



VIETNAM

TECHNICAL ASSISTANCE REPORT—REPORT ON THE NATIONAL ACCOUNTS MISSION

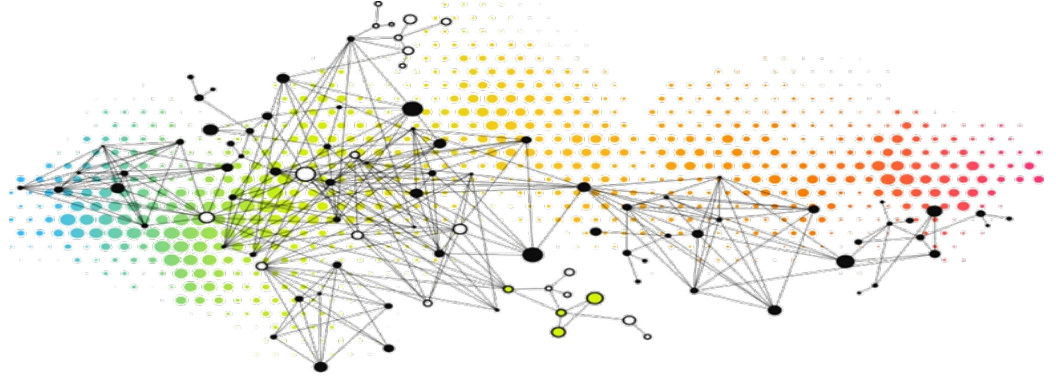
December 2019

This technical assistance report on Vietnam was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on April 2019.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: <http://www.imf.org>
Price: \$18.00 per printed copy

International Monetary Fund
Washington, D.C.



VIETNAM

MAY 2019

REPORT ON THE NATIONAL ACCOUNTS MISSION (APRIL 8–12, 2019)

Prepared by Robert Dippelsman and Emmanuel Manolikakis

The contents of this report constitute technical advice provided by the staff of the International Monetary Fund (IMF) to the authorities of Vietnam (the “TA recipient”) in response to their request for technical assistance. This report (in whole or in part) or summaries thereof may be disclosed by the IMF to IMF Executive Directors and members of their staff, as well as to other agencies or instrumentalities of the TA recipient, and upon their request, to World Bank staff, and other technical assistance providers and donors with legitimate interest, unless the TA recipient specifically objects to such disclosure (see [Operational Guidelines for the Dissemination of Technical Assistance Information](#)). Publication or Disclosure of this report (in whole or in part) or summaries thereof to parties outside the IMF other than agencies or instrumentalities of the TA recipient, World Bank staff, other technical assistance providers and donors with legitimate interest, shall require the explicit consent of the TA recipient and the IMF’s Statistics Department.

CONTENTS

Glossary	3
SUMMARY OF MISSION OUTCOMES AND PRIORITY RECOMMENDATIONS	4
DETAILED TECHNICAL ASSESSMENT AND RECOMMENDATIONS	7
A. Background	7
B. Data Enhancements	7
C. Methodological Changes	9
D. Officials Met During the Mission	11
TABLE	
1. Priority Recommendations	6
APPENDIX	
I. Best Practices for Checking Data	13

Glossary

<i>2008 SNA</i>	<i>System of National Accounts 2008</i>
GSO	General Statistics Office
SUTs	Supply and Use Tables
TA	Technical assistance
IC	Intermediate Consumption
GFCF	Gross Fixed Capital Formation
MOU	Memoranda of Understanding

SUMMARY OF MISSION OUTCOMES AND PRIORITY RECOMMENDATIONS

At the request of the General Statistics Office (GSO) of Vietnam, a technical assistance (TA) mission was conducted at the headquarters of the statistical office from April 8–12, 2019.

The purpose of the mission was to evaluate the revised estimates of GDP, to ensure that the compilation process is aligned with the *System of National Accounts 2008 (2008 SNA)* and that the methodology employed for estimation is consistent and coherent.

