

TWINNING CONTRACT

JO/13/ENP/ST/23

Strengthening the capabilities of the Department of Statistics in Jordan



MISSION REPORT

on

Activity 1.2: National accounts compilation approaches

Mission carried out by

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2 to 6 February 2014

Version: Final



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Table of contents

Executive Summary	5
1. General comments.....	5
2. Assessment and results.....	6
3. Conclusions and recommendations	9
Annex 1. Terms of Reference	11
Annex 2 - Programme for the mission	12
Annex 3. Persons met.....	13
Annex 4 – Supply-Use framework.....	14

List of Abbreviations

DoS	Department of Statistics of Jordan
ToR	Terms of Reference
CBJ	Central Bank of Jordan
MoP	Ministry of Planning
SNA	System of National Accounts
GDP	Gross Domestic Product
SUT	Supply Use Table
GFCF	Gross Fixed Capital Formation
IMTS	International Merchandise Trade Statistics
IMF	International Monetary Fund
SDDS	Special Data Dissemination Standards
HIES	Household Income and Expenditure Survey
BoP	Balance of Payments
IIP	International Investment Position

Executive Summary

The mission had two main aims:

- To complete the assessment of the sources and methods used to compile GDP that was started during the first mission, and
- Introduce DOS staff to SNA2008 and identify the main changes that will impact on the national accounts of Jordan.

The assessment

The Department of Statistics' national accounts division produces robust estimates of activity output and GDP at current and constant prices, based on a system of surveys and prices of the relevant activities. The short-term estimates are produced using the single deflation method (deflated sales) and the corresponding annual estimates are produced using double deflation techniques, as the annual surveys ask for details of intermediate consumption as well as sales.

Imports and exports of goods are based on customs data and imports and exports of services are sourced from the Balance of Payments produced by the Central Bank of Jordan. Data is supplied to the DoS with full detail and in a timely manner.

DoS would like to expand the range of expenditure components in the quarterly system, showing both current and constant price estimates for the main components such as household expenditure and capital formation.

For this, given the lack of appropriate expenditure sources, they will require extensive use of the commodity flow approach, based on structures from a recent supply-use balanced framework. It is a big step to go from the current arrangements to a system producing consistent estimates of GDP and its components at current and constant prices based on an annual supply-use framework, with a quarterly version used for modelling early quarterly estimates.

This assessment confirms that the highest priority in terms of the twinning project is direct support on producing a supply-use balance for 2011, and an associated short-term modelling facility to enable quarterly estimates of both output and expenditure components of GDP to be produced in a harmonised way.

Given that the 2006 supply-use balance has not been used in the current system, and so index weights remain in 1994 terms, the move to the 2011 supply-use balanced frame will be a very big one, with the likelihood of significant upward revisions to the existing quarterly and annual estimates of growth. These revisions must be planned for and a strategy drawn up to handle user expectations.

1. General comments

This mission report was prepared within the Twinning Project "Strengthening the capabilities of the Department of Statistics in Jordan". It was the second mission to be devoted to national accounts within Component 1 of the project.

The purposes of the mission were:

- To train the DoS staff in the methodologies used for deriving GDP
- To review the methods currently used for deriving GDP
- To discuss methods for estimating GDP at fixed prices
- To train the DoS staff in the SNA
- To introduce the DoS staff to the major changes between the ESA 1995 / SNA 1993 and the ESA 2010 / SNA2008

The consultants would like to express their thanks to all DOS officials and individuals met for the good cooperation which they received during their stay in Jordan and which highly facilitated their work.

This views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, DoS or NI-CO.

2. Assessment and results

Capacity building

The national accounts team consists of 11 staff, with a range of experience in national accounts. The typical experience is 3-4 years, with three members of staff having considerably more - the Supply-use statistician had 12 years experience, the head of annual national accounts 10 years, and head of the national accounts division 15 years experience.

