# INDONESIA SHORT-TERM ECONOMIC INDICATOR

A Comprehensive Country Report

CONTAINS

1. Economic Tendency Surveys
2. Service industry statistics
3. Large Business Statistics

Ade Marsinta Arsani
BPS-Statistics Indonesia

# Contents

**Glossary**

| | |
|---|---|
| BTI | Business Tendency Index |
| BTS | Business Tendency Survey |
| CTI | Consumers Tendency Index |
| CTS | Consumers Tendency Survey |
| EC | Economic Census |
| KBLI | Klasifikasi Baku Lapangan Usaha Indonesia/ Indonesia Standard Classification Of Industries , is adopted from International Standard Industrial Classification of All Economic Activities (ISIC) |
| Sakernas | Survei Angkatan Kerja Nasional/ National Labor Force Survey |
| Susenas | Survei Sosial Ekonomi Nasional/ National Socio Economic Survey |

**Background**

In general, GDP is used to determine the performance of the economy in a region. However, the GDP release period has a rather long lag after the time period ends. Therefore, indicators are needed to find out how the economy is performing. These indicators are often called short-term economic indicators.

Short-term economic indicators provide a snapshot of current economic activity over a recent period. Most of these are in the form of indices that estimate changes to the output level of an industry based on surveys of businesses in that industry. The level of the index represents the output estimated to have occurred in a given time period based on survey responses. These short term indicators all contribute to the output approach to measuring GDP.

In Indonesia, there are several short-term economic indicators that are used as a tool for calculating GDP. Not only as a tool, some short-term economic indicators are also used as a comparison of GDP data. Due to the different approaches, the value of short-term economic indicators is not always in line with their related component in GDP. For example, the movement of the consumer tendency index will not always be in line with the growth of household consumption expenditure. Consumer tendency index derived from the consumer tendency survey is based on perception, while household consumption based on the value of household consumption expenditure. Although not always in line, but short-term economic indicators are absolutely necessary as an early snapshot of the economy.

This report will be described the three major short-term economic indicators used in Indonesia: Economics Tendency Surveys, Service industry statistics, dan business statistics (especially large bussiness statistics).

# 1. Economic Tendency Survey

## 1.1 Business Tendency Index

### 1.1.1 Introduction

Early information on the development of economic conditions is a very important requirement for all parties, both for the government and the business world. The BPS-Statistics Indonesia has developed an economic early indicator that includes the calculation of the Business Tendency Index (BTI) and the Consumer Tendency Index (CTI). Both indicators produce early information on changes in future economic conditions. Business Tendency Index is calculated from the results of the Business Tendency Survey (BTS) conducted since 1995. Coverage of the sample companies have changed the samples until 2015.

In 2007-2012, the overall sample size of the Business Tendency Survey per quarter was approximately 2,500 companies consisting of 9 sectors / industries. Data collection is in cooperation with Central Bank/Bank Indonesia (BI). The distribution of company samples is allocated proportionally by sector / industries. And the samples are scattered in several big cities in all provinces in Indonesian territory, especially those having representative offices of BI. In 2013-2014, the overall sample of the Business Tendency Survey per quarter is still approximately 2,500 companies covering 9 sectors / industries. In contrast to previous periods, field data collection of most respondents enumerated by BPS was submitted to the provincial BPS (DKI Jakarta, West Java, and Banten). Cooperation in the form of data sharing with Bank Indonesia from field data collection conducted by BI Representative Office in several cities.

### 1.1.2 Survey's Purposes

BTS is conducted to obtain information related to business condition including business income, production capacity utilization, average number of working hours, domestic demand, overseas demand, selling price, demand of input goods, realization and demand / production volume, total worker and its prediction, business situation and its prediction, total fixed asset and its prediction, investment realization and its prediction, also realization of wage and its prediction

Main Variables:

- Revenue
- Usage of Used Production Capacity
- Average working hours
- Domestic demand
- Foreign Demand

### 1.1.3 Methodology

The Business Tendency Survey 2017-2019 is implemented in 34 provinces, covering provincial capitals city, some cities of SBH (86 municipalities) and selected potential municipalities. Overall the survey covered 302 municipalities consisting of 34 provincial capitals city and 268 municipalities of selected commodity potential. The Business Tendency Survey was conducted quarterly in March, June, September, and December.