Comprehensive and timely national accounts estimates are important for decision-based policy making. The Vietnamese economy has been undergoing rapid structural change in recent years, with high growth rates, reform and opening of the economy, and change in the industrial structure (from agriculture to manufacturing and services). National accounts statistics are key to monitoring and understanding the economic changes, while at the same time the changes make measurement more difficult. GDP is a crucial metric used across numerous countries by policy makers and stakeholders to evaluate the performance of the economy. GDP is also used for international comparisons and as the denominator for certain key financial and leverage ratios, such as debt to GDP. It is essential that estimates of GDP are robust, and the compilation approach is transparent.

The GSO plans to release revised national accounts data in the near future, making welcome improvements. GDP should comprehensively cover all activities in the economy, the GSO is striving to improve their coverage of GDP. Following a previous mission's recommendation to increase inter-agency cooperation the GSO has signed memoranda of understanding (MOU) with ten ministries to obtain extra information. The mission commends the GSO for increasing the use of information obtained from other government agencies and for expanding coverage of the economic censuses to include more businesses. In addition, there are some revisions due to the adoption of international standards from the *2008 SNA*. The effect of the revision is an increase in GDP levels of around 22 percent, but with only minor changes in growth rates. This mission noted that these revisions follow recommendations of previous missions to implement the *2008 SNA* to cover research and development and software will be treated as part of gross fixed capital formation (GFCF).

It is particularly important to conduct outreach to public and private data users to help them to understand the reasons for the revisions. Revisions to statistics are needed to take into account changes in data sources and the economic structure. Revisions are a normal and expected part of national accounts compilation, reflecting additional information and new economic developments. With Vietnam's rapid economic change, the measurement and growth of new enterprises present particular difficulties, particularly small-scale and private enterprises. Information in press releases, detailed notes, and seminars will help to avoid confusion or criticism. In the future, the GSO needs to develop a revision strategy to be able to systematically and regularly revise their estimates. In line with best practices, the revision policy should be

transparent and have predetermined deadlines so that users will be aware of the forthcoming revisions.

The GSO would benefit from developing analytical tools to confront the range of available data and ensure that the estimates are consistent and coherent. In the national accounts, comprehensive coverage of economic activity is very important. Equally important is for the compiler to compare the different data sources to ensure that they are coherent within the framework. In the absence of detailed sequence of accounts, identities should be exploited to allow for stronger estimates that will minimize revisions once complete information sets are available. Supply and use tables (SUTs) are one such tool for ensuring the coherence of data. Living Standards Survey and household employment data should also be used to identify gaps in business surveys.

The GSO's plans for future improvements include a project on measuring the non-observed economy and production of SUTs. Vietnam has many small-scale businesses that are not registered and do not have a fixed address. Intensive identification allowed the general census to cover an additional 500,000 such enterprises operating in 2016. The proposed informal sector project to be conducted with United Nations support would use household surveys to identify further non-observed activities. SUTs have detailed balancing of output and use of products, which can be used to identify data gaps. A project is planned to develop SUTs for the year 2021. These projects could result in further revisions.

To avoid large and significant revisions in the future the GSO needs to ensure that the business register can identify emerging activities. The GSO should utilize employment data from both the labor force survey and from administrative business data and monitor growth by industry to ensure that the register is adequately capturing births and deaths of businesses.

To support progress in the above work areas, the mission recommended a detailed action plan with the following priority recommendations carrying particular weight to make headway in improving national accounts.

Table 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
May–June 2019	Release revised data in conjunction with suitable outreach to users (advance notice, reasons, size of effects, and explanations).	GSO
December 2019	To minimize future revisions, ensure processes for updating the business register include new businesses in quarterly and annual surveys to make sure they are maintained with fully representative coverage.	GSO
June 2020	Develop plans for ensuring coherence of data, including SUT reconciliation and integrating the Living Standards Survey and household employment data.	GSO

Further details on the priority recommendations and the related actions/milestones can be found in the action plan under *Detailed Technical Assessment and Recommendations*.