Engagement with staff during workshops throughout the mission confirmed that the office has a team of staff with the capability to produce quarterly and annual national accounts with GDP estimates largely based on the production approach.

Workshop sessions were delivered on the following subjects:

- An introduction to national accounts illustrated by developing a picture of a simple economy to show the key players in an economy and their interactions;
- The 3 measures of GDP;
- Introduction to Supply Use Table balancing;
- Introduction to SNA08 changes.

These were well attended sessions with all available staff in national accounts attending. The sessions were interactive, with good participation from DOS staff.

GDP sources and methods – an assessment

Annual production

DOS conducts annual economic surveys covering all economic activity headings at the ISIC 4 four-digit level. The sampling frame is based on a five yearly census of some 150,000 establishments (latest one 2011). Basic information such as activity (four digit code (ISIC Rev 4)), location, employment and turnover is gathered as part of the five yearly Census.

Annual production surveys are also undertaken. They are based on sample surveys using the latest establishment frame. The sample is stratified according to employment, with establishments with more than 20 employees surveyed on a complete Census basis. The introduction of a regularly updated business register would improve the consistency of production estimates over time and help prevent large revisions on key measures.

Response rates are high (over 85% on average). The questionnaires of the annual economic surveys are detailed. The questionnaire is split into eight parts.

Part 1: Identification, location, type of enterprise, 4-digit activity code.

Part 2: Legal status, ownership (public, private, foreign), share ownership.

Part 3: Compensation of employees is split into cash, and 10 forms of non-cash payments (payments in kind).

Part 4: Intermediate consumption - 16 different intermediate inputs of raw materials by type and utilities etc., and over twenty categories of services.

Part 5: Revenue from main production, split between market and non-market. Revenue from secondary production with the appropriate activity code is also collected .

Part 6: Payments and revenues of property income and financial transactions (over 25 different categories) are collected.

Part 7: Taxes and subsidies on production and imports (15 types).

Part 8: 1- Balance sheet information on financial assets and liabilities (12 categories identified)

Part 8: 2- Balance sheet information on non-financial assets (19 measures by 10 types of asset).

The annual questionnaire is very detailed. As the survey is carried out by experienced field staff (enumerators) by face to face interview, this is not a drawback, as the smaller establishments are not required to fill in most of the detail. The relatively high response rate is also probably due to the one-to-one nature of the survey enumeration.

Annual estimates of agricultural production are based on an annual Census of agricultural production. Three regions are covered, and the system is supported by a comprehensive government subsidy system so that those applying for help, register the details of their stock of animals. The surveys are carried out through personal enumeration by experienced field staff.

Survey results are validated by national accounts before they are published. This is good practice.

On the expenditure side, the following sources are available:

- **Balance of payments** are used for trade in goods and services. These sources have not been assessed, although trade in goods data are generally of good quality and available in sufficient detail for SUT balancing. Trade in services are often less comprehensive and less detailed, although in Jordan a border survey is used to collect travel exports (purchases of non-residents in Jordan) and travel imports (purchases of residents abroad).
- **Retail sales** data are available quarterly, although with only a limited product breakdown. A more detailed breakdown was collected and used for the 2006 SUT exercise.
- **Government expenditure** data are available on a quarterly basis according to ISIC Rev4 breakdown. Data are comprehensive.
- **Household consumption** data is collected via the biannual Household Income and Expenditure Survey (HIES).
- **GFCF – imports** data is classified by HS. If this is classified to end-use, monthly imports of capital goods can be derived. In addition, construction output data can be used to inform expenditure on buildings. A commodity/flow approach is recommended to derive quarterly GFCF, based on the structures of supply and use of GFCF from the most recent SUT and available component data (trade and output of construction industries).

Quarterly production

A scaled down version of the annual survey takes place quarterly. The samples are smaller (although 90% of all production is carried out by the larger firms employment over 20) which ensures a coverage largely consistent with the annual survey. All sectors apart from finance are covered.

