"Modernizing the Quarterly Economic Data Collection in Abu Dhabi"

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Abstract

Quarterly national accounts (QNA) constitute a system of integrated quarterly time series coordinated through an accounting framework. QNA adopt the same principles, definitions, and structure as the annual national accounts (ANA).

Quarterly National Account Indicators (QNAI), They are quarterly estimates of the Gross Domestic Product (GDP) at current prices, and they measure the contribution of the organizational sectors and various economic activities, in addition know the aspects of spending on the GDP in Abu Dhabi Emirate. The outcome of this project provides key economic indicators, particularly for the quarterly GDP of Abu Dhabi Emirate. Such information is of crucial significance to the Emirate, especially in view of the unprecedented development and growth the Emirate's Economy is currently experiencing. In addition, the data will provide businesses, investors and general stakeholders with baseline business cycle information for investment decisions.

In the old phase the Quarterly Economic Survey (QES) collected data from 124 establishments. It included two questions about the revenue and employment numbers for each quarter. The responses were combined with administrative data to calculate indicators about the changes in the economy. These indicators were used to extrapolate the benchmarked quarterly Value Added for each economic activity.

In the new phase the data collection process is carried out quarterly during a period of time and with a sample size of around 2,300 establishments by specialized questionnaire includes many questions about employees, revenues, intermediate consumption, etc. Specified establishments are visited, according to economic activity. The target population in the QES includes all establishments operating in Abu Dhabi Emirate and registered under the updated economic establishments framework.

Validation; Provide necessary quarterly data to prepare national accounts aggregates such as GDP. Provide short-term data to calculate the contribution of economic activities and measure the extent of economic diversification and development in the non-oil sectors. Provide short-term data on Small and Medium Establishments (SMEs) to evaluate their investment and take appropriate decisions.

Keywords: Abu Dhabi **(AD)**, Quarterly national accounts **(QNA)**, Quarterly National Account Indicators **(QNAI)**, Quarterly Economic Survey **(QES)**, Gross Domestic Product **(GDP)**.

1. Introduction

Abu Dhabi emirate is the federal capital of the United Arab Emirates (UAE) and the largest of the seven emirates. Abu Dhabi emirate consists of three main regions, Abu Dhabi Region, Al Ain region and Al Gharbia region. Throughout the last few decades. Abu Dhabi Government devoted outstanding efforts, to enhance the emirate's profile and reputation gained by the most up-to-date systems, on all levels (economic, social, environment and excellence in government performance,) and laid down a number of plans and initiatives, ensuring an appropriate and effective alignment of development gains/ benefits, and build a sustainable economy serving all the Emirate's regions. (The Government of Abu Dhabi, 2007).

Statistics Centre – Abu Dhabi (SCAD) established in accordance with Law No. (7) of 2008 as the main authorized body concerned with official statistics in the Emirate of Abu Dhabi. SCAD is responsible for the collection, classification, storage, analysis and dissemination of official statistics covering social, demographic, economic, environmental and cultural indicators.

Accordance with Law No. (5) of 2021 Concerning the Reorganization of Statistics Centre - Abu Dhabi; The Centre may use all data sources to prepare official statistics, and all private institutions and companies shall provide the Centre, upon its request, without any consideration, with the detailed data it requests within the limits of its competence and in a form that can be processed electronically.

The main purpose of QNA is to provide a picture of current economic developments that is timelier than that provided by the Annual national accounts (ANA) and more comprehensive than that provided by individual short-term indicators. Therefore, QNA should be timely, coherent, accurate, comprehensive, and reasonably detailed.

They can serve as a framework for assessing, analyzing, and monitoring current economic developments. Moreover, by providing time series of quarterly data on macroeconomic aggregates in a coherent accounting framework, QNA allow analysis of the dynamic relationships between these aggregates.

So, QNA provide the basic data for business-cycle analysis and for economic modeling purposes. Similarly, QNA have a particular role to play for accounting under high inflation, sharp changes in relative prices, and where annual source data are based on varying fiscal years. In addition, as with the annual accounts, QNA provide a coordinating conceptual framework for design and collection of economic source statistics and a framework for identifying major gaps in the range of available short-term statistics.

The outcome of QNA provides key economic indicators, particularly GDP for Abu Dhabi Emirate. Such information is of crucial significance to the emirate, especially in view of the unprecedented development and growth the emirate's economy is currently experiencing. In addition, the data will provide businesses, investors and general stakeholders with baseline business cycle information for investment decisions.

QNA should be available within three months after the end of the reference quarter. ANA are produced with a considerable time interval. The initial ANA are often available six months or more after the end of the year. Even if the ANA were as timely as the QNA, they would not provide

timely information about the current economic situation since the information for the first quarter would be delayed.