DETAILED TECHNICAL ASSESSMENT AND RECOMMENDATIONS

Priority	Action/Milestone	Target Completion Date
<i>Outcome: Data are compiled and disseminated using the concepts and definitions of the latest manual/guide</i>		
H	Release revised data in conjunction with suitable outreach to users (advance notice, reasons, size of effects, and explanations of methods).	May–June 2019
H	Establish a revision policy that is transparent and that will have predetermined deadlines so that users will be aware of the forthcoming revisions.	May–June 2019
H	To minimize future revisions, ensure processes for updating the business register include new businesses in quarterly and annual surveys to make sure they are maintained with fully representative coverage (with ongoing monitoring).	December 2019
H	Develop plans for ensuring coherence of data, including SUT reconciliation and integrating the Living Standards Survey and household employment data.	June 2020
M	Provide users with gross fixed capital formation composition by public/private and by type of asset.	December 2020
M	The GSO should review the content of the annual questionnaire and add additional expense detail.	December 2020
M	Remove inventory holding gains and losses from output and value added estimates.	December 2021

A. Background

1. Prior to the revision to GDP, the data sources and coverage were believed to be inadequate to provide a true reflection of a dynamic and growing economy. Despite data improvements, estimates for emerging industries lacked detail and coverage. According to the report “Rationale for Remeasuring the Size of Gross Domestic Product” prepared by the GSO (provided to the mission but not yet published), the current set of data holdings are limited and cannot fully identify or account for new activities emerging in the Vietnamese economy.

B. Data Enhancements

2. Substantial progress in inter-agency cooperation has supported improved coverage of the economy. The GSO now has more than ten MOUs with other agencies. Under the arrangement with the taxation authorities, many enterprises that had previously been omitted

from GSO surveys were identified. In addition, the Ministries of Defense and Public Security now supply aggregate data on their operations, which had previously been a serious data gap. The previous IMF mission on national accounts in August 2017 identified such data sharing with other government agencies as a top priority for improvement, so this progress is very welcome.

3. The GSO incorporated the results of two major censuses – an economic census of business for reference year 2016 and a census of agriculture for reference year 2015. The scope and breadth of these two censuses increased the number of institutional units and provided much needed information on the emerging activities of the economy. The broader coverage resulted in a very significant revision to GDP, approximately 22 percent in current prices. The bulk of the revision to GDP was due to a relatively small number of very large enterprises that had been missed by the previous census of 2012 and by the subsequent annual surveys, but there was also increased numbers of smaller enterprises. In the case of enterprises that refused to cooperate, even after intensive follow-up, to avoid downward bias, the mission recommended making estimates based on partial data from other sources (such as employment or taxes collected), where necessary in conjunction with ratios derived from similar enterprises that reported. The mission advised that the constant price growth rate for GDP should not be forced to equal the previous growth rate; such an approach may be suitable for changes in constant price base years, but not for changes in data sources.

4. These censuses provided more comprehensive coverage of the economy for 2016, however stakeholders require a consistent times series to be able to understand long-term trends. To this end, the GSO back-casted the information to 2010. Estimates were made based on the same growth rates as the old series applied to new levels. The back-casting exercise revised the GDP levels in the earlier period more significantly than the later ones due to variations in revisions and growth rates between the industries. Consequently, the GDP current price growth rates between 2010 and 2017 changed by an average of more than 0.5 percent per year.