The sample frame is formed for the company / business sampling unit. The formation of sample frames comes from a variety of sources, from:

- 2016 Census Economics
- 2013 Agriculture Census

From the list of companies / businesses further divided into sample packages. Sample size of company / business on each sample is made equal / almost same. Allocation of the company / venture into the sample package is being systematically and independently per category.

For the fiscal year 2017-2019 it takes 15 packets of samples, namely A, B, C, D, E, F, G, H, I, J, K, L, M, N and 0. The selection of the fifteen sample packages is done random sample packets that have been formed. Each quarter required 4 (four) sample packages, of which a quarter is a new package and other three quarters is the previous quarter sample package.

**Table 1. Samples Rotation System**

| Samples Pack | 2017 | | | | 2018 | | | | 2019 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| A | A | | | | | | | | | | | |
| B | B | B | | | | | | | | | | |
| C | C | C | C | | | | | | | | | |
| D | D | D | D | D | | | | | | | | |
| E | | E | E | E | E | | | | | | | |
| F | | | F | F | F | F | | | | | | |
| G | | | | G | G | G | G | | | | | |
| H | | | | | H | H | H | H | | | | |
| I | | | | | | I | I | I | I | | | |
| J | | | | | | | J | J | J | J | | |
| K | | | | | | | | K | K | K | K | |
| L | | | | | | | | | L | L | L | L |
| M | | | | | | | | | | M | M | M |
| N | | | | | | | | | | | N | N |
| O | | | | | | | | | | | | O |

The total sample is 2500 companies. The sample allocation is done by considering the contribution of GRDP to the total of 34 provinces GRDP.

**Table 2.Samples Allocation**

| Province | Samples | Province | Samples |
|---|---|---|---|
| Aceh | 34 | West Nusa Tenggara | 19 |
| North Sumatera | 133 | East Nusa Tenggara | 13 |
| West Sumatera | 42 | West Kalimantan | 28 |
| Riau | 172 | Central Kalimantan | 21 |
| Jambi | 28 | South Kalimantan | 28 |
| South Sumatera | 76 | East Kalimantan | 129 |
| Bengkulu | 9 | North Kalimantan | 11 |
| lampung | 54 | North Sulawesi | 18 |
| Bangka Belitung Island | 13 | Central Sulawesi | 19 |
| Riau Island | 33 | South Sulawesi | 61 |
| DKI Jakarta | 414 | South East Sulawesi | 14 |
| West Java | 353 | Gorontalo | 4 |
| Central Java | 206 | West Sulawesi | 5 |
| DI Yogyakarta | 21 | Maluku | 4 |
| East Java | 375 | North Maluku | 3 |
| Banten | 81 | West Papua | 17 |
| Bali | 31 | Papua | 31 |
| | | | |
| | | Total | 2500 |

### 1.1.4 Business Tendency Index

The Business Tendency Index (BTI) is calculated based on data from the Business Tendency Survey (BTS). The goal of BTI is to produce an early indicator that can explain the condition of the economy from the producer side. In addition to predicted future economic conditions, the resulting indicators also illustrate the optimism of entrepreneurs. Indicators measured are the behavior of business actors in facing economic conditions. The results are current indicators (current BTI) and upcoming indicators (Upcoming BTI).

BTI is a composite index which is the average of several indexes of its component variables. Indexes from all categories of business fields are used to establish national BTIs, using the share of GDP as a proportional weight. All the variables asked in the business tendency survey have 3 types of answers, namely: increased,

stagnant, and decreased. The procedures for calculating business tendency indexes, both current and future indexes are:

a. Scoring
   Increased = 1
   Stagnant = 0
   Decreased = -1

   The calculation of the index of variables will only take into account the increased and decreased value
b. Variables index calculation
   The index of each variable is calculated by the formula:

$$Iv_j = \left(\frac{\sum x_a - \sum x_b}{n} x\ 100\right) + 100$$

c. Calculation of current indicator index and upcoming indicator index
   Current indicator index (CII) and upcoming indicator index (UII) are arranged independently. Each index is a weighted average of its several indicators.