The statistical unit is defined as the unit about which statistical data is collected, and in this project, it will be the operating establishment. According to the economic definition, the establishment is: a project or part of a project that has a fixed location that performs one type of production activity (commodity or service), or returns to it. The main productive activity with most of the value added and this activity is carried out under one management that may have regular accounts, and the owner of the project is a natural or legal person regardless of the legal entity. There are many standard guides are used when compiling and analyze the data, such as the International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4, System of National Accounts (SNA) 2008, were used, and Quarterly National Accounts manual (QNAM) 2017, etc.

2. Previous Method
2.1 Data Collection Method

The QES is an electronic collection; Respondents complete the online questionnaire while face to face meetings are held in special cases. Administrative data are collected from government entities, from websites and by email. Output files are produced and extracted into Excel from the QES online system. The responses are validated in the online system and again by the subject matter experts. Unusual responses are followed up by telephone, email or face to face meetings if required. The final input data are integrated in an Excel compilation system which calculate the changes in the economy through extrapolation, deflation and reflation.

Administrative data about the number of employees are collected by email from the Ministry of Labor. Various other admin data are collected by email. Survey data about the revenue and number of employees are collected with the Quarterly Economic Survey (QES). Other data such as insurance premiums are downloaded from the internet.

2.2 Response Status Rules

QES involves a purposive sample of approximately 124 establishments spread across the three regions of the emirate of Abu Dhabi (Abu Dhabi, Al Ain and Al Dhafra). This sample is also spread across the following five activities of the economy; Information and Communications, Insurance, Manufacturing industry, Transport and Services.

The data is collected on a quarterly basis (3 months data) covering Q1 (Jan-Mar), Q2 (Apr-Jun), Q3 (Jul-Sept), and Q4 (Oct-Dec). Collection phase starts on the mid of the month following the end of quarter. The collected data will be combined with administrative data in the compilation process of Quarterly Gross Domestic Product (QGDP) Estimates for Abu Dhabi Emirate.

Output will be Quarterly GDP and its shares. Appropriate data validation rules are applied to reduce the risk of processing errors. Daily reports are produced with a review of completed establishments data. Reports include the progress details up to date and comments on data if available. The target response rate is 100%. Refusal to respond is limited to a small number of establishments each year. These are replaced in the sample with similar sized establishments.

2.3 Quality Assurance Processes

The editing of the data is done instantly during the data collection. The data collection system has built in validations that appear in the back-office (database) for the enumerator once the questionnaire is completed by the respondent. In case of edit failure of certain questions flags appear at the backend and therefore the enumerator re-contacts the establishment to obtain the correct data.

2.4 Revision Process

Quarterly estimates of GDP are released on the following schedule: "Preliminary" estimates, based on source data that are incomplete or subject to further revision by the source agency, are released near the end of the third month after the end of each quarter. The quarterly GDP preliminary estimates for the previous 2 years are updated as part of the benchmarking against the preliminary annual GDP estimate in March of each year. This include revisions as a result of the benchmarking exercise as well as to incorporate significant new data which may become available. Final annual GDP estimates for the previous calendar year are released towards the end of December of the following year as more detailed and more comprehensive data based on primary sources become available. Quarterly GDP estimates for the previous 2 calendar years are also revised as part of the benchmarking against the final annual GDP. Further revisions to quarterly estimates of GDP are required periodically to align the quarterly estimates with the annual estimates of GDP. These revisions are necessary to incorporate definition and classification changes or to reflect the introduction of new and improved methodologies.

3. Modern Method:
3.1. Data Collection Method

The data collection stage represents the largest part of the project stages, during which the establishments identified in the sample are visited, provided that they engage in any economic activity during the survey period. Data is collected by a number of different methods, which in turn guarantee the quality of the survey data and high response rates. Therefore, the specialists determine the most appropriate method according to the nature of the establishment, provided that its data is completed by sending a link to the electronic form via the e-mail available from the database. During the first visit, the cover page data is collected through a telephone interview, in addition to determining the preferred method for collecting the rest of the establishment's data. Where the establishment completes its data either through the electronic link or fills out the form as an Excel file. The sample of QES establishments was divided into four stratums depending on the number of employees; Micro, small, medium and large establishments according to the decision of the United Arab Emirates Cabinet issued in 2017.

This survey uses the following collection methods:
- Via the Internet: Collecting data for a group of establishments using an electronic form which is accessed via a link sent to the establishment.

- Using e-mail: by sending the questionnaires as an Excel file to the establishments via e-mail.
- The electronic interview method: in which data is collected through telephone contact or the use of electronic communication methods for the sample unit, and the questionnaire data is completed by the respondent using a computer.

