REVISION OF ISRAEL NATIONAL ACCOUNTS DATA

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It's All in the Numbers!

Introduction

- ■ There is big demand for national accounts data with high quality and timeliness .
- ■ National accounts:
- ✓ describe economic development of the country
- ✓ are the basis for decision making when setting a macroeconomic policy
- ✓ play an important role in the current economic regulation.
- ■ Trade-off between the two requirements: ensuring timeliness may lead to reduced accuracy of the estimates and need for subsequent revision.
- ■ Overcoming this trade-off is a challenge for producers of macroeconomic statistics.

Reasons for Data Revision

■ Main reasons for national accounts revisions:

✓ update of the used information

✓ integration of new previously unavailable data

✓ methodological changes

✓ changes in adopted classifications

✓ correction of errors.

■ The analysis of the national accounts revision process includes two indicators:

➢ timeliness (first release)

➢ consistency of the published estimates (revision of the estimates).

Revision Process Transparency

- CBS of Israel has set and published a statistics revision policy.
- Characteristics of statistics revision:
  - ➤ date of revision
  - ➤ reasons for revision
  - ➤ frequency of updates.
- The adopted revision policy for national accounts is maintained for a long period.
- Historical information related to publication (revision) of national accounts data is maintained and made available to the public.

Revision Analysis Methods

- For analyzing the revision of national accounts data, the OECD methodology is used.

- It includes a wide range of indicators for evaluation of the size of revision and is presented in the following publications:

1. Ahmad, N., Bournot, S., Koechlin, F. (2004), "Revisions to quarterly GDP estimates – a comparative analysis for seven large OECD countries", OECD Paper.
2. Di Fonzo, T., (2005), "Revisions in quarterly GDP of OECD countries", paper presented at the OECD Working Party on National Accounts, Paris, October 2005.
3. McKenzie, R., Adam, Z., (2007), "Revisions in Quarterly GDP of OECD countries: an Update", paper presented at the Working Party of National Accounts, October 2007.
4. Zwijnenburg, J., Ribarsky, J., Raso P., and Kim E.J. (2014), "Revisions in quarterly GDP of OECD countries: An update", Paper presented at the Working Party on National Accounts, November 2014.

Revision Size Indicators (1)

▪ The following indicators are used:

❖Revision – R

$$R_t = L_t - P_t$$

where:

L_t -   is the latest (or later) estimate of period t,

P_t - is the first (or earlier) estimate of period t.

❖ Mean Revision

for quantity n of observations t:

$$MR = \frac{1}{n}\sum_{t=1}^{n}(L_t - P_t)$$

Revision Size Indicators (2)

❖ Mean absolute revision – MAR:

$$MAR = \frac{1}{n}\sum_{t=1}^{n}|L_t - P_t|$$

❖ Relative mean absolute revision – RMAR:

$$RMAR = \frac{\sum_{t=1}^{n}|L_t - P_t|}{\sum_{t=1}^{n}|L_t|}$$

Time Series to be Analyzed

■ Here, the revisions of the following quarterly and annual time series are considered:

❖ Gross Domestic Product – GDP

❖ Private Consumption Expenditure – PCE

❖ General Government Consumption Expenditure – GGCE

❖ Gross Fixed Capital Formation – GFCF

❖ Export of Goods and Services – EG&S

❖ Import of Goods and Services – IG&S.

Publication of Quarterly Data

- Quarterly national accounts are designed to provide timely and, to the extent possible, accurate information on the current state of the economy with a view of adjusting the existing economic policy.

- Expenditure approach – three estimates:

  ➢ first estimate – 45 days after the end of the quarter

  ➢ second and third estimates – 30 days after the previous one (75 and 105 days after the end of the quarter).

