

Compilation of Satellite Accounts in Indonesia

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Satellite accounts was introduced to Indonesia in 1970's, which was begun by compilation of national Input Output Table and Social Accounting Matrix 1975. In that period, the compilation was supported by Netherlands CBS and Government of Japan. In the next period, compilation of satellite accounts was broadened by covering national Flow of Funds series, Financial Social Accounting Matrix 2005, and some national and regional Tourism Satellite Accounts. However, compilations of satellite accounts before 2015 was not fully consistent with other statistics, i.e. GDP/GRDP and or BOP, as Indonesia national accounts framework have not been developed. In 2015, Indonesia started to implement national accounts framework with support from Australia ABS and IMF, followed by compiling and releasing Input Output Table 2010. In recent period, Indonesia has also released other consistent satellite accounts, such as Tourism Satellite Accounts, Input Output Table on Creative Economy 2014, and Maritime GDP 2010-2016. In the near future, Indonesia will also release Social Accounting Matrix 2010 and develop Environmental Accounts. Satellite accounts has brought benefits and raised challenges, either for users or compiler. For users, satellite accounts could provide more specific, detail, and consistent data, which are very important in learning the condition, developing the models, and designing policies. For compilers, satellite accounts would give opportunities to have better understanding of business process and the story behind the figure, as well as underlying phenomena. Satellite accounts would also provide us with insight to improve data quality and provide good sources to improve the existing data series. For both users and compilers, satellite accounts could strengthen institutional cooperation, improve the availability and quality of data sources, align sectoral data with main statistics, and support the development of national statistical system. Nevertheless, satellite accounts would also raise challenges, particularly in increasing requirement of detail data and compilers' work load. Regarding that, compilation of satellite accounts should be designed to achieve well-balanced solutions by optimizing all the resources and taking into accounts all possible challenges.

Keywords: satellite accounts, national accounts framework, data quality

I. Introduction

BPS-Statistics Indonesia, national statistics office of Indonesia has been developing national accounts statistics since 1950's and started to compile gross domestic products (GDP) by production and several years after started to compile GDP by expenditure. The compilation of GDP was extended hereafter to annual GRDP (GDP at regional-province level) by production and expenditure in 1983. During the period, the compilation was assisted by several partner countries, especially Netherlands CBS and Government of Japan through JICA program. Compilation of annual GRDP by both approaches were improved to quarterly series in 2005. Later on, it also was followed by compilation of annual GRDP at municipal level by production in 1993 and by expenditure in 2017.

The development of national accounts statistics was also equipped by compilation of several satellite accounts, such as input output table and social accounting matrix since

1975 and flow of funds since 1984. However, compilations of satellite accounts before 2015 was not fully consistent with other statistics, i.e. GDP/GRDP and or balance of payment (BOP), as Indonesia national accounts framework have not been developed.

In 2015, BPS started to implement national accounts statistics framework by developing supply and use table (SUT) and sector accounts (full sequence of accounts-FSA) with support from ABS Australia and IMF. It was then followed by compilation and release of Input Output Table 2010 and new series of GDP and GRDP with 2010 base year. Currently, Indonesia has SUT 2010 and is in progress of compiling sector accounts 2010-2015, and will continue compiling the both data regularly.

Improvement in national accounts statistics has increased users' trust. As a result, demand of the detailed and new specific statistics also increase, particularly from other government institutions. In recent period, BPS has compiled and released new national accounts statistics (including satellite accounts) to fulfil wider the users' need, such as input output table on creative economy 2014 and maritime GDP 2010-2016. However, those statistics were still stated in preliminary figures as currently Indonesia has only a single year of SUT (2010) for benchmark data.

II. Satellite Accounts in Indonesia

Compilation of satellite accounts in Indonesia mainly conducted to fulfil external-internal needs and be aligned with international recommendations. External needs are from central and local government institutions, with objectives to be used as source policy making in planning, controlling, and evaluating phase of programs. Internal needs are from BPS itself, with objective to support information for data users and improve data quality. BPS will continue to compile satellite accounts while developing the new ones in the near future, based on its priority. Following paragraphs will describe some satellite accounts that have been compiled so far.