The annual survey collects reasonable detail on the type and amount of intermediate consumption. This combined with a comprehensive system for collecting a producing price indices (PPIs) at factory gate prices enables value added in volume terms to be calculated as the residual of deflated turnover and deflated intermediate consumption.

Such double deflation techniques for recent years are best carried out within a supply-use framework, where consistency between production, expenditure and income is ensured, and inconsistencies over time can also be avoided. Double deflation techniques without the supply-use framework are more susceptible to error – the estimation of intermediate consumption outside a supply-use system can cause inconsistencies over time.

The quarterly system is calculated using a single indicator system.

The three approaches to GDP

At present, only the production approach is used in the estimation of annual and quarterly estimates of GDP levels and growth. On the basis of our discussions, the estimates are well-based on a comprehensive system of surveys and producer prices, with good detail on the performance of some 80 activity headings.

Users would like more information on expenditure components, including quarterly estimates of household spending and capital formation, at both current and constant prices. In order to respond effectively to these requests, a commodity flow system is required. This enables capital formation to be estimated from the measures of output and imports broken down by product group. The commodity flow system will also allow estimation of some parts of household expenditure, assisted by the results of a retail sales survey giving details of the pattern of purchases by commodity and services type. Capital formation will depend on the allocation of industry output and import of capital goods. These headings can be allocated to capital formation as a proportion of the total supply, using recent supply-use framework percentages to make the allocation.

The best way to produce estimate of GDP with consistency between components of production, expenditure and income is to use a supply-use framework. The last SUT was compiled in 2006, but not published. The Twinning project aims to work with DOS to compile a new SUT table for 2011. The previous SUT was compiled for 81 industries and 81 products.

At present, the production measure of GDP is produced using the information available in the quarterly and annual national accounts sections. The economic surveys give a good picture of gross output and intermediate consumption by industry and product group. Other sources are also used to complete the supply-use tables. They include production taxes and product taxes where they differ from the recording in the economic survey system, imports and exports of goods and services made available from the Central Bank of Jordan, figures on compensation of employees, taxes etc etc.

It seems that, at present, the supply-use table section currently work relatively independently from the other production teams. It would benefit the national accounts division if the production and balancing work of supply-use was carried out in cooperation with the whole national accounts division.

GDP at fixed prices – an assessment

DOS use producer price indices (PPIs) to deflate output and intermediate consumption of production industries and components of the consumer prices indices (CPIs) to deflate output and intermediate consumption of services. Export and import prices are also available, but it is not clear if these are UVIs or price indices, and also how they are used in GDP compilation.

As set out above, the approach recommended is to derive GDP at fixed prices using the Supply-Use Table Framework. The basic structure is set out in Annex 3.

DOS collect and use PPIs and CPIs to deflate the both output and intermediate consumption, so that GDP at fixed prices can be derived. While this is the theoretically correct approach to derive GDP in volume terms, it is important that double deflation is carried out within the structure of a Supply-Use Table. It has not been possible to assess the level of detail that prices are collected during this mission and it is recommended that this is assessed during the Prices mission.

Introduction to major changes introduced with SNA2008

Following the workshop on the changes to be introduced because of the new SNA, the following seem to be the biggest issues for DoS.

- 1- Capitalisation of military spending on weapon systems will cause an increase in the level of GDP in the years following the purchase of the weapon systems, but not in the year of

purchase, compared to the previous treatment. In order to make this change, information is needed on the nature of military expenditure. This kind of breakdown is not always available, and it may be necessary to use a commodity flow approach to ensure the correct breakdown in the government final consumption, and so produce the appropriate higher estimates of government output as a sum of costs including depreciation of capital.