- Production approach – two estimate:

  ➢ first estimate – 75 days after the end of the quarter

  ➢ second estimate – 30 days after the end of the first one (105th day).
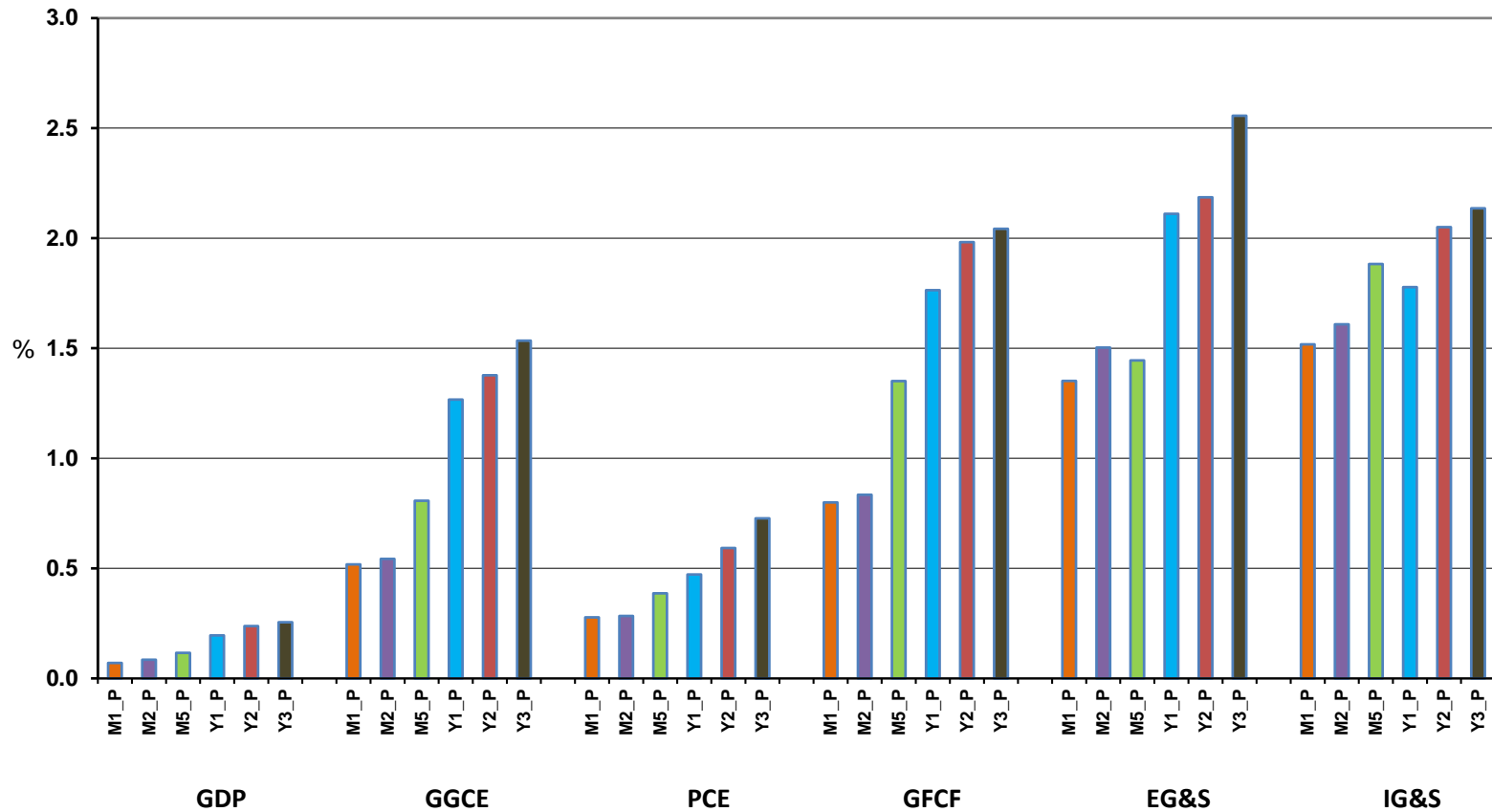
Revisions of Quarterly Estimates

- Data Bank: a history of publications of quarterly national accounts from Q1, 2004 to Q4, 2016.

- Here, the seasonally adjusted quarterly time series are considered.

- For comparative analysis of quarterly estimates of national accounts, the *parameter volume change (*economic growth rate) of the current quarter to previous quarter is used.