$$\textbf{CII or UII} = \frac{\sum Iv_j}{j}$$

   The current Index value and the upcoming Index are in the range of values 0 to 200
   a. 0 < x < 100 means business conditions in the quarter were lower than the previous quarter
   b. 100 means business conditions in the quarter were relatively similar to the previous quarter
   c. 100 < x < 200 means business conditions in the quarter were better than the previous quarter

### 1.1.5 Challenges

a. The replacement of sample frames with the 2016 Economic Census directory resulted in some problems. The 2016 Economic Census uses business concepts with a combined enterprise and establishment approach, while the Business Tendency Survey uses an enterprise approach
b. Response rate for supporting indicator, such as : revenue/sales (in rupiah), production volume ( in units); still low response
c. Consistency between Business Tendency Index and GDP
d. Special treatment for special situation (due to perception as an approach to business tendency index)

## 1.2 Consumer Tendency Index

### 1.2.1 Introduction

This survey provides an overview of the business and economic situation in general according to consumer income, based on consumer perceptions about business and economic situation.

Consumer Tendency Index is calculated from the results of the Consumer Tendency Survey (CTS) conducted since 1995. Coverage of the sample companies have changed the samples until 2015.

In 2011, CTS coverage was expanded across provinces in Indonesia, with coverage of household sample in urban areas. The expansion aims to present the CTI up to the provincial level. The number of household samples in 33 provinces reached 11,180 households per quarter. CTS respondents are a sub-sample of the National Labor Force Survey (Sakernas) specifically in urban areas. Selection of samples was conducted quarterly on a quarterly basis to obtain a more accurate picture of changes in consumer perceptions over time. These efforts are expected to meet the needs of increasingly diverse data to the regional level (spatially between provinces).

In 2012-2014 the CTS sample coverage in 33 provinces covers 14.600 households per quarter. A review of the method of calculating the index has been done and the results are applied to the CTI calculation by 2015. The change in the design of census and household block sample selection is also done to improve the representation of samples that meet the upper middle income household groups. In addition, the changes are also expected to improve the representation of the sample according to the education level of the head of the household or the respondent. The future challenge is the impact of the change of Susenas sampling design to the semester which influences the organizational structure of field officers of CTS.

By 2015, the coverage of CTS samples in 33 provinces is about 14,600 households in each quarter. Unlike the previous period which is a sub-sample of the urban labor force survey (Sakernas), a sample of households CTS 2015 is a sub-sample of the National Socioeconomic Survey (Susenas), particularly in urban areas, which are classified into "strata wealth index" medium and high. In addition, the selection of samples also considered the proportional representation of the proportional level of educational attitudes of heads of households. The sample selection was conducted quarterly between the panels to obtain a more accurate picture of changes in consumer perceptions over time.

### 1.2.2 Survey’s Purposes

The Consumer Tendency Survey aims to provide early information about economic developments from the consumer side (consumer economy) in the current quarter condition and provide an estimate of consumer condition in the next quarter

Main Variables:

- Volume of food consumption
- Revenue of all family members
- Inflation effect on food consumption
- Inflation effect on non-food consumption
- Volume of non-food consumption
-

### 1.2.3 Methodology

The scope of the CTS survey is in selected districts / cities that have been identified as urban areas. The number of census block samples is 1460 with the household sample per census block is 10. So, the total samples is amout 14600 households as following:

