is derived by multiplying the resulting gross output to the GVA ratio of small establishments.

5.1.1 Estimating Value Added

There are two basic approaches in deriving the value added: double and single deflation. Double deflation is a commonly used approach, but data availability is a major constraint. In the PSNA, the single extrapolation approach is utilized using volume indicators to extrapolate gross output.

This method involves extrapolating the base year value added by any one of the different types of single indicators. These indicators need not be directly linked to the current price accounts, and in many instances volume measures are used as proxies for the actual quantities of goods or services being produced.

There are three types of indicators, and within each are several variations. In the PSNA, indicators on gross output, intermediate consumption and components of value added are used depending on the availability of relevant indicators. Usually, the gross output indicator is utilized assuming that real value added has similar movements to gross output. The variations used in the accounts are Laspeyres output quantity index based on actual quantities revalued at base year prices, an approximate Laspeyres output quantity index based on deflation of current price output, and an output volume index based on physical activity indicators weighted by the relative value in the base year of the relevant activity.

5.2 Expenditure Approach

Methods and data sources used to derive quarterly current price estimates of GDP(E) are consistent, whenever possible, with both the annual current price estimates and the chain-volume series. As a result, two basic approaches are used, and these are direct measurement in current prices and reflation of a chain-volume measure estimate. If no appropriate quarterly information is available, then the annual value must be interpolated and extrapolated without an indicator. This is only used in a few instances.

5.2.1 Direct measurement

This method uses quarterly current price data to either directly calculate the quarterly expenditure values or to provide an indicator of the series to be measured. Direct measurement of the current price values is used widely in household consumption, where quarterly data is available from the establishment surveys, particularly the retail trade. In Exports and Imports of goods and services, monthly FTS and BOP data are used.

5.2.2 Reflation

This is done by one of two ways:

First, a price index or unit values can be used to re-express a volume series back to current prices. This method is used when there is no single price applicable to the volume series being revalued, or the volume series provides only an indicator of the desired series rather than the actual level.

Second, individual unit prices are used to quantity revalue a volume series. Like quantity revaluing a constant price series, this second method of reflation requires very detailed data on both prices and volumes.

5.2.3 Interpolation and extrapolation

Good quality data for the quarterly current price series is often more difficult to obtain than what is available annually. In these cases, reconciliation, interpolation and extrapolation are used to ensure consistency of the quarterly estimates with the annual estimates. Similarly, where no quarterly data is available, a quarterly series is derived from the annual figures by using interpolation using available indicators.

5.3 Deriving Constant Price

Nominal or current price series can be considered as the sum of transactions in quantities of goods and services (Q_n) expressed using the price at the time the transaction took place (P_n). The corresponding real series uses the same quantities (Q_n) expressed in the prices at which the transactions would have occurred in some base period (P_0). Thus, a current price series, of the form $\sum P_n Q_n$, when expressed as a series free of the price effect, is of the form $\sum P_0 Q_n$.

In principle, there are three methods of deriving the constant price series:

- quantity revaluation
- price deflation
- volume extrapolation.

5.3.1 Quantity revaluation

Quantity revaluation substitutes for each item, or each group of homogeneous items, the price of the base period for the price of the current period. The elemental series, that is, $\sum P_0 Q_n$, is calculated directly. This method can only be applied if the commodities are defined enough to ensure they are homogeneous in content, and sufficiently free from quality change over time (since a change in quality is defined as a change in quantity). This requires an extensive range of quantity data and base period prices for each commodity or group of homogeneous commodities in the series. These demands are not often met.

Quantity revaluation is usually adopted for measuring the value added of agricultural and livestock industries where generally, information on quantities and prices are available at a very detailed level.