5. The time series for earlier years are important but problematic. Unfortunately, the improved 2016 surveys do not provide a time series dimension. Lack of information about trends for the missing elements makes it necessary to make assumptions. One possibility was that there was no undercoverage of GSO surveys in 2010, but the problem gradually emerged since then. For example, this would be appropriate if coverage was complete at the time of the last benchmark survey, but there had been failure to incorporate new businesses since then. Another alternative possibility was that the rate of survey undercoverage had been a consistent problem over the whole period. (A further possibility is some discretionary adjustment intermediate between the two alternatives.) In the absence of a suitable time series indicator, and considering the causes of incomplete survey coverage, the GSO decided that a consistent rate of undercoverage over the whole period was the most plausible solution. While such an assumption is acceptable in the absence of specific information, users should be informed of the uncertainty and the GSO should be ready to explain the situation to data users.

- 6. Many users undertake long-term analysis of the economy.** They will face a discontinuity between the old (pre-2010) and new series. The GSO should be prepared to provide advice in response to queries on how to handle longer time series and consider extending the back series to earlier years. This extension should be a priority as a long and continuous series will avoid dissatisfaction among users.
- 7. The focus of the GSO has been to incorporate the new statistical information from the censuses to their annual GDP program, leaving the quarterly estimates unchanged so far.** Consequently, the GSO needs to benchmark their quarterly program to the revised annual estimates to ensure their consistency. The consistency between annual and quarterly data should be a priority as it will avoid dissatisfaction among users.
- 8. The business register should have procedures to include new businesses on an ongoing basis as they start operations.** The national accounts staff is working collaboratively with the business register staff to ensure that births of new businesses are being processed and integrated into the quarterly and annual surveys. The MOUs will enable the business register to receive monthly updates of new companies. In the past, the annual surveys were not fully representative of emerging activities and this was compounded by the fact that the Vietnamese economy has had rapid growth for small to medium-sized businesses, which can be difficult to track. If new businesses are not included on the business register and in surveys on an ongoing basis, growth rates would be understated, and large upward revisions would again be needed after the next economic censuses. To avoid future large-scale revisions and to ensure the credibility of the national accounts, it is crucial that the population framework for the annual and quarterly surveys are up-to-date and comprehensive.
- 9. Outreach to data users is an essential part of any major revision of national accounts data.** Unexplained revisions are a problem for data users and may damage the reputation of the statistical office. Outreach may take the form of both summary and detailed notes of the causes and effects, taking account the sophistication and needs of different levels of users. It should take multiple forms (on paper, by e-mail, and on websites) and include a contact point for phone and e-mail queries for dealing with any additional questions. As well as the technical note mentioned above, the GSO is already working with a television program and internal government users as part of their outreach. Users should also be informed about the prospects for further revisions as additional data and methodological improvements identified by the GSO are implemented in the future.

C. Methodological Changes

- 10. Intellectual property products should be recorded separately in capital formation.** The GSO is measuring intangible assets of research and development and software as gross fixed capital formation in line with the *2008 SNA*. This change will have a positive impact on GDP and be in line with other countries treatment of GFCF and will increase international comparability. The 2017 values were about 1.1 percent of GDP (research and development) and 0.4 percent

(software) but are expected to represent rising proportions in future. It would assist users to provide detailed GFCF by sector and by type of assets. At a minimum, a distinction between private and public GFCF by tangible and intangible assets should be made publicly available. This decomposition will be increasingly important as the Vietnamese economy continues to undergo structural change and the digital economy becomes more significant.

11. Changes in inventories should exclude holding gains and losses. The GSO does not adjust output to account for changes in prices of inventory goods. Prices have been increasing variably throughout this period. By not removing the holding gains embedded in the change between the opening and closing values of inventories, the GSO has overestimated output. The GSO calculates output as:

$$= \text{Sales} - \text{Inventories at the beginning of the period} + \text{Inventories at the end of the period}$$

However, output should be measured at the prices of the period, while sales reflect the average prices of the period, the inventory components do not. If not adjusted for national accounts purposes, they will be distorted by price effects. This can be seen in the following example. It shows that inventories have increased by 500, but this is entirely due to the increase in prices as there has been no increase in quantity.