**Table 3. Consumer Tendency Survey's Samples Allocation**

| Provinsi (1) | Sampel STK (2) |
|---|---|
| 11. Aceh | 230 |
| 12. Sumatera Utara | 640 |
| 13. Sumatera Barat | 280 |
| 14. Riau | 320 |
| 15. Jambi | 200 |
| 16. Sumatera Selatan | 340 |
| 17. Bengkulu | 180 |
| 18. Lampung | 300 |
| 19. Kep. Bangka Belitung | 170 |
| 21. Kepulauan Riau | 260 |
| 31. DKI Jakarta | 880 |
| 32. Jawa Barat | 2560 |
| 33. Jawa Tengah | 1560 |
| 34. DI Yogyakarta | 400 |
| 35. Jawa Timur | 1800 |
| 36. Banten | 720 |
| 51. Bali | 380 |
| 52. Nusa Tenggara Barat | 290 |
| 53. Nusa Tenggara Timur | 180 |
| 61. Kalimantan Barat | 240 |
| 62. Kalimantan Tengah | 200 |
| 63. Kalimantan Selatan | 280 |
| 64. Kalimantan Timur | 340 |
| 71. Sulawesi Utara | 200 |
| 72. Sulawesi Tengah | 160 |
| 73. Sulawesi Selatan | 380 |
| 74. Sulawesi Tenggara | 180 |
| 75. Gorontalo | 160 |
| 76. Sulawesi Barat | 120 |
| 81. Maluku | 180 |
| 82. Maluku Utara | 130 |
| 91. Papua Barat | 160 |
| 94. Papua | 180 |
| **Indonesia** | **14600** |

The target population of The Consumer Tendency Survey is the middle and upper class households identified as the largest population unit in performing daily consumption activities. For that the sampling design is made in such a way, with the aim to describe the activity of consumption.

The sample frame of the CTS census block is a list of samples of Susenas census block in March 2017 of urban areas in each selected CTS District / City. Besides, to describe the activity of the largest consumption activity, the census block population used as the sample framework is derived and the census block is classified into middle and high Wealth Index strata. The result of the study from the Susenas data shows that in 2011-2013 in the urban areas more than 60% on average came from the consumption of middle and high class expenditure.

The distribution of the sample is made so that the sample spreads CTS census block by proportional based on the distribution of Susenas urban middle and high strata samples. Sampling stages are Two Stages Two Phase Sampling as follows:
Samples of the CTS census block were systematically drawn and samples of urban census block Susenas at each medium / high strata wealth index according to allocations. The use of two top strata expected to accommodate the level of consumption of basic food and processed foods items.
The CTS household sample is systematically drawn based on the implicit stratification of the household's head education level. Where is the education level of the head of household as well as distinguished Susenas four strata: under the elementary, junior high, high school, university.
Furthermore, census blocks and selected households of CTS activities in March 2017 will be treated as panel blocks and household panels in Q2 (June), 3rd Quarter (September) and 4th Quarter (December). eligible respondent is the Head of Household with minimum education of SMA or their partner.

### 1.2.4 Consumer Tendency Index

a. Scoring answers
   Increased = 1
   Stagnant = 0
   Decreased = -1
b. Current Indicators Index and Upcoming Indicators Index weighting
   Weighing determinations for the Current Indicator Index (CII) and the Upcoming Indicator Index (UII) use the double log function of each variable. The formula is as follows:
   1. Current Indicators Index
      IIK for Current CTI consists of 3 components variables. With the double log function as follows these three components are calculated by the following formula:

      $$Log\ \text{CII} = \alpha 0 + \alpha 1 L(p) + \alpha 2 Log(inf) + \alpha 3 Log(vol)$$

      The coefficient of a1 indicates the income elasticity of all household members to CII, a2 indicates the elasticity of the effect of price

increase (inflation) on the level of daily household consumption of CII, and a3 indicates the elasticity of the consumption volume of some current food and non-food commodities to CII

2. Upcoming Indicators Index
   The UII composite component for CTI consists of the income of all family members in the next 3 months and the purchase plan of durable goods, recreation, and party / celebration. Since quarter I-2004, weighing for both components is calculated through the double log function as follows:

$$\boldsymbol{Log}\ \mathbf{UII} = \ + \boldsymbol{\alpha_1 Log(pm)} + \boldsymbol{\alpha_2 Log(pbtl)}$$

c. Variables Index Calculation
   Furthermore, to obtain an index of each variable, is calculated using the formula Diffusion Index:

   Variables Index:

$$I_{vt} = \left[\left\{\left(\frac{1}{n}\sum_{i=1}^{n} T\_inc_i\right) - \left(\frac{1}{n}\sum_{j=1}^{n} T\_dec_j\right)\right\} * 100\right] + 100$$

   The index value of each variable between 0 – 200.