5.3.2 Price deflation

In the series, the change in prices is approximated by the price changes in a sample of items typical of those in the series to be deflated. This is presented in the form of a price index. Because each elemental series is a Laspeyres volume index, the price index used should be of a Paasche formulation. This uses the symmetry between Laspeyres and Paasche price and volume indexes. A current price series divided (deflated) by a Paasche price index results in a Laspeyres volume measure:

$$\sum P_0 Q_n = \frac{\sum P_n Q_n}{\sum P_n Q_n / \sum P_0 Q_n}$$

However, the information on current weights required to prepare Paasche price indexes is rarely available, and, in practice, price deflation is carried out using Laspeyres base weighted price indexes. This provides only an approximation of the desired result. Nevertheless, it is satisfactory, provided that there has not been a significant change in the relative quantities of each item since the base period, and the prices of the items have not moved at markedly different rates.

The weakness inherent in this approximation can be minimized if the deflation is carried out at the most detailed level, if possible.

5.3.3 Volume extrapolation

The alternative to quantity revaluation or deflating current value series using a price index is to multiply the base period value by a volume index. This volume index should be of Laspeyres type with base period prices as weights, and the results should be a constant price series that equals the base period value times the volume index, or:

$$\sum P_0 Q_n = \sum P_0 Q_0 * \frac{\sum P_0 Q_n}{\sum P_0 Q_0}$$

Production, consumption, capital formation, exports and imports have price and volume dimensions, and so volume and price indices can be compiled for these statistics. Volume estimates (such as the constant price estimates in the current PSNA) are used to measure growth free of the direct effects of inflation. Volume estimates of GDP and its major components are the most commonly used national account statistics. The 2008 SNA strongly recommends that the volume estimates should be compiled as chain volume measures, rather than the more traditional constant price estimates. This recommendation has not yet been adopted in the PSNA, but experimental chain volume measures have been derived and compared with the constant price estimates.

Chapter 6. Reconciliation and linking of series

Most of the time, data available on an annual basis is usually more complete. Benchmarks set the level of activity in an industry or expenditure item and are traditionally available annually. However, there are benchmark series such as the Family Income and Expenditure Survey (FIES) or the censuses which are available less frequently, every three and six years, respectively.

Benchmarking methods in the national accounts are used to derive quarterly series that are consistent with their corresponding annual benchmarks and, at the same time, preserve the short-term movements of quarterly economic indicators.

An indicator series is a proxy or representation which is expected to mirror the quarterly trends or changes of the 'true' series. The level of the indicator series may vary from the annual benchmark. This could be because the quarterly series is derived from a sample of establishments or from administrative data.

Benchmarks are considered more reliable but are available less frequently than quarterly indicators. Where quarterly estimates are linked to annual benchmarks one of two basic approaches is used. Reconciliation is used when a quarterly indicator series and a set of annual benchmarks are available. This method may be necessary to adjust quarterly series that are subject to both annual and quarterly aggregation. Interpolation is conducted when no indicative quarterly series is available.

6.1 Reconciliation

In this method, a quarterly indicator series is obtained and reconciled to the annual value. Production indicators will preferably be output-based measures, but data limitations can result in input measures needing to be used. As a rule, the quarterly indicator will represent a subset of the series being measured.

The indicator series is reconciled to the annual benchmark, preserving the quarter-on-quarter movements of the indicator series but scaling its values to sum to the annual. When the annual value is not available for the latest periods, the movements in the quarterly series are extrapolated from the last available annual estimate. As more recent annual values become available, the indicator series is reconciled to the new benchmark.

6.2 Interpolation and extrapolation

When no quarterly data is available, a quarterly series can be derived from the annual estimate by a process of interpolation. This method derives a quarterly series which gives the best quarterly line between the annual points.

When annual estimates are not yet available for the latest periods, an extrapolation is made of the annual values for the required periods. Forecasting of benchmarks can be achieved by using a weighted average of the movements in previous years. If there is no

evidence of a strong trend in the annual series, or other available data is found to be superior to make a forecast, the moving average technique is replaced.

Interpolation and extrapolation of an annual value without an indicator series is the least desirable method for deriving quarterly estimates. This is used only for areas within the published statistics, where little short-term variation in value added is expected, or where no quarterly data is obtainable.