- The revision size is determined as the difference between the estimates of the volume change for a certain category of economic indicator for each reporting quarter, published at different times.
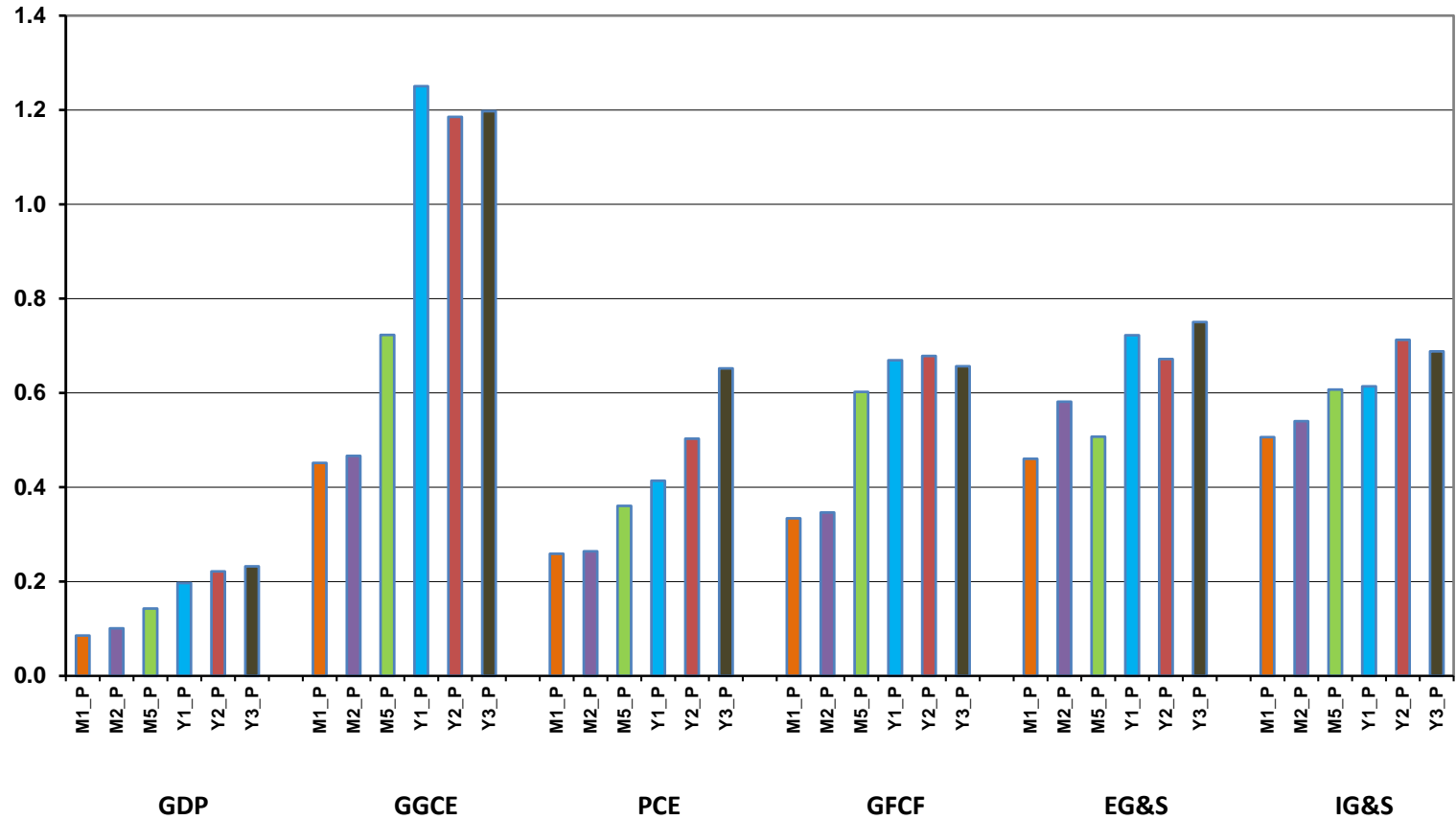
Revision of First Estimate of Quarterly National Accounts

- First estimate is based on incomplete source information (about 70%) which is supplemented by the imputations based on statistical methods.

- When missing data becomes available it replaces the imputations done previously – this is the main reason for revision of the indicators 1-2-5 months after the first publication.

- Afterwards, the revision is due to the receiving of revised and more detailed data coming from statistical surveys, which are becoming available 1-2 years after the first publication.

- At this stage and in subsequent stages, methodological changes are made and have a significant impact on the national accounts figures.

Mean Absolute Revision of the First Estimate
of Quarterly National Accounts

Relative Mean Absolute Revision of the First Estimate of Quarterly National Accounts

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Revision of Related Estimates of Quarterly National Accounts

- The revision process of quarterly national accounts is gradual in accordance with the adopted policy of publication and updating of statistical information.