II.1. Input Output Table

Input output table is one of the satellite accounts which has been compiled since the beginning of development of national accounts statistics in Indonesia. The compilation was based on 1968, 1993, and 2008 system of national accounts concepts, depend on its compilation period. The compiled data categorized as satellite accounts type 1, which involves some rearrangement of central classifications and the introduction of complementary elements.

Input output table is not compiled in annual basis, but in 2 or 3-year interval. Input output table with reference year ended with 0 or 5 has more complete classification (around 175x175 to 185x185 commodity by commodity classification), while with reference year ended 3 or 8 has more aggregate classification (around 60x60 commodity by commodity classification) and stated as an updated version. Normally, the data will be available in two or three years after the reference year has ended.

Compilation of input output table from reference year 1975 to 2008 were still not fully consistent with other statistics, for example GDP level in input output table was not equal to GDP at current market price for each corresponding year. This inconsistency issue

has been resolved in early of 2015, since BPS released new series of GDP (with base year 2010) and input output table 2010 based on supply and use table 2010.

In compiling the input output table, national accounts compilers used various data from internal and external sources collected as administrative data of government institutions and business associations to complement primary data from surveys, census, and in-depth studies. Financial report from listed companies available in the internet in some cases were also used.

Input output table has been used widely by various user, i.e. Universities, Research agencies, government institutions like Indonesian Ministry of National Development Planning (BAPPENAS), Fiscal Policy Agency of Ministry of Finance, Central Bank, etc.. Input output table also used by international organizations for statistics and economics analysis purposes.

In some provinces and municipalities, input output table also compiled at regional level. Usually, it is conducted by regional statistics office to fulfil local government needs in analyzing the regional economy and policy making. Classification used in regional input output table is provided less detail comparing to the national level, and not always stated in commodity by commodity, but also in industry by industry.

II.2. Social Accounting Matrix

Social accounting matrix (SAM) is an extension of input output table which adds production factor, institution, and other accounts blocks in the framework. It also has been compiled since the beginning of development of national accounts statistics in Indonesia. The compiled data categorized as satellite accounts type 2, which based on alternative concepts that to those of the SNA, mainly in the area of compensation of employee. In Indonesia SAM, compensation of employee not only covered compensation of paid workers, but also included unpaid workers. The value of compensation of unpaid workers was extracted from gross operating surplus.

Similar with input output table, SAM is also compiled in 2 or 3-year interval. SAM with reference year ended with 0 or 5 has better details in classification (around 107x107 rows and columns), while with reference year ended 3 or 8 has more aggregate classification (around 105x105 rows and columns). Normally, the data will be available one year after the release of input output table.

Compilation of SAM data used additional data apart from data used in input output table to fill some cells related with production factor, institution, and other accounts. Those additional data comprise national socio-economic surveys (SUSENAS), labor force survey (SAKERNAS), BOP, and some national accounts special surveys such as inter-household transfer survey, NPISH surveys, household saving and investment survey, and non-financial corporation survey.

SAM data has been widely used by various users as economic database and economic modeling purposes. The data has given significant contribution in designing some important policies related to infrastructure investment, poverty reduction, subsidy reform on energy products, etc.. The data also has been extended to financial and fiscal aspects i.e.

BPS and Bank Indonesia have compiled financial social accounting matrix (FSAM) 2005 together and Ministry of Finance team has compiled fiscal social accounting matrix 2015.

In the near future, Indonesia will release SAM 2010. Release of the data has been rescheduled for several times due to unavailability of sector accounts 2010 data as benchmark. Currently, BPS in cooperation with Central Bank, Financial Services Authority, Ministry of Finance, and Ministry of State Owned Enterprise are finishing sector accounts 2010-2015. Comparing with previous data, there is additional classification in the SAM 2010 i.e. displayed property income transaction separately, apart from gross operating surplus.

II.3. Flow of Fund

Flow of fund has been compiled in Indonesia since 1984. At the earliest period, BPS received assistance from CBS-Statistics Netherlands experts, named Mr. Steven Keuning and Mr. Peter van de Ven. The data was compiled in annual and quarterly series, represents financial transactions by institutional sectors and financial instruments. Currently, BPS used six institutional sectors and seventeen financial instruments classification to capture the transactions.

