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Main revisions and benchmarking – policy and practice**Developing national accounts revision policy in Armenia****Prepared by the Statistical Committee of Republic of Armenia***Summary*

The desire to publish timely national accounts indicators in the absence of complete source data leads to the need to subsequent revisions. Statistical offices should strike a balance between the data timeliness and quality. This paper provides an overview of the revision and publication policy for quarterly and annual national accounts in the Republic of Armenia. It will also address the revision and benchmarking of the monthly indicator of economic activity and directions to improve the revision process in line with recent requirements.

I. Developing national accounts revision policy in Armenia

1. Until 2012, regular revisions to the national accounts of Armenia were related to implementation of new classifications, methodological changes, changes in balance of payments data, or incorporation of census data.
2. Since 2012, the European Neighbourhood and Partnership Instrument "Support to the Statistical Committee of Armenia" within the framework of the "Improving the integrity of the Gross Domestic Product" component of the TWINING program has resulted in developing revision policy and revision schedule for the national accounts indicators of Armenia in accordance with the practices of the European Union.
3. Revisions of Gross domestic product (GDP) components are carried out according to an established schedule, which is the following:
 - (a) Quarterly data:
 - (i) first estimate, 51/53 and 65/67 days after the reference quarter,
 - (ii) second estimate: in the beginning of May after the reference year; and
 - (iii) third estimate: in the beginning of May of the second year (after the reference year).
 - (b) Annual data:
 - (i) first estimate, 51/53 and 65/67 days after the reference year,
 - (ii) second estimate: in the beginning of May after the reference year, and
 - (iii) third estimate: in the beginning of May of the second year (after the reference year).
4. Release calendars for statistical publications (data) are included in the Annual Statistical Programs approved by the State Council on Statistics of the Republic of Armenia. The Annual Statistical Program is approved within one month after the approval of the state budget by the National Assembly of the Republic of Armenia. The Statistical Program for 2024 was approved by Resolution 67-N of the State Council on Statistics of the Republic of Armenia dated December 14, 2023. The Statistical Program for 2024 is posted at the website of the Statistical Committee of Republic of Armenia (Armstat) at: <https://www.arlis.am/DocumentView.aspx?docID=187401>
5. The Calendar of Statistical Publications is posted at Armstat website: https://www.armstat.am/file/calendar/2024-i_Oracuyc_am.pdf
6. An advance release calendar which gives one quarter ahead notice of the precise release dates is also disseminated via IMF's Data Dissemination Bulletin Board: <https://armstat.am/nsdp/arc/>
7. Data are released simultaneously to the public through press releases and publications (The Socioeconomic Situation of the Republic of Armenia), and on the official website.

Table 1
GDP revision timetable for 2024

Name of the published indicator	Publication date	Publication of new data		Reviewed data	Place and Name of publication
		Quarterly	Annual		
GDP production side by types of activities	February 20 2024	IV quarter of 2023	2023	All previous quarters of 2023	“Press Releases, section, Databases” on the Armstat official website
	March 5			All quarters of 2022	“Socio-economic Situation of the Republic of Armenia” monthly informational reports

Name of the published indicator	Publication date	Publication of new data		Reviewed data	Place and Name of publication
		Quarterly	Annual		
GDP expenditure side by expenditure components	February 20 2024	IV quarter of 2023	2023	All previous quarters of 2023	“Press Releases, section, Databases” on the Armstat official website
	March 5			All quarters of 2022	“Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP production side by types of activities, expenditure side by expenditure components, generation of income side by income components (Calculated based on the reported annual data of the year t-2)	May 6 2024	-	2022 2023	From I quarter of 2022 to IV quarter of 2023 based on the reported annual data of 2022	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
	May 21, June 5 2024	I quarter of 2024	-	All quarters of 2023	“Press Releases,, section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP expenditure side by expenditure components	May 21, June 5 2024	I quarter of 2024	-	All quarters of 2023	“Press Releases, section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP production side by types of activities, expenditure side by expenditure components based on the balance of payments revised data for year t-1 and other revisions	August 20, September 5 2024	-	-	I quarter of 2024 and all quarters of 2023 based on the balance of payments revised data and other revisions	“Press Releases, section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP production side by types of activities	August 20, September 5 2024	II quarter of 2024	-	I quarter of 2024 All quarters of 2023	“Press Releases, section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP expenditure side by expenditure components	August 20, September 5 2024	II quarter of 2024	-	I quarter of 2024	“Press Releases. section, Databases” on the Armstat official website