6.3 The link between annual and quarterly series

Compared with the data used to produce the annual series, the quarterly series for both production and expenditure measures of GDP are derived from a smaller range of data. As a result, they are regarded as being less accurate. Although the same sources and methods are used whenever possible, alternative sources and methods for the quarterly series are necessary when corresponding quarterly data is not available.

There are three separate types of relationships between quarterly and annual data:

- Quarterly and annual series are derived from the same information sources. In this case, the annual figures are calculated by summing the estimates for the four appropriate quarters.
- Quarterly and annual series are derived from different sources. In this situation, the quarterly indicator provides the basis of the quarterly movements. The independently derived annual series provides the annual benchmark levels. The quarterly indicator is reconciled to the annual series in a way that preserves the quarterly distribution within the time series with the condition that the annual sum of the reconciled series equals the annual estimate.
- No quarterly indicator series is available and quarterly estimates are prepared by interpolating between annual benchmarks. The estimates are generated using the same mathematical techniques used to reconcile quarterly indicators to annual benchmarks. For the latest quarters, estimates are prepared by extrapolating the interpolated quarterly series. This method is used sparingly (see section on Interpolation and extrapolation above).

Balanced national accounts provide reconciled production data using the supply-use framework. This is particularly relevant for the production approach. Provisional estimates of expenditure components are more timely but less detailed. These estimates can be revised following the alternative information in the supply-use framework.

Both annual national accounts statistics (the balanced and provisional estimates) provide benchmarks for various quarterly statistics. For example, each commodity of a household's final consumption expenditure is reconciled with the estimates of the total production (supply) of that commodity within the supply-use framework. Annual results for intermediate consumption, gross output or value added are used in deriving the production approach whenever price deflation is used.

Chapter 7. Standard treatments

7.1 Revision policy

Revisions in the PSNA have arisen from the use of data coming from various partner agencies, both public and private institutions. Pursuant to PSA Board Resolution No. 01 Series of 2017-053, Approving the Policy on Updating the National Accounts, the updating of the Quarterly Accounts for each quarterly estimation round to be limited to the immediately preceding quarter. The compilation of the quarterly national accounts requires a large set of information from various sources, covering data generated from surveys as well as compiled from administrative records. Hence, it is a standard international practice to update the accounts as additional data become available.

GDP (Production and Expenditure)		
	Current	Constant
Quarterly	Released every quarter for the immediately preceding quarter	Same
Annual	Released once a year every April round of estimation. Can revise up to three preceding years or twelve preceding quarters	Same

7.2 Seasonal Adjustment

A time series is a set of observations on a variable measured or recorded chronologically with equal intervals. 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. Seasonal adjustment is a statistical technique to remove the effects of seasonal calendar influences operating on a time series.

The purpose of seasonal adjustment is to provide a better understanding of the underlying trends in the series. It removes the seasonal component in the series revealing the true behavior or movement allowing the comparisons between periods. It allows a timely assessment of the current economic conditions and identification of turning points in key macroeconomic variables, such as quarterly GDP.

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.

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.

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

To maintain the quality of the seasonal adjustment, 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 QNA. Finally, to examine the reliability of the estimates, the Quality Statistic (Q-statistics) is measured for each adjusted series.

Chapter 8. Methods in Deriving the Production Industries and Expenditure Items

Industry	Current Price Series		Constant Price Series	
	Quarterly Method	Annual Method	Quarterly Method	Annual Method
a. Agriculture, forestry, and fishing				
1. Agriculture				
i. Agricultural crops	Output indicators on the volume and value of production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Farmgate prices).	Sum of four (4) quarters in the reference year
ii. Livestock, Poultry and egg production, and other animal production	Output indicators on the livestock, poultry and egg production, and other animal production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Farmgate prices).	Sum of four (4) quarters in the reference year
2. Forestry				
i. Forestry and logging	Output indicators on the forestry and logging are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Producer Price Index).	Sum of four (4) quarters in the reference year
3. Fishing				
i. Fishing and aquaculture	Output indicators on the fishing and aquaculture are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Farmgate prices).	Sum of four (4) quarters in the reference year