   Composite Index:

$$I_{vg} = \frac{1}{n_{vt}}\sum_{k=1}^{n_{vt}} (I_{vt})_k$$

d. Current Consumer Tendency Index and Upcoming Consumer Tendency Index Calculation
   To calculate the Current Indicator Index and Upcoming Indicator Index used the following formula:
   1. Current Consumer Tendency Index :

$$\boldsymbol{Current\ CTI} = \boldsymbol{w_p . I_p + w_{inf} . I_{inf} + w_{vol} . I_{vol}}$$

   2. Upcoming Consumer Tendency Index

$$\boldsymbol{Upcoming\ CTI} = \boldsymbol{w_{pm} . I_{pm} + w_{pbtl} . I_{pbtl}}$$

### 1.2.5 Challenges

a. The quality control of Consumer Tendency Survey
   Consumer Tendency Survey was conducted in all provinces in Indonesia, but data processing is still done only in BPS RI. When something strange happens to the data, the information will be submitted to the province and will be subsequently checked into the field. This resulted in a slower adjustment process. To mitigate this, a trial of decentralized processing has been conducted. Decentralized processing will be fully implemented after reviewing the evaluation of the try out.

b. Perception Approach of Consumer Tendency Survey
   Consumer Tendency Survey uses perceptual approach. One of the disadvantages of the perceptual approach is that the results may very differ when done at different times, even if it is only one day apart. Perceptions are strongly influenced by triggers or opinions circulating in society. Varied results can be caused by an issue that broke out in the middle of the enumeration. To reduce the bias due to this, enumeration is recommended to be done at short intervals.

c. Consistency between Consumer Tendency Index and GDP

## 2. Service industry statistics

## 2.1 Tourism Statistics

### 2.1.1 Introduction

Statistics services industry is one of the short-term economic indicators relating to some components of GDP. One of the major industry statistics services is tourism statistics. Although the tourism industry share of GDP is not too large, but in some provinces, tourism is a major element of GRDP. In GDP Production, tourism statistics relate to sector I (Accommodation), while on GDP expenditure, tourism statistics relate to export and import services.

### 2.1.2 Scope and Data Collection

The main variables on tourism statistics is visitors and hotel and accomodation data. International Visitor Arrivals Statistics is based on based on monthly report of international visitors arrivals provided by the Directorate General of Immigration and survey at traditional port of entries to complement the visitors arrival data that conducted by Ministry of Tourism and BPS-Statistics Indonesia. The international visitor statistics covered international visitors directly arrived to Indonesia through the airports, seaports, and border gate. There are more than 120 Technical Implementation Unit (TIU) of Immigration in Indonesia, where each

TIU covers one or more Immigration Investigation Place (IIP). The four main ports are Soekarno-Hatta (Jakarta), Ngurah Rai (Bali), Batam (Kepulauan Riau) and Kualanamu (North Sumatera). Meanwhile, statistics of hotel and other accommodation establishments as supporting data, were compiled and processed by Subdirectorate of Tourism Statistics, BPS-Statistics Indonesia. Monthly hotel and accomodation data consists of room occupancy rate and average length of stay covering all star hotels in 34 provinces. Meanwhile, for anually data, consist of room occupancy rate and average length of stay data is collected from all star hotels and sample of non star hotels, number of accommodation, average worker and visitor per day is collected from whole accommodation establishments in Indonesia. Also, data of the average expenditure and length of stay presented were obtained from the Passenger Exit Survey conducted by Ministry of Tourism

#### 2.1.3 Tourism Indicators

From several data and surveys, there are some tourism statistics that are classified as short-term economic indicators, such as:

a. Monthly International Visitor Arrivals To Indonesia,
b. Room Occupancy Rate
c. Average Length Of Stay

#### 2.1.4 Challenges

a. It is necessary to improve supervision and check the truth of respondents' answers.
b. Performing data processing at the provincial level to make it easier to check again if there are irregularities of data / documents.
c. Retraining officers is necessary, as there are many concepts that change