Compilation of flow of fund mainly used administrative data. Central Bank, Ministry of Finance, and other financial institutions are the providers of data sources as well as the main user of compiled data. Those institutions used flow of fund data to analyze the economy from financial perspective. Recently, some data users have intention to learn flow of fund further to do financial analysis related to implementation of government policy on tax amnesty in 2017.

II.4. Tourism Satellite Accounts

Tourism satellite accounts has been compiled since 2001. The data was compiled periodically at annual basis with main objective to support Ministry of Tourism in policy making related to their programs. Basically, the data was similar with input output table, with emphasizing in tourism-related sectors. Up to 2018, compilation of the data was conducted by Tourism Statistics Sub-directorate of BPS with 74x74 dimension commodity by commodity in the first quadrant of the table.

In 2019, compilation of the data will be conducted by national accounts compilers (Directorate of Production Accounts and Directorate of Expenditure Accounts) in order to form simpler work flow. Alignment tourism satellite accounts with other national accounts data and its complement with series of international recommendation for tourism statistics will be easier to conduct if the job is done by national accounts compilers.

Compilation of tourism satellite account used similar data sources used in input output table. There are some additional data to depict tourism-related sectors which collected from tourism surveys, such as passenger exit survey (PES), domestic tourist survey, and outbound survey.

Tourism satellite accounts also compiled at regional level in some provinces. The compilation is not conducted annually, but only in certain year to fulfil local government needs.

II.5. Input-output on Creative Economy

Input output table on creative economy 2014 was compiled in 2017. The data was not compiled annually, but only one reference year to respond the request from Indonesian Agency for Creative Economy (IACE). IACE is a new institution in Indonesia which responsible in managing the creative economy. In previous cabinet, creative economy affair was part of Ministry of Tourism and Creative Economy.

As well as tourism satellite accounts, the basic data of input output table on creative economy was input output table (updating) with emphasize on creative economy sectors and provided in 63x63 commodity by commodity classification. Compilation of input output table on creative economy also used similar data sources used in input output table with creative economy data additionally gathered from special survey.

Compilation of input output table on creative economy was also equipped with other statistics, such as creative economy GDP, export of creative economy products, and creative economy employment series data 2010-2016.

II.6. Maritime GDP

Maritime GDP basically provides information about value added of economic activities related to maritime. The data was compiled to fulfill request from Coordinating Ministry of Maritime. Compilation of the data was based on Indonesia Maritime Law No 32 year 2014 and Dutch Maritime Cluster reference.

Currently BPS has compiled maritime GDP 2010-2016 which was equipped with statistics of export of maritime products and employment in maritime economic activities. Compilation of the data mainly used administrative data and result of special survey as data sources. Currently, maritime GDP and its accompanying statistics become main indicators in maritime development in Indonesia. For that reason, Coordinating Ministry of Maritime and other users expect that BPS could compile it regularly.

III. Notes on satellite accounts compilation

BPS has a long experience in compiling satellite accounts. In the near future BPS will also compile new ones, i.e. environmental accounts and national transfer accounts. In this case, Ministry of Health has requested BPS to support them in compiling health accounts.

Satellite accounts has brought benefits and raised challenges, either for users or compilers. For users, satellite accounts could provide more specific, detail, and consistent data, which are very important in analyzing the condition, developing the models, and designing policies.

For compilers, satellite accounts would give opportunities to have better understanding of business process and the story behind the figure, as well as underlying phenomena. Satellite accounts would also provide us with insight to improve data quality and provide good sources to improve the existing data series. For example, when we get more detail about creative economy, we may discover that some statistics that have been published are underestimated or overestimated.

In compiling the satellite accounts, compilers also learn important aspects for better statistics governance, particularly in statistical legal aspect, networking, team building, data processing, data documentations and its process, and revision policy.

For both users and compilers, satellite accounts could strengthen institutional cooperation, improve the availability and quality of data sources, align sectoral data with main statistics, and support the development of national statistical system. These opportunities enable us to improve data quality right after the first stage of its development.

Nevertheless, satellite accounts would also raise challenges, particularly in increasing requirement of detail data and work load of compilers. Besides, it also potentially increases respondent burden. Regarding that, compilation of satellite accounts should be designed to achieve well-balanced solutions by optimizing all the resources and taking into accounts all possible challenges and its alignment with national accounts frameworks.