- 2- Goods sent abroad for processing is another SNA change which will have an effect on the national accounts. The current method is to record the imports and exports of goods for processing at their value before processing and after processing. These entries are in the balance of payments trade in goods, and also in the production account of the domestic industry. The example was given of goods imported into Jordan from a neighbouring country, processed and then exported to a third country. If there was no change of ownership at any stage, the new SNA would then show the neighbouring country exporting the processed good, and Jordan exporting a manufacturing service to this country. This would require the economic survey of Jordan to show the output of the processing industry, not with intermediate consumption of the imports and output of the processed goods, but only as the processing service. This will require a different approach in the economic survey.
- 3- Merchanting of goods which do not enter Jordan, but are traded between other countries whilst being owned by a resident of Jordan, is recorded as the export of a service in the current SNA. The new SNA requires the recording of import and export of the traded goods across Jordan borders. So the export of service will be replaced by the import and then export of the merchantable goods. It is recognised that such activities will feature in the Jordan economy.
- 4- Research and development carried out in separate establishments such as government controlled or non-profit making entities should be included in existing estimates of output. Where R&D units are treated as ancillary units serving existing enterprises in the Jordanian economy, these units must be identified and considered separately as establishments producing secondary output of R&D. A special exercise should be carried out to identify all units carrying out R&D in the economy. The first step in this would be to establish if such units are sponsored under the responsibility of a government department, and approach this department for information of location etc. The existence of an R&D association should also be explored, to establish the extent of the performance of R&D by units ancillary to production enterprises. Having established a basis for estimating the total output of R&D in the economy, it is then necessary to estimate how much of output finds its way to capital formation of intellectual property, ensuring that there is no double -counting through sub-contracting of work. Guidance is given in OECD publications on how Frascati Manual inquiries can play a part in this work. There is also a forthcoming publication from Eurostat which should be helpful.
- 5- FISIM should be implemented with the introduction of SNA08. This will require the allocation of interest receipts and payments by final and intermediate consumers, possibly by using a sectoral breakdown of loans and deposits. This will be discussed with the Central Bank of Jordan during the next mission by the experts.

3. Conclusions and recommendations

The experts completely support the twinning project aim to have Supply-Use Table balancing at the heart of both annual and quarterly GDP production. To be successful, it is recommended that all NA staff have a role in building and balancing the SUT. This may require a reorganisation of the NA team in DOS.

The Business Register project had the objective of giving DOS information on the births and deaths of enterprises to allow an annual, rather than 5 yearly, update to the Register. This is key to maintaining the quality of GDP aggregates. Can the Twinning project provide any assistance to help DOS resurrect the Business Register project?

Implementing the main changes introduced in SNA08 will be taken forward during the next mission planned for September 2014 by the consultants.

Action	Deadline	Responsible person
Arrange workshop with key partners (Min of Industry, Ministry of Revenue, Ministry of Finance and Central Bank) to set out aims and benefits of project.	End-August	Thomas
Next mission on fixed prices should start with a workshop setting out the use and application of PYPs and Laspeyres indices. The workshop should also clarify the availability of price indices.	End-February	Thomas
Estimation of the informal sector should be closely linked to the national accounts SUT framework, rather than be undertaken as a purely independent exercise.	End-March	Thomas
Translation of all survey questionnaires and guidance used in national accounts compilation.	End-April	Thomas
The experts to prepare a current and capital accounts workshop based on SNA2008 for the next mission. This will include practical advice on how to implement current and capital accounts in Jordan.	End-September	Simon and Robin

Annex 1. Terms of Reference

Component 1: National Accounts

Activity 1.2: National Account Compilation Approaches

0. Mandatory results and benchmarks for the component

- The national accounts system in Jordan updated to SNA 2008 (Apr 2015)
- The national accounts system in Jordan will cover the informal sector (Apr 2015)
- Assessment report on current situation (Jan 2014)
- Review of the GDP methodology (Apr 2014)
- Plan for how to change base year in the fixed price calculations (Jan 2015)
- Plan for how to improve the current accounts (Jan 2015)
- Present and discuss the concept of different types of agricultural accounts (Jan 2015)
- Data sources, compilation methods, and balancing in relation to supply and use tables reviewed and updated towards SNA08 principles (Apr 2015)
- Provide recommendations on how to update input-output tables (Apr 2015)
- Update the methodology for calculation the informal sector (Apr 2015)