## 3. Bussiness Statistics

### 3.1 Medium and Large Manufacturing Statistics

#### 3.1.1 Introduction

The manufacturing sector is one of the major sectors of the Indonesian economy with the contribution of the manufacturing sector to GDP of 20.84 percent (2015), the largest share compared to other sectors. Large and Medium Manufacturing Industries (LMM) survey results are used to calculate monthly production indices. This index is used to see the growth rate of industry, especially manufacturing industry sector. In addition, this index is also used as input in the Limited Coordination Meeting (RAKORTAS) Economic Field, and also used as the basis for calculating Gross Domestic Product (GDP). The presentation of index numbers in the Website Special Data Dissemination Standards-International Monitoring Fund (SDDS-IMF) is regularly updated monthly. The results of the LMM Monthly survey have also been released in the Statistics Press Release. Monthly Industry Production Index is a macroeconomic indicator intended to be

used as an early warning system, so that decision makers can more quickly in making policy.

### 3.1.2 Survey's Purposes

a. Acquired large and medium manufacturing industry production index for monthly and quarterly periods
b. Early warning indicators for manufacturing industry growth
c. The basis for calculating Gross Domestic Product
d. Main Variables:
   - Production Volumes
   - Production Values
   - Employment
   - Production to Full Capacity ratio

### 3.1.3 Methodology

Large and Medium Manufacturing Companies covered in the LMM Annual survey and LMM Monthly survey are companies with a labor of 20 or more persons, including newly started industrial companies. The Large and Medium Manufacturing Industry Survey is conducted annually to all large and medium-sized industrial companies listed in the BPS Industry Directory (full enumeration). Meanwhile, for monthly survey, The LMM Survey is based on sample with 1703 samples. This survey uses Directory of large and medium industries 2015 as their sampling frame.

### 3.1.4 Indicators

Large and Medium Manufacturing Surveys produces two main indicators as short-term economic indicators: growth of manufacturing industries' production and manufacturing industry production index. Growth of manufacturing industries' production shows the rate of change in the value of manufacturing industry production in the current period to the value of manufacturing industry production in the previous period. This figure is also presented in monthly, quarterly and annually period with KBLI 2 digits. Manufacturing industry production index describes the pattern of manufacturing production in early, complete, and longer data series due to its monthly period data release. The monthly data can also be presented as quarterly or annually data. Quarterly data is the average of the monthly index in the quarter and the annual index is the average of 4 (four) quarter in the year. This figure also presents the production index in KBLI 2 (two) digits.

### 3.1.5 Challenges

There are several challenges that BPS face on Large and Medium Manufacturing Survey:

a. Response rate.

The response rate of Large and Medium Manufacturing Survey is categorized as medium scale response rate with only 40%-80% response rate. When the survey rate response is less than 70%, then the manufacturing production index will not be released. This is done to maintain the quality of data released. To improve response rate, we send newsletters to companies that are difficult to respond, and do e-surveys online.

b. Sampling Design

To reduce bias panel and respondent burden, new sampling after a certain period is necessary. Furthermore, after processing of the 2016 economic census (2016 EC) is completed, for the effectiveness and efficiency of the survey, there is the possibility of Sampling Frame replacement. Currently, the sampling frame used is a 2015 manufacturing company directory. It is hoped that this directory will be replaced using the directory from 2016 EC that are integrated in the Statistical Business Register.

**References**

Badan Pusat Statistik. (2016). *Manufacturing Industrial Indicators 2015.* Jakarta: Badan Pusat Statistik.

Badan Pusat Statistik. (2016). *VHTL and VHTS Enumeration Guidelines.* Jakarta: Badan Pusat Statistik.

Badan Pusat Statistik. (2017). *Business Tendency Survey and Consumer Tendency Survey Implementation Guideliness.* Jakarta: Badan Pusat Statistik.

Badan Pusat Statistik. (2017). *International Visitor Arrivals Statistics 2016.* Jakarta: Badan Pusat Statistik.