4. Support activities to agriculture, forestry and fishing	Output indicators on the support activities to agriculture, forestry and fishing are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Farmgate prices).	Sum of four (4) quarters in the reference year
b. Mining and quarrying				
1. Mining				
i. Mining of coal	Output indicators on the value of coal production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index).	Sum of four (4) quarters in the reference year
ii. Extraction of crude petroleum and natural gas	Output indicators on the value of crude petroleum and natural gas production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index).	Sum of four (4) quarters in the reference year
iii. Mining of gold and other precious metal ores	Output indicators on the value of gold and silver production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index).	Sum of four (4) quarters in the reference year
iv. Mining of nickel ores	Output indicators on the value of nickel production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index).	Sum of four (4) quarters in the reference year

v. Mining of copper ores	Output indicators on the value of copper production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index).	Sum of four (4) quarters in the reference year
2. Quarrying				
i. Stone quarrying, other mining and quarrying	Output indicators on the revenue data of stone, sand and clay quarrying establishments, establishments with mining and quarrying activities, n.e.c, and establishments providing mining support service activities from QSPBI; value of production of cement manufacturing establishments from MISSI; and value of chromite production are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., WPI, Commodity price index, CMWPI).	Sum of four (4) quarters in the reference year
c. Manufacturing				
1. Food, beverage, and tobacco product manufacturing				
i. Manufacture of food products	Output indicators on the value of production of food product manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Food Products).	Sum of four (4) quarters in the current year
ii. Manufacture of beverages	Output indicators on the value of production of beverages manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Beverages).	Sum of four (4) quarters in the current year

iii. Manufacture of tobacco products	Output indicators on the value of production of tobacco product manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Tobacco products).	Sum of four (4) quarters in the current year
2. Textile, leather, clothing, and footwear manufacturing				
i. Manufacture of textiles	Output indicators on the value of production of Textiles manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Textiles).	Sum of four (4) quarters in the current year
ii. Manufacture of wearing apparel	Output indicators on the value of production of wearing apparel manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Wearing apparel).	Sum of four (4) quarters in the current year
iii. Manufacture of leather and related products, including footwear	Output indicators on the value of production of leather and related products including footwear manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI leather and related products, including footwear).	Sum of four (4) quarters in the current year

3. Wood and paper products manufacturing				
i. Manufacture of wood, bamboo, cane, rattan articles and related products	Output indicators on the value of production of wood, bamboo, cane, rattan articles and related products manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI wood, bamboo, cane, rattan articles and related products).	Sum of four (4) quarters in the current year
ii. Manufacture of paper and paper products	Output indicators on the value of production of paper and paper products manufacturing establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI paper and paper products).	Sum of four (4) quarters in the current year
4. Printing				
i. Printing and reproduction of recorded media	Output indicators on the value of production of printing and reproduction of recorded media establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the current year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI Printing and reproduction of recorded media).	Sum of four (4) quarters in the current year

5. Petroleum, chemical, polymer, and rubber product manufacturing				
i. Manufacture of coke and refined petroleum	Output indicators on the value of production of coke and refined petroleum establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI coke and refined petroleum).	Sum of four (4) quarters in the reference year
ii. Manufacture of chemical and chemical products	Output indicators on the value of production of chemical and chemical products establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI chemical and chemical products).	Sum of four (4) quarters in the reference year
iii. Manufacture of basic pharmaceutical products and pharmaceutical preparations	Output indicators on the value of production of basic pharmaceutical products and pharmaceutical preparations establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI basic pharmaceutical products and pharmaceutical preparations).	Sum of four (4) quarters in the reference year
iv. Manufacture of rubber and plastic products	Output indicators on the value of production of rubber and plastic products establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI rubber and plastic products).	Sum of four (4) quarters in the reference year