Name of the published indicator	Publication date	Publication of new data		Reviewed data	Place and Name of publication
		Quarterly	Annual		
				All quarters of 2023	“Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP production side by types of activities	November 20, December 5 2024	III quarter of 2024	-	Previous quarters of 2024 All quarters of 2023	“Press Releases section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP expenditure side by expenditure components	November 20, December 5 2024	III quarter of 2024	-	Previous quarters of 2024 All quarters of 2023	“Press Releases, section, Databases” on the Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports

8. The National accounts revision timetable for 2024 is available at the following address: https://www.armstat.am/file/Timetable/Timetable_2024_en.pdf

9. The publication of short-term indicators in the absence of complete statistical data leads to the need of revisions. National accounts data revision is mandatory component of the production process of macroeconomic statistics. In this regard, it is very important to find an acceptable balance between the timely presentation of primary national accounts data and their quality, that is the size of the subsequent revisions.

10. The short-term Armenian national accounts data is in high demand. This is due to the fact that they provide timely repindication of the development of the country's economy and are the basis for making the right decisions for macroeconomic policymakers. But this is also the main challenge as publishing timely short-term indicators reduces accuracy and requires further revisions.

11. The main reasons for revising national accounts are updates in the source information, integration of new previously unavailable data, methodological changes, changes in applied classifications, corrections of errors.

12. Release calendars for statistical publications (data) are included in the Annual Statistical Programs approved by the State Council on Statistics of the Republic of Armenia. In addition, revisions could be carried out in case of significant methodological changes and changes/revisions in balance of payments data.

13. The Armenian National Accounts, in line with international practice, are being regularly revised. This process involves regular and major revisions.

A. Regular revisions

14. Regular revisions are made on annual or quarterly basis. Those revisions are made via adjustments of data for each quarter. Generally, the quarterly data for the current year may be reviewed during each next quarter, while all quarters are also subject to revisions when annual data for the respective year are compiled.

Table 2
The structure of Regular Revisions

Name of the published indicator	Publication date	Publication of new data		Data Revision	Name and place of Publication
		Quarterly	Annual		
GDP by activity	60th day of the current (t) year	Q4 (t-1)	t-1	1. All quarters of year (t-1) 2. All quarters of year (t-2)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by expenditure components	90th day of year (t)	Q4 (t-1)	t-1	1. All quarters of year (t-1) 2. All quarters of year (t-2)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by activity, income and expenditure components (calculated by 3 methods) based on the reported annual data of the year (t-2)	End of April of year (t)	-	t-2	From Q1 (t-2) to Q4 (t-1) based on reported annual data of year (t-2)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by activity	End of May of year (t)	Q1 (t)	-	All quarters of year (t-1)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by expenditure components	End of June of year (t)	Q1 (t)	-	All quarters of year (t-1) Year (t-1) and all quarters of (t-1) based on final data of balance of payments	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by activity	End of August of year (t)	Q2 (t)	-	1. Previous quarter Q1 (t) 2. All quarters of year (t-1)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by expenditure components	End of September of year (t)	Q2 (t)	-	1. Previous quarter Q1 (t) 2. All quarters of year (t-1)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports
GDP by activity	End of November of year (t)	Q3 (t)	-	1. Previous quarters Q1 (t) and Q2 (t) 2. All quarters of year (t-1)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports

Name of the published indicator	Publication date	Publication of new data			Name and place of Publication
		Quarterly	Annual	Data Revision	
GDP by expenditure components	End of December of year (t)	Q3 (t)	-	1. Previous quarters Q1 (t) and Q2 (t) 2. All quarters of year (t-1)	„Databases” of Armstat official website “Socio-economic Situation of the Republic of Armenia” monthly informational reports

B. Major Revisions

15. Major revisions include the whole National Accounts statistical system and cover longer time series. Major revisions of the National Accounts Statistics (NAS) are done in coordination (supported by respective agreements) with main revisions of other macroeconomic statistics such as balance of payment, external debt, international investment position, government finance statistics.

16. The implementation of these revisions requires close coordination of the work between the persons responsible for compilation the National Accounts and other macroeconomic statistics.

17. The major revisions in the National Accounts of Armenia took place in connection with the implementation of the System of National Accounts (2008 SNA), after completion and incorporation of the census data, as well as after the agricultural census.

