

TECHNICAL NOTES

The Quarterly Economic Indices (QEI) publication is a compilation of quarterly indices on production, gross revenue, employment, compensation, production per worker, compensation per employee.

A. DEFINITION OF TERMS

1. **Compensation** - refers to remuneration in cash and in kind paid to employees at regular intervals for time work or work done. Compensation is reported gross before any deductions are made by the employer in respect of taxes, contributions of employees to social security and pension schemes, life insurance premiums, union dues and other obligations of employees. Compensation consists of total salaries and wages, commissions and other benefits, and employer's contribution to social security and pension schemes and similar benefits.
2. **Economic Activity** - is the activity of the establishment as classified under the Philippine Standard Industrial Classification (PSIC). The main activity of the establishment is the establishment's principal source of income.
3. **Employment** - refers to the number of persons who work for a public or private employer and receive remuneration in wages, salary, commissions, tips, piece-rated or pay-in-kind. Employees consists of paid officials and workers (time-rated, piece-rated, salaried workers), workers paid solely on commission basis, and apprentices and learners.
4. **Establishment** - is an economic unit which engages, under a single ownership or control, i.e. under a single legal entity, in one, or predominantly one kind of economic activity at a single fixed location.
5. **Gross Revenue** - refers to the value of receipts from the shipment of goods produced, resale of goods and services rendered.
6. **Index Numbers** - are measures, generally expressed as percentage calculated for the purpose of showing average changes in a variable or a group of related variables with respect to some characteristics.
7. **Paid Employees** - are all persons working in the establishment receiving pay as well as those working away from the establishment when paid by and under the control of the establishment. Included are persons whether working full time or part-time as well as employees on sick leave, paid vacation or on holiday. These, however, exclude consultants, home workers and workers receiving commissions only.
8. **Production** - refers to the quantity of goods produced by an industry during the period.

B. COVERAGE OF INDICES

The quarterly indices are being compiled for the different industries, which are as follows:

1. **Production indices**
 - a. Agriculture, Fishery and Forestry
 - b. Mining and Quarrying
 - c. Electricity, Gas and Water Supply

2. **Production per worker indices**
 - a. Mining and Quarrying
 - b. Electricity, Gas and Water Supply

3. **Gross revenue indices**
 - a. Mining and Quarrying
 - b. Manufacturing
 - c. Electricity, Gas and Water Supply
 - d. Trade
 - e. Transportation, Storage and Communication
 - f. Financial and Insurance Activities
 - g. Real Estate
 - h. Other Services

4. **Employment indices**
 - a. Mining and Quarrying
 - b. Manufacturing
 - c. Construction
 - d. Electricity, Gas and Water Supply
 - e. Trade
 - f. Transportation, Storage and Communication
 - g. Financial and Insurance Activities
 - h. Real Estate
 - i. Other Services

5. **Compensation indices**
 - a. Mining and Quarrying
 - b. Manufacturing
 - c. Construction
 - d. Electricity, Gas and Water Supply
 - e. Trade
 - f. Transportation, Storage and Communication
 - g. Financial and Insurance Activities
 - h. Real Estate
 - i. Other Services

6. **Compensation per employee indices**
 - a. Mining and Quarrying
 - b. Manufacturing
 - c. Construction

- d. Electricity, Gas and Water
- e. Trade
- f. Transportation, Storage and Communication
- g. Financial and Insurance Activities
- h. Real Estate
- i. Other Services

Table 1 summarizes the types of indices and the different industries covered.

C. LIMITATIONS OF THE QEI:

The industry indices are computed based on data from the QSPBI and supplemented by the available data from the National Accounts of the Philippines. While quarterly data are available on industrial basis, not all data items are generated.

D. REVISION POLICY

As a matter of policy, the QEI results in the preceding quarter are revised. This is in line with the standard international practice to update the indices as additional and more updated data are available.

Table 1 Summary of the types of indices and the different industries covered

INDICES	SECTORS COVERED									
	Agriculture, Fishery and Forestry	Mining and Quarrying	Manufacturing	Construction	Electricity, Gas and Water	Trade	Transportation, Storage and Communication	Financial and Insurance Activities	Real Estate	Other Services
1. Production	X	X			X					
2. Production Per Worker		X			X					
3. Gross Revenue		X	X		X	X	X	X	X	X
4. Employment		X	X	X	X	X	X	X	X	X
5. Compensation		X	X	X	X	X	X	X	X	X
6. Compensation Per Employee		X	X	X	X	X	X	X	X	X

E. SCOPE AND COVERAGE

The industry classification for the compilation of the QEI follows the classification of the National Accounts and represents the industry groupings based on the Philippine Standard Industrial Classification (PSIC). The following sections present the scope and coverage of the industries, the data sources for the estimation of the quarterly indices as well as the type of indices generated for each industry.

1. AGRICULTURE, FISHERY, AND FORESTRY

Agriculture includes the production of all agricultural crops such as palay, corn, coconut, sugarcane, banana, and the raising of livestock and poultry including the production of milk and eggs. Services provided to agriculture on a fee or contract basis such as veterinary services, the operation of irrigation systems, and pest control are also included in this sub-industry.