6. Non-metallic mineral product manufacturing				
i. Manufacture of other non-metallic products	Output indicators on the value of Production of other non-metallic products establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI other non-metallic products).	Sum of four (4) quarters in the reference year
7. Metal product manufacturing				
i. Manufacture of basic metals	Output indicators on the value of production of basic metals establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI basic metals).	Sum of four (4) quarters in the reference year
ii. Manufacture of fabricated metal products, except machinery and equipment	Output indicators on the value of production of fabricated metal products, except machinery and equipment establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI fabricated metal products, except machinery and equipment).	Sum of four (4) quarters in the reference year
8. Transport equipment, machinery, and equipment manufacturing				
i. Manufacture of computer, electronic and optical products	Output indicators on the value of production of computer, electronic and optical products establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI computer, electronic and optical products).	Sum of four (4) quarters in the reference year

ii. Manufacture of electrical equipment	Output indicators on the value of production of electrical equipment establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI) are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI electrical equipment).	Sum of four (4) quarters in the reference year
iii. Manufacture of machinery and equipment except electrical	Output indicators on the value of production of machinery and equipment except electrical establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI machinery and equipment except electrical).	Sum of four (4) quarters in the reference year
iv. Manufacture of transport equipment	Output indicators on the value of production of transport equipment establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI transport equipment).	Sum of four (4) quarters in the reference year
9. Furniture and other manufacturing				
i. Manufacture of furniture	Output indicators on the value of production of furniture establishments from the MISSI, complemented with the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., PPI furniture).	Sum of four (4) quarters in the reference year
ii. Other manufacturing	Output indicators on the value of production of other manufacturing establishments from the MISSI, complemented with	Sum of four (4) quarters in the	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied	Sum of four (4) quarters in the reference year

	the Revenues and Sales of establishments from the QSPBI are used to extrapolate the gross output.	reference year	to the trend of relevant price indicators (e.g., PPI other manufacturing).	
d. Electricity, steam, water and waste management				
1. Electricity	Output indicators on the electricity establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Electricity, Gas and other fuels for Electricity).	Sum of four (4) quarters in the reference year
2. Steam	Output indicators on the from administrative data for steam sub-industry are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Average Steam Selling price for Steam).	Sum of four (4) quarters in the reference year
3. Water supply	Output indicators on the water supply establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Water for Water Supply).	Sum of four (4) quarters in the reference year
4. Waste Management	Output indicators on the waste management establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Personal Effects N.E.C. for Waste Management).	Sum of four (4) quarters in the reference year
e. Construction	Output indicators on the general government, residential and non-residential building permit are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant	Sum of four (4) quarters in the reference year

			price indicators (e.g., CPI Maintenance and Repair, WPI Construction Materials, Average Earnings).	
f. Wholesale and retail trade; repair of motor vehicles and motorcycles				
1. Wholesale trade, except of motor vehicles and motorcycles	Output indicators on the wholesale trade, except of motor vehicles and motorcycles establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Wholesale Price Index).	Sum of four (4) quarters in the reference year
2. Retail trade, except of motor vehicles and motorcycles	Output indicators on retail trade, except of motor vehicles and motorcycles establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Retail Price Index and CPI All Items).	Sum of four (4) quarters in the reference year
3. Sale and repair of motor vehicles and motorcycles	Output indicators on sale and repair of motor vehicles and motorcycles establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Wholesale Price Index (WPI) Machinery and Transport Equipment, Retail Price Index (RPI)- (Machinery and Transport Equipment; Mineral Fuels, Lubricants and Related Materials).	Sum of four (4) quarters in the reference year

g. Transportation and storage				
1. Land transport	Output indicators on land transport establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Passenger transport by rail and by road).	Sum of four (4) quarters in the reference year
2. Water transport	Output indicators on water transport establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Passenger transport by sea and inland waterway).	Sum of four (4) quarters in the reference year
3. Air transport	Output indicators on air transport establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Passenger transport by air).	Sum of four (4) quarters in the reference year
4. Warehousing and storage, and support activities for transportation	Output indicators on warehousing and storage, and support activities for transportation establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Composite deflator).	Sum of four (4) quarters in the reference year
5. Postal and courier activities	Output indicators on the postal and courier establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Postal Services).	Sum of four (4) quarters in the reference year