Table 3
The Structure of Major Revisions

<i>Major Revisions</i>		
	Special revisions	Regulated (planned) revisions
Description	Due to methodological changes (for example, implementation of the new Statistical classification of economic activities (NACE), 2008 SNA, European System of Accounts 2019 (ESA 2010), Balance of Payments Manual, sixth edition (BPM6), etc.)	As a result of change or update of data sources (once every 5-10 years) (as a result of surveys, censuses, or using other estimation methods).
Governance	The process should be regulated by working group with participants from National Statistical Service and responsible persons for administrative statistics based on the relevant timetable.	The process should be regulated by a working group with participants from National Statistical Service and responsible persons for administrative statistics based on a concrete timetable.
Depth	Possible recalculation of the time series	
Timing	Agreed timetable applicable for all statistical systems.	Agreed timetable applicable for all statistical systems. Revision years should end with 0 or 5. Implementation years should end with 4 or 9.
Scope	Annual and quarterly national accounts, annual and quarterly balance of payments, monetary financial statistics, international investments position, external debt, government finance statistics, etc.	

18. Source: <https://www.armstat.am/file/doc/99474138.pdf>

C. Quarterly-to-Annual Benchmarking

19. Since 2009 quarterly GDP data in Armenia are benchmarked with annual GDP estimates using the Denton method. Now it is practically done using EXCEL's XLPBM function.

20. Benchmarking addresses the problem of combining high-frequency series (e.g., quarterly data) with low-frequency series (e.g., annual data) into a consistent time series. The higher- and lower-frequency data generally have similar trends but often show different levels and need to be made temporally consistent. Because low-frequency data are usually more comprehensive and accurate than high-frequency data, the high-frequency series is benchmarked to the low-frequency series.

21. The three main objectives of a standard quarterly benchmarking are:

- (a) Evaluate quarterly data that is temporally consistent with an existing benchmark (usually annual national accounts data); that is, to ensure that the sum (or average) of the quarters equals the benchmark;
- (b) maintain short-term (quarterly or monthly) movements in the indicator as much as possible within the constraints provided by the benchmark (usually annual national accounts data);
- (c) ensure that the sum of the four quarters of the current year for the forward series is as close as possible to an unknown future benchmark (usually annual national accounts data).

22. The ideal benchmarking method for quarterly national accounts should be able to meet all three objectives.

23. The main advantages of benchmarking are:

- (a) Improvement in the information content of the high-frequency indicator by incorporating the lower-frequency benchmark information;
- (b) removal of inconsistencies in the final results for different series (e.g., annual and quarterly national accounts estimates) that would cause confusion or inconvenience to data users;
- (c) providing a process to assess how well an indicator is representing the target series, with a view to identifying possible problems.

D. Policy review and dissemination of IEA data

24. Following the recommendations of experts from IMF, EU (incl. Eurostat) the calculations of monthly GDP indicator was discontinued on January 1st, 2011. Instead, starting January 2011 the net monthly index of economic activity (IEA) is calculated on a monthly basis.

25. The up-to-date information is published on the 25th day following the reference period. Monthly publication is made on the 35/36 day following the reference period, while the annual data is published in the fourth quarter following the reference period.

26. Data are published according to the schedule of annual publication programs and no delays from defined deadlines have been recorded.

27. The possible IEA data inaccuracy may be accounted for by inaccuracy of discrete data received from different sources.

28. On a quarterly basis the IEA trends are compared with the national accounts production indicator trends.

29. The IEA absolute values are reviewed once a year in accordance with the annual IEA schedule. The changes in the GDP weights serve as a basis for the review.

30. Taking into consideration that the first GDP estimates are available 51/53 days after the end of the year, and starting 2013 65/67 days after the end of the year, for the first three months of the current year the IEA is calculated based on the (evaluated reference year) GDP weighted data which are later reviewed based on the GDP weights of the previous year, when these data become available at the beginning of May.

E. Summary

31. The desire to publish data from national accounts as soon as possible after the end of the reporting period based on incomplete statistical information inevitably leads to the need for subsequent adjustment of estimates. The publication of short-term indicators in the absence of complete statistical data leads to the need to revise them.

32. National accounts data revision is a mandatory component of the production process of macroeconomic statistics. In this regard, it is very important to find an acceptable balance between the timely presentation of primary national accounts data and their quality, that is the size of their subsequent revisions.

33. There should be efforts to minimize the differences between published preliminary national accounts and balance of payments data.

34. Users need to be informed about the policy for publication and revision of national accounts, as well as the reasons and extent of the revisions.

35. It is important to explain to the public the essence of methodological changes and their impact on the revision of macroeconomic statistics indicators.