1. Purpose of the activity

- To train the DoS staff in the methodologies used for deriving GDP
- To review the methods currently used for deriving GDP
- To discuss methods for estimating GDP at fixed prices
- To train the DoS staff in the SNA
- To introduce the DoS staff to the major changes between the ESA 1995 / SNA 1993 and the ESA 2010 /SNA2008

2. Expected output of the activity

- DoS staff trained in the different approaches used for deriving GDP
- Recommendations on how to proceed in order to estimate annual GDP using the expenditure approach at fixed prices
- Recommendations on how to proceed in order to estimate the annual GDP using the income approach at fixed prices
- Recommendations on how to proceed in order to estimate quarterly GDP using the expenditure approach in current prices as well as fixed prices
- Recommendations on how to proceed in order to estimate quarterly GDP using the income approach in current prices as well as fixed prices
- DoS staff introduces to the content of the SNA
- DoS staff introduced to the major changes occurring as part of the shift from ESA 1995 / SNA 1993 and the ESA 2010 /SNA2008
- Transfer of the in general European Union, experience concerning the shift to the SNA 2008. Including the handling of revision policies.
- A lining up of work programme for the next activity (1.11, scheduled to 17th - 20th March 2014)

Annex 2 - Programme for the mission

Time	Place	Event	Purpose / detail
Sunday, morning	Hotel / DoS	Meeting with RTA	To discuss the programme of the week
Sunday, morning	DoS	Meeting with BC Component Leader and BC Experts	Follow up on the assessment, cf. activity 1.1
Sunday, afternoon	DoS	Meeting with BC Component Leader and BC Experts	Follow up on the assessment, cf. activity 1.1 Presentation by DoS on what's currently being compiled on the three types of GDP measures, incl. of sources, classifications and methods
Monday, morning	DoS	Meeting with BC Component Leader and BC Experts	Training session: Introduction to the System of National Accounts
Monday, afternoon	DoS	Meeting with BC Component Leader and BC Experts	Training session: Introduction to the System of National Accounts
Tuesday, morning	DoS	Meeting with BC Component Leader and BC Experts	Training session: Introduction to the System of National Accounts
Tuesday, afternoon	DoS	Meeting with BC Component Leader and BC Experts	Training session: Introduction to the System of National Accounts
Wednesday, morning	DoS	Meeting with BC Component Leader and BC Experts	Follow up on the assessment, cf. activity 1.1
Wednesday, afternoon	DoS	Meeting with BC Component Leader and BC Experts	Follow up on the assessment, cf. activity 1.1 Presentation by DoS on which prices are used to derive volume measures of GDP
Thursday, morning	DoS	Meeting with BC Component Leader	Presentation of MS Experts' findings and agreement on the reached conclusions
Thursday, morning	DoS	Ad-hoc meetings	Final clarifications with BC Experts, preparation of report and presentation for BC Project Leader
Thursday, noon	DoS	Debriefing with BC Project Leader	Conclusions and decisions and their consequences for the next activity and the implied work programme for BC Experts

Annex 3. Persons met

DoS:

Mr Moawiah Alzghoul Director of National Accounts Directorate, and component leader

Annual national accounts

Amal Abu Afeefeh - Head of the Annual Accounts Division

Khairallah Almarzoug

Farhan Mohammad

Loay Alrawashdeh

Ali Zaitoun

Ayman Nasir

Input-output division

Murad Bani-Hamad

Murad Omari

Quarterly accounts division

Walid Battah - Head of the Quarterly Accounts Division

Jaber Alfazza

Walaa Gharram

Others:

Name?, Head of economic surveys

Name?, Head of agricultural surveys

RTA Team:

RTA, Thomas Olsen RTA assistant, Amal Aliah

Interpreter, Mohammad Junaidi

Twinning project leader:

AbdelWadoud Matouk

Annex 4 – Supply-Use framework