h. Accommodation and food service activities				
1. Accommodation	Output indicators on the revenue of accommodation establishments in the QSPBI and/or financial statements available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Actual rental paid by tenants).	Sum of four (4) quarters in the reference year
2. Food and beverage service activities	Output indicators on the revenue of food and beverage service establishments in the QSPBI and/or financial statements available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Food and Non-alcoholic Beverages, CPI Alcoholic Beverages, and CPI Catering Services).	Sum of four (4) quarters in the reference year
i. Information and communication				
1. Information and publishing	Output indicators on the Information and publishing establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., TCI of CPI communication).	Sum of four (4) quarters in the reference year
2. Communication	Output indicators on the Communication establishments for a sub-industry in the QSPBI and/or financial statements and administrative data available are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI newspaper, books and stationery, recording media, cultural services).	Sum of four (4) quarters in the reference year
j. Financial and insurance activities				
1. Banking institutions	Output indicators on the banking institution establishments for a sub-industry in the QSPBI, financial statements, and	Sum of four (4) quarters in the	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied	Sum of four (4) quarters in the reference year

	administrative data are used to extrapolate the gross output.	reference year	to the trend of relevant price indicators (e.g., CPI All Items).	
2. Non-banks	Output indicators on the non-banks establishments for a sub-industry in the QSPBI, financial statements, and administrative data are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI all items).	Sum of four (4) quarters in the reference year
3. Insurance and pension funding except compulsory social security	Output indicators on the insurance and pension funding except compulsory social security establishments for a sub-industry in the QSPBI, financial statements, and administrative data are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI All Items).	Sum of four (4) quarters in the reference year
4. Activities auxiliary to financial services activities	Output indicators on the activities auxiliary to financial services establishments for a sub-industry in the QSPBI, financial statements, and administrative data are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI All Items).	Sum of four (4) quarters in the reference year
k. Real estate and ownership of dwellings				
1. Real estate	Output indicators on the revenue data from establishment surveys and Financial Statements are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI All Items).	Sum of four (4) quarters in the reference year
2. Ownership of dwellings	Estimates at constant prices are inflated using the implicit price index of the same period of the previous year, multiplied to the inflation rate of relevant price indicators (e.g., CPI of Actual Rentals for Housing).	Sum of four (4) quarters in the reference year	Output indicators on the trend of updated housing stocks data) are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year

I. Professional and business services	Output indicators on the revenue data from establishment surveys are utilized for both sub-industries. For BPO, IBPAP data is used are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Average earnings from establishment surveys).	Sum of four (4) quarters in the reference year
m. Public administration and defense; compulsory social activities	Output indicators on the cash disbursement of the national government for Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., average earning index).	Sum of four (4) quarters in the reference year
n. Education				
1. Public education	Output indicators on the Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) of DepEd, and SUCs) are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., government average earnings index).	Sum of four (4) quarters in the reference year
2. Private education	Output indicators on the private education institution for a sub-industry in the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Education).	Sum of four (4) quarters in the reference year
o. Human health and social work activities				
1. Public human health	Output indicators on the Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) of DOH and DSWD, respectively are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., government average earnings index).	Sum of four (4) quarters in the reference year

2. Private human health	Output indicators on the revenue of establishments providing private health services sourced from QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Health).	Sum of four (4) quarters in the reference year
3. Social work activities	Output indicators on the Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) of DOH and DSWD, respectively are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., average of the trend of government average earnings index and of CPI).	Sum of four (4) quarters in the reference year
p. Other services				
1. Arts, entertainment, and recreation	Output indicators on the Arts, Entertainment and Recreation establishments in the QSPBI and Financial Statements are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Recreation and Culture).	Sum of four (4) quarters in the reference year
2. Other service activities	Output indicators on the revenue data of Other Service Activities establishments in the QSPBI are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Personal Care).	Sum of four (4) quarters in the reference year