Fishery covers fishing, fish culture, and the gathering of other marine products such as reptile skins, seaweeds, shells, and sponges.

Forestry includes logging and the gathering of minor forest products such as firewood, bamboos, etc. and the burning of charcoal in the forest.

For this industry, production indices are estimated for total agriculture, fishery, and forestry; total agricultural crops; palay; corn; coconut; banana; sugarcane; other crops; livestock and poultry; fishery and forestry.

2. MINING AND QUARRYING

Mining and quarrying covers the production of all metallic and non-metallic minerals by extraction from nature and its related processes. Underground and surface mines, quarries and wells and all supplemental activities for beneficiating ores and other crude materials for marketing ores are included.

The indices of production, production per worker, revenue, employment, compensation and compensation per employee are compiled for total mining and quarrying, total metallic with indices for the sub-industries of gold, copper, nickel, chromium, and other metallic and total non-metallic with indices for the sub-industries of coal, stone, clay and sandpits, and other non-metallic.

3. MANUFACTURING

Manufacturing is the mechanical or chemical transformation of organic or inorganic substances into new products, whether the work is performed by power driven machines or by hand, whether it is done in a factory or in the worker's home and whether the products are sold at wholesale or retail. Activities carried out in connection with the main manufacturing activity such as the production of goods in their workshops, the operation of cafeterias or bakeries, the printing of books, pamphlets and postcards and minor own-account construction are also accounted for in the industry.

Quarterly indices on gross revenue, employment, compensation, and compensation per employee are estimated for total manufacturing industry and for its major sub-industries namely: food, beverage, tobacco, textile, footwear and wearing apparel, wood and cork products, furniture and fixtures, paper and paper products, publishing and printing, leather and leather products, rubber products, chemical and chemical products, products of petroleum and coal, non-metallic mineral products, basic metal industries (such as ferrous metals, metals and non-ferrous metals), machines except electrical, electrical machineries (such as microcircuits, household appliances, batteries, lamps, wires), transport equipment, and miscellaneous manufactures.

4. CONSTRUCTION

Construction, as an industry, covers the activities of putting up of buildings and structures and other land improvements. It may also undertake other related projects as its secondary activities such as the provision of technical and engineering services as well as the manufacture and trading of construction materials.

The quarterly indices for employment, compensation, and compensation per employee are estimated for the total construction industry.

5. ELECTRICITY, GAS, AND WATER SUPPLY

Electricity, gas and water supply covers the generation, transmission and distribution of electricity to households, industrial and commercial users as well as the collection, purification and distribution of water.

For this industry, quarterly indices on production, production per worker, revenue, employment, compensation, and compensation per employee are estimated separately for each sub-industry.

6. TRANSPORTATION, STORAGE, AND COMMUNICATION

Transport services consist of the transport of passenger and freight by land, water and air including transport related operation like the operation of toll roads, terminal facilities, piers, airports and the like. It also covers services incidental to transport as well as the operation of storage and warehouse facilities for all kind of goods. Communication includes mail express service, telephone, radio and related services.

The indices for gross revenue, employment, compensation, and compensation per employee are compiled for total transport, storage, and communication industry. The same computations are also done for the major sub-industries of transportation, which include: land, water and air.

7. TRADE

Trading pertains to the services provided by production units engaged in buying and reselling of goods, without transformation, either in bulk as in wholesaling, or in small quantities as in retailing.

The quarterly indices for gross revenue, employment, compensation, and compensation per employee are estimated for the trade industry.

8. FINANCIAL AND INSURANCE ACTIVITIES

Finance and Insurance Activities covers the activities of financial institutions such as banks, nonbanks and insurance companies. Banks include commercial banks, savings and mortgage banks, private development banks, stock savings and loan associations and specialized government banks. Nonbanks include financing companies, fund managers, investment houses, investment companies, security dealers, security brokers, venture capital corporations, mutual building and loan associations, credit cooperatives, pawnshops and government nonbank financial intermediaries. Insurance includes incorporated, mutual and other entities mainly engaged in providing life, accident, sickness, fire, casualty or other forms of insurance.

The quarterly indices on gross revenue, employment, compensation, and compensation per employee are compiled for the total industry and that of its sub-industries, which are banks, non-banks and insurance.

9. REAL ESTATE

Real estate covers the renting, management and operation of residential and non-residential buildings, the subdivision and development of land into building lots, the operation of residential and industrial estates, cemetery development and sale including the activities of real estate agents, brokers and managers engaged in renting, buying, selling, managing and appraisal of real estate on a fee or contract basis.

The estimates of quarterly indices on gross revenue, employment, compensation, and compensation per employee are done for the total real estate industry.

10. OTHER SERVICES

Other services industry includes private education, private health and social work activities, business activities, recreational activities, personal services, and hotels and restaurants. This industry excludes public education and public health and social work activities.

For other services, quarterly indices on gross revenue, employment, compensation, and compensation per employee are computed for the total industry and its sub-industries.