	Quantity	Average Price	Value
Inventory January 1	25	50	1250
Sales	120	60	7200
Inventory December 31	25	70	1750

The correct valuation of output excluding holding gains and losses can be achieved by deflating them with prices that match the different timing of each of the three components. (This can be seen from the example – deflating the values by the average price for the year gives the incorrect answer that inventories have increased, while deflating each of the three components separately by the time-specific price index gives the correct answer that inventories are unchanged when measured at consistent prices.) Adjustments to remove the price effect from inventories can use varying degrees of sophistication, but a simpler method may be a suitable initial step. IMF Working Paper 03/120 “Changes in Inventories in the National Accounts”¹ provides more details.

12. The GSO will develop a plan for compiling SUTs. SUTs have detailed balancing of output and use of products and can be used to identify data gaps, inconsistencies, and incoherence in the estimates (see Appendix 1 for further elaboration). As such, SUTs will strengthen the GSO’s national accounts estimates and will provide the necessary framework to derive coherent and independent estimates of the three different measures of GDP. While the improvement in the the business register gave higher coverage, the proposed household-based United Nations project for measuring the informal sector will help identify whether gaps remain for the most difficult-to-measure units such as for the smallest street stalls or mobile operations.

¹ <https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2003/wp03120.ashx>.

As well as the cross-checking involved in SUT balancing, there should be cross-checking with other available data sources, such as fiscal, trade, population, and employment data to see if the ratios of indicators to GDP and its components behave in plausible ways. Such techniques will help identify whether the gaps that caused the current revision are emerging again in future.

13. One major obstacle to this initiative is that currently the GSO lacks timely intermediate consumption (IC) estimates. In fact, the GSO uses fixed IC/output ratios to derive its estimate of value added by industry and will update the ratios every five years. For Vietnam's economy, with many small and medium size enterprises and rapid structural change, fixed ratios to estimate value added by industry could be very unrealistic. The GSO should explore alternate data such as administrative information to obtain IC estimates by industry. Alternatively, the GSO might consider to re-design the content of the annual questionnaire and add additional expense information or request regular updates only from larger respondents.

14. Intermediate consumption ratios need to take into account the changing structure of the economy. The combination of fixed IC/output ratios for each industry in conjunction with a revision of the industrial classification could cause problems. When the industry of a respondent is reclassified, a different IC/output ratio could be applied and generate artificial changes. Additionally, for the manufacturing processing services industries use materials owned by others, and therefore have very different IC/output ratios than for manufacturers who own the materials and products.

D. Officials Met During the Mission

Name	Institution	Title
Nguyễn Bích Lâm	GSO	Director General
Nguyễn Thị Hương	GSO	Deputy Director General
Dương Mạnh Hùng	System of National Accounts Department	Director Department
Nguyễn Thị Mai Hạnh	System of National Accounts Department	Deputy Director Department
Nguyễn Diệu Huyền	System of National Accounts Department	Statistician
Tăng Thị Thanh Hòa	System of National Accounts Department	Statistician
Nghiêm Thị Vân	System of National Accounts Department	Statistician
Ngô Như Vê	System of National Accounts Department	Statistician
Hà Quang Hải	System of National Accounts Department	Statistician
Nguyễn Trung Tiến	Trade and Service Statistics Department	Director Department
Nguyễn Thu Oanh	Integral Statistics Department	Director Department
Trần Thị Thu	Integral Statistics Department	Statistician