**Philippine System of National Accounts Sources and Methods
(Expenditure Approach)**

Component	Current Price Series		Constant Price Series	
	Quarterly Method	Annual Method	Quarterly Method	Annual Method
a. Household final consumption expenditure	Indicators on the production statistics from industries, FTS, Retail Trade are used to extrapolate each sub-item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI of the 12 items).	Sum of four (4) quarters in the reference year
b. Government final consumption expenditure	Indicators on the cash disbursements for Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) of the national government) are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., composite index of the CPI and average earning index).	Sum of four (4) quarters in the reference year
c. Construction	Output indicators on the general government, residential and non-residential building permit are used to extrapolate the gross output.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI Maintenance and Repair, WPI Construction Materials, Average Earnings).	Sum of four (4) quarters in the reference year
d. Durable equipment	Indicators on the cost, insurance and freight from FTS (imports) and gross output of manufacturing industries producing machinery and equipment from QSPBI and MISSI are used to extrapolate the imported and local components of the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using relevant price indicators (e.g., implicit price indices of machineries and equipment from the Imports of Goods as indicator for the movement of the prices of imported durable equipment and implicit price indices of the durable equipment related to manufacturing	Sum of four (4) quarters in the reference year

			sector, which is based on PPI	
e. Breeding stocks and orchard development				
1. Breeding Stocks	Indicators on the inventory of livestock and poultry are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., farm price and trade margin of livestock and poultry animals for breeding).	Sum of four (4) quarters in the reference year
2. Orchard Development	Indicators on the area planted and fertilizer and labor cost for orchard development are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of the relevant price indicators (e.g., composite index of wage rate of farmers and price of inorganic fertilizers).	Sum of four (4) quarters in the reference year
f. Intellectual property products				
1. Research and Development	Indicators on the gross output of non-BPO under Professional and Business Services for Private Sector and the Government Final Consumption Expenditure on Research and Development under MOOE for Public Sector, QSPBI are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of Composite Price Index on Private Business Services and Government Consumption.	Sum of four (4) quarters in the reference year
2. Mineral exploration and evaluation	Indicators on the gross output of total MAQ excluding Stone quarrying, and other mining and quarrying; gross output of MAQ excluding quarrying establishments; Compensation per Employee are used to	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., price indices for Mining and Quarrying Industry).	Sum of four (4) quarters in the reference year

	extrapolate the expenditure item.			
3. Computer Software and Databases	Indicators on the Imports of Goods on Electronic Data Processing and the Information and Communication on Computer Programming, Consultancy and Related Activities are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., BLS Export Price Indices for Computers and Computer Peripherals).	Sum of four (4) quarters in the reference year
4. Entertainment, literary or artistic originals	Indicators on the Information and Communication (IAC) on Publishing Activities, Motion Picture and Programming and Broadcasting are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using IPIN of Recreational Services under Other Services.	Sum of four (4) quarters in the reference year
5. Other intangible assets	Indicators on the composite trends from weighted trends of Intangible Assets Outlay from BESF and Charges for the Use of Intellectual Property from Imports of Services are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI for Non-food).	Sum of four (4) quarters in the reference year
g. Changes in inventories				
Agriculture	Inventory levels for Agriculture, in volume terms, are directly measured from various agricultural surveys and administrative data. CIN of rice, corn, sugar, livestock and poultry, and other agricultural items is calculated by subtracting ending inventory from beginning inventory, multiplied to the current prices.	Sum of four (4) quarters in the reference year	CIN for Agriculture at constant prices is calculated by multiplying the changes in inventory (in volume terms) to the average of the appropriate ending and beginning 2018 prices.	Sum of four (4) quarters in the reference year