F. DATA SOURCES

The Quarterly Survey of the Philippine Business and Industry (QSPBI) provides the basic data items for the estimation of the indices on revenue, compensation and employment. The QSPBI of the Philippine Statistics Authority serves as the main source of data for most of the industries including: mining and quarrying, manufacturing, construction, electricity, gas and water supply, transportation, storage and communication, trade, finance, real estate and other services. In the case of the manufacturing, results of the QSPBI are supplemented by the Monthly Integrated Survey of Selected Industries (MISSI).

For agriculture, forestry and fishing, mining and quarrying, and electricity, gas and water supply where indices on volume of production are computed, production data are derived from other sectoral surveys of the PSA such as the Palay and Corn Production Surveys, Livestock and Poultry Surveys, and Survey of Commercial, Municipal and Inland Fisheries including the Survey on Aquaculture. Data from administrative records compiled by agencies like the Sugar Regulatory Administration (SRA), Forest Management Bureau (FMB), Mines and Geosciences Bureau (MGB), Department of Energy (DOE), National Power Corporation (NPC), National Grid Corporation of the Philippines (NGCP), Energy Development Corporation (EDC), National Electrification Administration (NEA), Manila Electric Company (MERALCO), Metropolitan Waterworks and Sewerage System-Regulatory Office (MWSS-RO), Manila Water Company, Inc. (MWCi), and Maynilad Water Services Inc. (MWSI) are also utilized.

The availability of the 2016 Annual Survey of the Philippine Business and Industry (ASPBI) of the PSA provides the most recent annual benchmark data items in firming -up the quarterly indices on revenue, employment and compensation by industry. These indices are deflated using the Consumer Price Index (CPI) to calculate for the constant price estimates.

G. ESTIMATION METHODOLOGY

1. Index on Gross Revenue, Compensation and Employment

The initial benchmark annual estimates for the aggregate sectoral gross revenue, compensation and employment were computed for the year 2016, using the 2016 Annual Survey of Philippine Business and Industries. These were supplemented by available data from the National Accounts for sectoral gross value added.

For estimating the quarterly indices on gross revenue, employment, compensation, and compensation per employee, the 2016 Quarterly Survey of Philippine Business and Industry (QSPBI) were used to come up with the quarterly breakdown of the annual levels. The corresponding indices for each sector in a given quarter were computed by calculating the ratio of the quarterly levels to the average quarterly values at base year 2016. For succeeding quarterly estimates, values are derived as the product of the relatives of the matched set of data from responding establishments for the sector, which are obtained from the QSPBI and the corresponding values for the previous quarter or the same quarter in the previous year, for services and industry sectors, respectively. The indices are derived as the ratio of the estimated values to the base year levels, as follows:

$$Index_k = \frac{\text{Levels}_k \text{ at current prices}}{\text{Levels}_k \text{ at 2016}} * 100$$

where: k is revenue, employment, or compensation

Total values for the aggregate sector are derived as the summation of the total value estimates of subsectors covered by the sector. The computed index for the sector is then derived as the ratio to the corresponding base year level aggregates.

Total indices for revenue, compensation, and employment are derived as the summation of the weighted indices:

$$Total Index = \sum_i a_i w_i$$

*where: a_i is the index of the ith industry
w_i is the weight of the ith industry*

2. Compensation Per Employee Index

Index on Compensation Per Employee at current prices for the sector is derived as the ratio of the Index on Compensation for the given year divided by the Index on Employment for the same period. To arrive at the index at constant

prices, the corresponding index at current prices is deflated by the CPI based 2012.

At current prices

$$\text{Compensation per employee index} = \frac{\text{Index on compensation}}{\text{Index on employment}} * 100$$

At constant prices

$$\text{Compensation per employee index} = \frac{\text{Index on compensation per employee at current prices}}{\text{Consumer Price Index at 2012 Prices}}$$

3. Index on Volume of Production

Quarterly Indices on Volume of Productions are estimated for agriculture, mining and quarrying and electricity, gas and water supply, using the Laspeyre's method. This method represents the ratio of the value of production for the current year priced at base year prices to the value of production during the base year, expressed in percentage. The year 2016 is used as the base year, which is also the basis of the constant weight adopted for the index estimation. The formula used is as follows:

$$\text{Index on Volume of Production} = \frac{\text{Value of production}_t * \text{Prices}_{2016}}{\text{Value of production}_{2016}} * 100$$

The computed index for the specific aggregate sector is obtained by summing the value of production of all the subsectors at current prices divided by the total value of production of the same subsectors at base year 2016. The aggregate sector covers all the subsectors within the sector. As such the total value of the agriculture sector includes the value of agricultural crops, livestock, poultry and fishery.

4. Index on Volume of Production Per Worker

The index on volume of production per worker is estimated by dividing the index on volume of production by the index on employment for the sector, as follows:

$$\text{Index on Volume of Production per worker} = \frac{\text{Index on Volume of Production}}{\text{Index on Employment}} * 100$$