Đỗ Thị Ngọc	Price Statistics Department	Director Department
Lê Trung Hiếu	Agriculture, Forestry and Fishery Department	Director Department
Lưu Văn Vĩnh	Foreign Statistics and International Cooperation Department	Director Department
Bùi Bích Thủy	Figures and Events Journal	Deputy Director Department
Phạm Thu Hường	Figures and Events Journal	
Phạm Đình Thúc	Industrial Statistics Department	Director Department
Trần Lan Anh	Industrial Statistics Department	Statistician
Nguyễn Văn Sơn	Statistical Legislation and Inspection Department	Deputy Director Department
Trần Tuấn Hưng	Statistics Methodology and Information Technology Department	Director Department
Trần Thị Luyến	Statistics Methodology and Information Technology Department	Statistician
Nguyễn Việt Phong	Construction and Invested Capital Statistics Department	Director Department
Vũ Thị Thu Thủy	Population and Labor Statistics Department	Director Department
Đỗ Anh Kiểm	Social-Environmental Statistics Department	Director Department
Nguyễn Thế Quân	Social-Environmental Statistics Department	Deputy Director Department

Appendix I. Best Practices for Checking Data

The SNA provides a coherent, consistent, and integrated framework that enables compilers to confront and analyze their estimates to ensure that they are consistent with all the available evidence. The framework has a logical progression of economic activities. A principal advantage of the framework is that accounts are interconnected. This permits the framework to be used as an effective tool for assessing the quality and consistency of estimates. Below are some best practices that are used to help in the estimation process.

Commodity flow: In the absence of detailed supply and use tables, a commodity flow analyses can be very effective to understand the supply and demand of key products and adjustments to source data. For example, the supply is equivalent to = production + imports + margins and taxes less subsidies of products and demand will be measured as final domestic consumption + exports + inventories. With this identity the national accountant can analyze the differences between the supply and demand and make the necessary adjustments to the estimates. In addition, this identity can also provide a reasonable estimate if one of the components is unavailable – the missing information can be residually estimated. This approach should be implemented for key and significant products.

Appendix Table 1. Commodity Flow Analysis Tool, Current Dollar

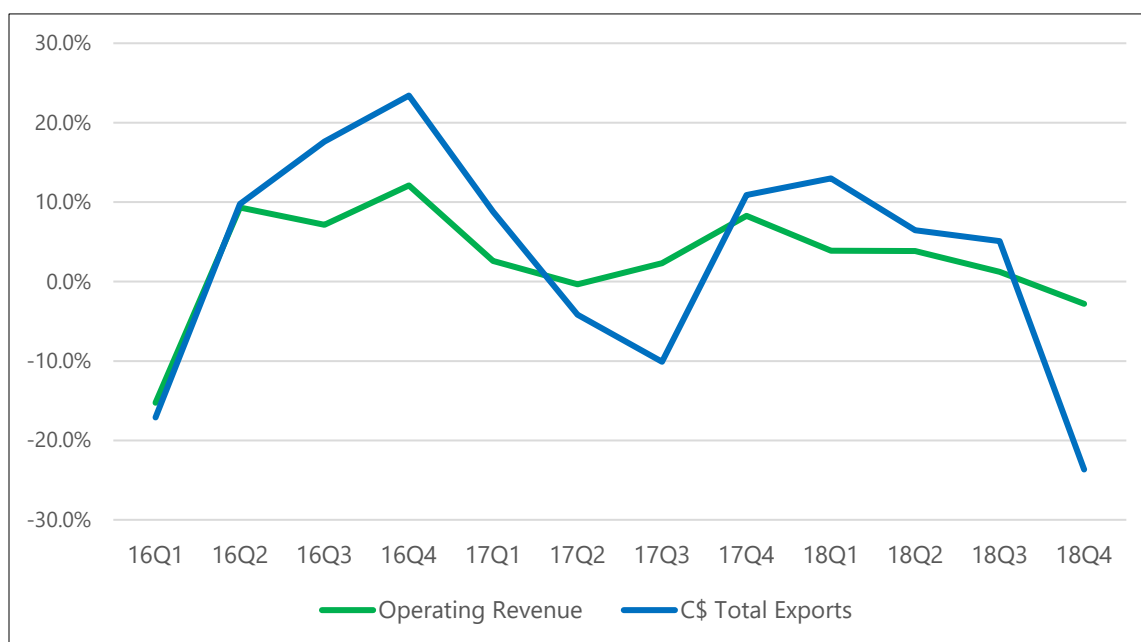
Select commodity...	171 - Electrical energy	
	2011	2016
Output	190,936,700	135,981,300
Imports of Goods	0	0
Trade margins	0	0
Transportation margins	0	0
Taxes on products	11,750,869	8,353,997
Total Supply	202,687,569	144,335,297
Intermediate consumption	118,439,843	85,936,543
Final consumption expenditures of households and NPISH	76,869,184	55,408,855
Final consumption expenditures of government	4,876,972	3,280,150
Exports of Goods	0	0
Total Use	200,185,999	144,625,549
Balance / Imbalance	2,501,571	-290,252
	1.2%	-0.2%