Crude and Petroleum Products	<p>Inventory levels for Crude and Petroleum Products are measured, in volume terms, from inventory data of DOE.</p> <p>CIN for crude and petroleum products is quantified by subtracting beginning inventory from ending inventory and multiplying the difference to the average of ending and beginning prices.</p>	Sum of four (4) quarters in the reference year	CIN for Crude and Petroleum Products at constant prices is calculated by multiplying the changes in inventory (in volume terms) to the average appropriate ending and beginning 2018 prices.	Sum of four (4) quarters in the reference year
Establishment	<p>Inventory levels for Establishments are measured, in book values, from various establishment surveys.</p> <p>CIN for Establishment at current prices is derived from the constant prices and IPIN of the current period.</p>	Sum of four (4) quarters in the reference year	CIN for Establishment at constant prices is calculated by subtracting the beginning inventory from ending inventory. The beginning and ending inventories are both deflated using the Wholesale Price Index.	Sum of four (4) quarters in the reference year
Government	<p>Inventory levels for Government are measured, in book values, from financial reports of COA and DBM.</p> <p>CIN for Government at current prices is derived from the constant prices and IPIN of the current period.</p>	Sum of four (4) quarters in the reference year	CIN for Government at constant prices is calculated by subtracting the beginning inventory from ending inventory. The beginning and ending inventories are both deflated using the Wholesale Price Index.	Sum of four (4) quarters in the reference year
h. Valuables	Indicators on the cost, insurance and freight from FTS (imports) and gross output of manufacturing industries producing valuables from QSPBI and MISSI are used to extrapolate the imported and local component of the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using relevant price indicators which include the implicit price indices from Imports of Goods, implicit price indices of the relevant valuables from manufacturing industry based on PPI and price indices of precious stone and metals from Pink Sheet of World Bank.	Sum of four (4) quarters in the reference year

i. Exports of goods	Quarterly estimates are extrapolated using the trends of each commodity from FTS and other data sources (Balance of Payments, BFAR). It is done for 75 major commodities.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Import Price Indexes from US Bureau of Labor Statistics, Commodity Prices from The World Bank, PPI and Farmgate Prices from PSA, and commodity price indices from other country websites).	Sum of four (4) quarters in the reference year
j. Exports of services	Indicators on the data from BOP and various administrative data are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., CPI for All Items, CPI Non-food for NCR, CPI for Transport, CPI for Communication, CPI Non-food).	Sum of four (4) quarters in the reference year
k. Imports of goods	Quarterly estimates are extrapolated using the trends of each commodity from FTS and other data sources (Balance of Payments, PAL, Cebu Pacific, BFAR). It is done for 57 major commodities.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., Export Price Indexes from US Bureau of Labor Statistics, Commodity Prices from The World Bank and other country websites).	Sum of four (4) quarters in the reference year
l. Imports of services	Indicators on the data from the BOP and other various administrative data are used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using implicit price index updated by the trend of price indicators (e.g., weighted CPI of Top Trading Partners of the Philippines. Top trading partners were derived from the Top Deployment	Sum of four (4) quarters in the reference year

			Countries from POEA and Outbound Filipinos by Disembarkation from DOT).	
m. Net primary income from the rest of the world				
Compensation Inflow	Indicator on the stock of sea-based and land-based OFW is used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the trend of relevant price indicators (e.g., composite deflator based on Household Final Consumption Expenditure, Government Final Consumption Expenditure and Gross Fixed Capital Formation).	Sum of four (4) quarters in the reference year
Property Income	Indicator on the Investment Income from the Balance of Payments is used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the inflation rate of relevant price indicators (e.g., composite deflator based on Household Final Consumption Expenditure, Government Final Consumption Expenditure and Gross Fixed Capital Formation).	Sum of four (4) quarters in the reference year
Compensation Outflow	Indicator on the No. of Alien Employment permits issued is used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the inflation rate of relevant price indicators (e.g., composite deflator based on Household Final Consumption Expenditure, Government Final Consumption Expenditure and Gross Fixed Capital Formation).	Sum of four (4) quarters in the reference year

Property Expense	Indicator on the Investment Income from the Balance of Payments is used to extrapolate the expenditure item.	Sum of four (4) quarters in the reference year	Estimates at current prices are deflated using the implicit price index of the same period of the previous year, multiplied to the inflation rate of relevant price indicators (e.g., composite deflator based on Household Final Consumption Expenditure, Government Final Consumption Expenditure and Gross Fixed Capital Formation).	Sum of four (4) quarters in the reference year
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