

**Technical Note and Announcement:  
Quarterly Estimates of GDP for October-December 2023  
(Second Preliminary Estimates)**

**Technical Note:**

**(1) Major Factors of the Revision from the First Preliminary Estimates to the Second Preliminary Estimates**

The regular revision through incorporating newly available source statistics replaces the first preliminary estimates by the second preliminary estimates and its major factors are as follows.

<Original Series>

➤ Private Non-Residential Investment

First Preliminary: Estimates for the latest quarter are based on supply-side source statistics.

Second Preliminary: Estimates for the latest quarter integrate supply-side and demand-side source statistics, since demand-side statistics such as *Quarterly Financial Statements Statistics of Corporations by Industry* (Ministry of Finance) have become available.

➤ Change in Private Inventories

First Preliminary: Estimates of “Materials and Supplies” and “Work-in-Progress” (nominal and real original series) for the latest quarter are provided by time-series projection with the ARIMA model used in the seasonal adjustment.

Second Preliminary: Estimates of “Materials and Supplies” and “Work-in-Progress” for the latest quarter incorporate *Quarterly Financial Statements Statistics of Corporations by Industry*.

➤ Other addition and revision of source statistics

First Preliminary: If any source statistics are not yet available for any months in the latest quarter, extrapolation is conducted. If preliminary figures are available but final figures are not, the former are incorporated. Estimates incorporate source statistics which are available on the day *Balance of Payments (Preliminary)* for the third month of the latest quarter are released.

Second Preliminary: If some source statistics have become available or been replaced by fixed estimates or revised for some reason, they are updated. Estimates incorporate source statistics which are available on the day *Quarterly Financial Statements Statistics of Corporations by Industry* for the latest quarter are released.

### <Seasonally Adjusted Series>

Seasonally adjusted series are revised from January-March 1994 (both nominal and real), since the seasonal adjustment is conducted with the latest estimates of original series updated as above.

With regard to the outlier in the preliminary estimates (from January-March 2023), provisional dummies are set in case that the estimated value is out of the forecast range of X-12-ARIMA. More specifically, in each period from January-March 2023, additive outlier (AO) is applied on the period if the estimated value of original series falls outside the 99% confidence interval of the forecast series starting from the previous period.

The methodology of the second preliminary estimates, including the above, is changed based on the following announcement.

[https://www.esri.cao.go.jp/sna/data/reference1/siryuu/2024/pdf/announce\\_20240228.pdf](https://www.esri.cao.go.jp/sna/data/reference1/siryuu/2024/pdf/announce_20240228.pdf)

## (2) Other Issues

- Supply-side and demand-side estimates in the estimation process of Private Non-Residential Investment in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates)

In the estimation process of Private Non-Residential Investment for October-December 2023 in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates), the supply-side estimate of quarter-to-quarter percent change is 2.7% (nominal original series) based on supply-side source statistics and the demand-side estimate of quarter-to-quarter percent change is 12.7% (nominal original series) based on demand-side source statistics such as *Quarterly Financial Statements Statistics of Corporations by Industry*.

- Estimates of Change in Private Inventories by four categories in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates)

Estimates of Change in Private Inventories by four categories in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates) are as follows (real seasonally adjusted series, annualized):

( Billions of Chained (2015) Yen )

	2022/ 10-12	2023/ 1-3	4-6	7-9	10-12	Contributions to Change in Real GDP at 2023/10-12 (%)
Change in Private Inventories	2,076.6	4,368.4	3,655.4	993.9	279.1	-0.1
Materials and Supplies	656.4	749.4	1,468.9	453.9	-45.5	-0.1
Work-in-Progress	223.4	2,217.3	-438.8	-321.5	-643.5	-0.1
Finished Goods	327.7	183.5	1,096.7	-351.1	-222.8	0.0
Wholesale and Retail Trade	862.5	1,373.1	1,372.2	1,208.8	1,272.8	0.0

- Estimates of real seasonally adjusted series of Change in Private Inventories (“Materials and Supplies” and “Work-in-Progress”) in Quarterly Estimates of GDP for January-March 2024 (First Preliminary Estimates)

Change in Private Inventories (“Materials and Supplies” and “Work-in-Progress”, real seasonal adjusted series, annualized) for January-March 2024 are projected as 296.9 billion yen (349.9 billion yen as quarter-to-quarter difference) for “Materials and Supplies” and 58.3 billion yen (699.0 billion yen as quarter-to-quarter difference) for “Work-in-Progress”, by the ARIMA model based on the information incorporated in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates).

It should be noted that those figures are not continuous to the real seasonally adjusted series in Quarterly Estimates of GDP for October-December 2023 (Second Preliminary Estimates) since those are seasonally adjusted up to January-March 2024 after the projection of real original series for January-March 2024 with the ARIMA models. In addition, those figures for January-March 2024 may be revised in Quarterly Estimates of GDP for January-March 2024 (First Preliminary Estimates) since the estimates up to October-December 2023 will be updated by the revision of source statistics etc.

## **Announcement:**

### **Release Schedule of the Quarterly Estimates of GDP**

**First Preliminary Estimates for January-March 2024:**

8:50 A.M. JST, Thursday, May 16, 2024.

**Second Preliminary Estimates for January-March 2024:**

8:50 A.M. JST, Monday, June 10, 2024.

**First Preliminary Estimates for April-June 2024:**

8:50 A.M. JST, Thursday, August 15, 2024.

**Second Preliminary Estimates for April-June 2024:**

8:50 A.M. JST, Monday, September 9, 2024.

**First Preliminary Estimates for July-September 2024:**

8:50 A.M. JST, Friday, November 15, 2024.

**Second Preliminary Estimates for July-September 2024:**

8:50 A.M. JST, Monday, December 9, 2024.

**First Preliminary Estimates for October-December 2024:**

8:50 A.M. JST, Monday, February 17, 2025.

**Second Preliminary Estimates for October-December 2024:**

8:50 A.M. JST, Tuesday, March 11, 2025.

The above schedule may be changed due to changes in the release schedule of source statistics etc.