Appendix Table 2. The Quarterly Supply-use Analysis Tool (User-customizable Pivot Table by Major Commodity Groupings), Constant Dollar

Price	Constant		
Commodity group	SU06 - Crude oil and bituminous shale		
Flow	2018Q1	2018Q2	2018Q3
Gross Output	21,846,487	21,042,762	21,510,714
Imports	4,354,760	4,588,954	5,102,813
Margins	1,431,413	1,418,802	1,465,483
Total Supply	27,632,660	27,050,517	28,079,010
Intermediate Inputs	11,071,908	8,330,226	10,328,677
Household Final Consumption Expenditures	0	0	0
Government Final Consumption Expenditures	0	0	0
NPISH Final Consumption Expenditures	0	0	0
GFCF - Construction	0	0	0
GFCF - Machinery and Equipment	0	0	0
GFCF - Intellectual Property Products	0	0	0
Exports	17,684,545	18,275,219	17,665,369
Inventories and statistical discrepancy	40,166	216,474	8,446
Total Use	28,796,619	26,821,920	28,002,492
Net (Supply - Use)	-1,163,959	228,598	76,518

Coherence analysis: This approach enables the compiler to ensure that the different GDP measurement approaches are aligned. For example, each transaction in the SNA should have counterpart entries. The compiler should analyze these transactions to ensure they are properly reflected in the source data. Moreover, there are strong correlations amongst numerous components in the National accounts and this association should be leveraged to ensure estimates are coherent and consistent. For example, the production approach to GDP should be aligned with the expenditure approach. If output increases in an industry, say oil and gas extraction, then counterpart entries should be reflected in the expenditure-based estimates – i.e., an increase in final demand, exports and or changes to intermediate consumption. Likewise, imports of goods and services are deducted from the GDP-E calculation because in theory they are embedded in the domestic accounts as either final consumption expenditure, gross capital information or intermediate consumption.

Appendix Figure 1. Quarterly Growth in Operating Revenues of Oil and Gas Extraction Industry and Nominal Energy Exports (Oil and Gas Commodities)



For example, the graph shows the trend between operating revenue of energy producers and the nominal exports of energy products. In the most recent quarter, exports declined by more than 20 percent while revenues edged down. After analyzing the data at the firm level and factoring in survey non-response the revenues were adjusted downwards to reflect future anticipated revisions in this data source and to increase the coherence between these correlated estimates. Inventories were also considered to ensure revenues from sales and inventory additions/withdrawals (output) were still consistent with the export.

Outlier and breaks in times series detection and validation; The detection of outliers and breaks in time series and subsequent validation is a logical extension or pre-condition for first two analytical approaches. On one hand, coherence and commodity flow analysis may reveal data issues that are due to a small number of relatively extreme observations. On the other hand, detecting and validating these observations helps facilitate the analysis. Usually an automated system is used to flag questionable data points and order them according to a quantitative measure of the degree of their impact (on a given commodity, industry, etc.). This process can also be done visually with certain types of visualizations and graphing tools. Once these items are identified analysts can investigate to determine whether the values or movements are valid and provide documentation of their decisions.