3.2. Response Status Rules

In QES consists of a random sample that drawn from the Economic Framework, which is around 2,300 establishments, sample size varies from quarter to quarter depending on sampling requirements. Drawing the sample on the second digit of ISIC.4, which includes all the economic activities of Abu Dhabi Emirate according to the three regions (Abu Dhabi, Al Ain, and Al Dhafra). The target community of QES includes all establishments operating in Abu Dhabi Emirate and registered under the Center's establishments, with the exception of some establishments operating in the economic activities shown below:
- Section A, "Agriculture, forestry and fishing"
- Section O, "Public Administration and Defense; Compulsory Social Security."
- Section T, "Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
- Section U, " Activities of extraterritorial organizations and bodies "
- Establishments that do not maintain separate accounts, and whose main office is within the Emirate of Abu Dhabi.
   The data is collected on a quarterly basis (3 months data) covering Q1 (Jan-Mar), Q2 (Apr-Jun), Q3 (Jul-Sept), and Q4 (Oct-Dec). Collection phase starts on the mid of the month following the end of quarter.

3.3. Quality Assurance Processes

After receiving the questionnaire, the field enumerator reviews the information to ensure that all items are correct and communicates with the facility if necessary. Then the supervisor field reviews the form and transfers it to the data auditor for final approval.

After that comes the role of User acceptance testing (UAT); Processing team will perform UAT along with information technology (IT) -application development- team when it was in development (built) phase and will generate database issues report, which contains differences of variable type and format between questionnaire and database tables and communicate the information with IT team to update the information in database tables as per questionnaire. Additional level of macro checks is conducted to verify the level of changes in the establishments, in terms of size and economic activity as per the data collected from the field and sample design.

3.4. Revision Process

QES results are released after getting all information and data based on the source. While filling the forms with the respondent, the researcher must ensure that all items of the form are fulfilled by the respondent. In the event that an answer is not required for a specific item, the researcher must ascertain the reason for the non-response and put the appropriate code for the item (so that it does not affect the calculations) according to the following cases: refused to answer, there is no answer, the respondent does not know the answer, the answer does not apply, the answer is not available, the value of the answer is zero, there is no phone or fax, there is no email, and there is no internet site.

3.5. Generic Statistical Business Process Model (GSBPM)

QES applying GSBPM. The GSBPM describes and defines the set of business processes needed to produce official statistics. It provides a standard framework and harmonized terminology to help statistical organizations to modernize their statistical production processes, as well as to share methods and components. The GSBPM can also be used for integrating data and metadata standards, as a template for process documentation, for harmonizing statistical computing infrastructures, and to provide a framework for process quality assessment and improvement. The GSBPM should be applied and interpreted flexibly. It is not a rigid framework in which all steps must be followed in a strict order; instead, it identifies the possible steps in the statistical business process, and the interdependencies between them. Although the presentation of the GSBPM follows the logical sequence of steps in most statistical business processes, the elements of the model may occur in different orders in different circumstances. In addition, some sub processes will be revisited a number of times forming iterative loops, particularly within the Process and Analyze phases. The GSBPM should therefore be seen more as a matrix, through which there are many possible paths. In this way, the GSBPM aims to be sufficiently generic to be widely applicable, and to encourage a standard view of the statistical business process, without becoming either too restrictive or too abstract and theoretical.

4. Conclusion

The process of developing, evaluating and analyzing the methods of producing indicators by collecting data from field surveys, not estimated ones, is the cornerstone of improving the quality of the required indicators. The evaluation process requires tracking data collection, processing and analysis according to the best scientific methods and practices. The application of scientific statistical measures and tests will indicate weaknesses and enable them to be improved, developed and addressed, and thus will provide aggregate economic statistical indicators and variables of high quality that can be used in the process of designing policies and making economic decisions with reliability and high quality. In this context, the Department of Economic Statistics at the SCAD has entrusted itself with developing and raising the efficiency of the statistical product continuously and improving performance in its work by implementing scientific statistical field

surveys, especially those related to economic statistical products and the results of field surveys, to ensure the highest possible quality of the statistical output.

5. References:

- https://statswiki.unece.org/display/GSBPM
- International Monetary Fund (IMF), (2017), Quarterly National Accounts Manual, New York, USA.
- SCAD, (2020), Economic Statistics for several years, Abu Dhabi. UAE.
- SCAD, (2020), Industry & Business for several years, Abu Dhabi. UAE.
- United Nations (UN), (2008), System of National Accounts, New York, USA.
- United Nations, (2008), International Standard Industrial Classification of All Economic Activities, Rev.4, New York, USA.