- At the same time, each new revision of the quarterly indicators is based on the previous publication.

- Analyzing the revisions of quarterly national accounts figures for each subsequent publication as compared to the previous one allows identifying and evaluating the waves of data updating process.

Mean absolute revision between related estimates of quarterly national accounts
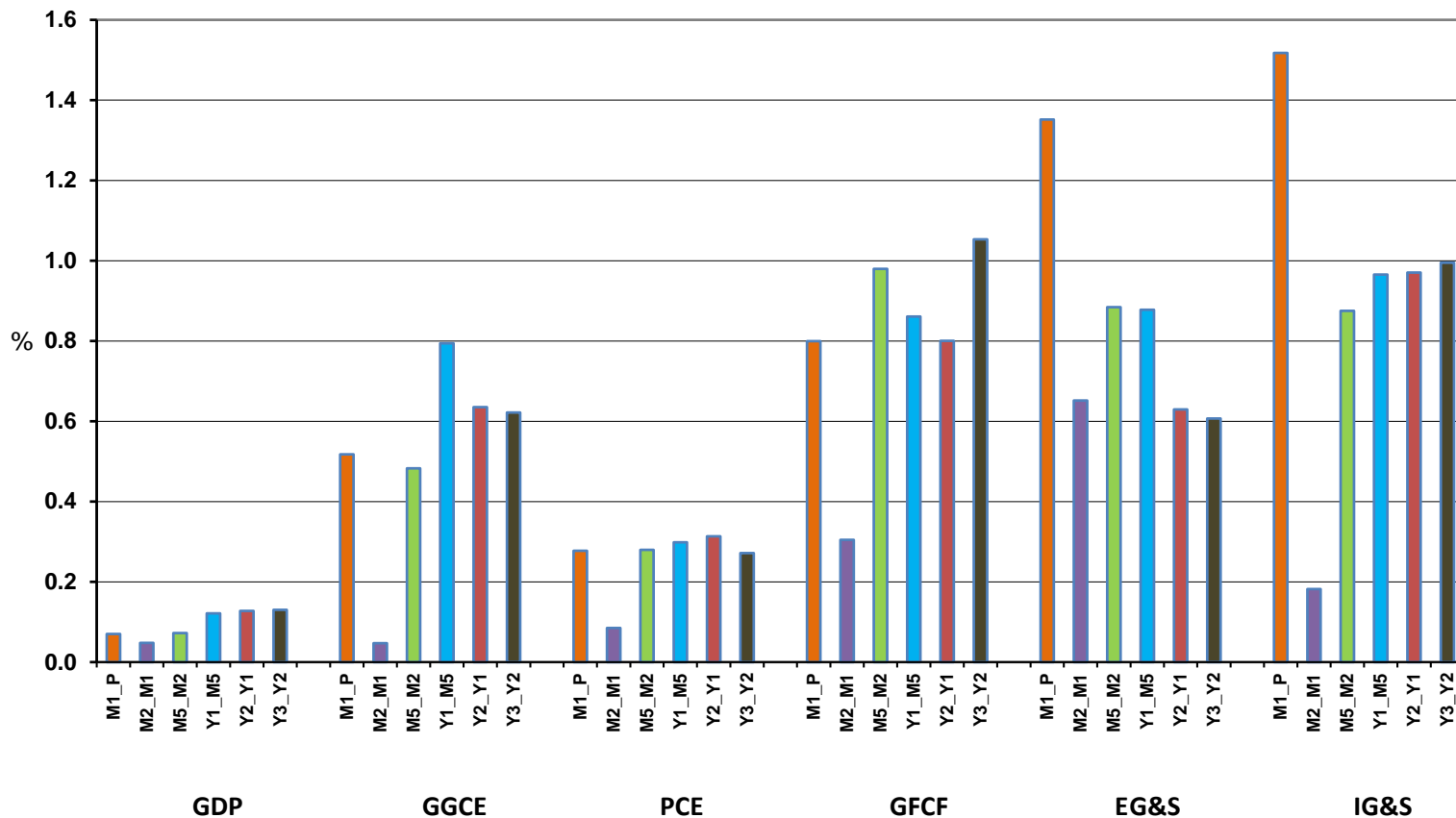
Relative mean absolute revision between related estimates of quarterly national accounts
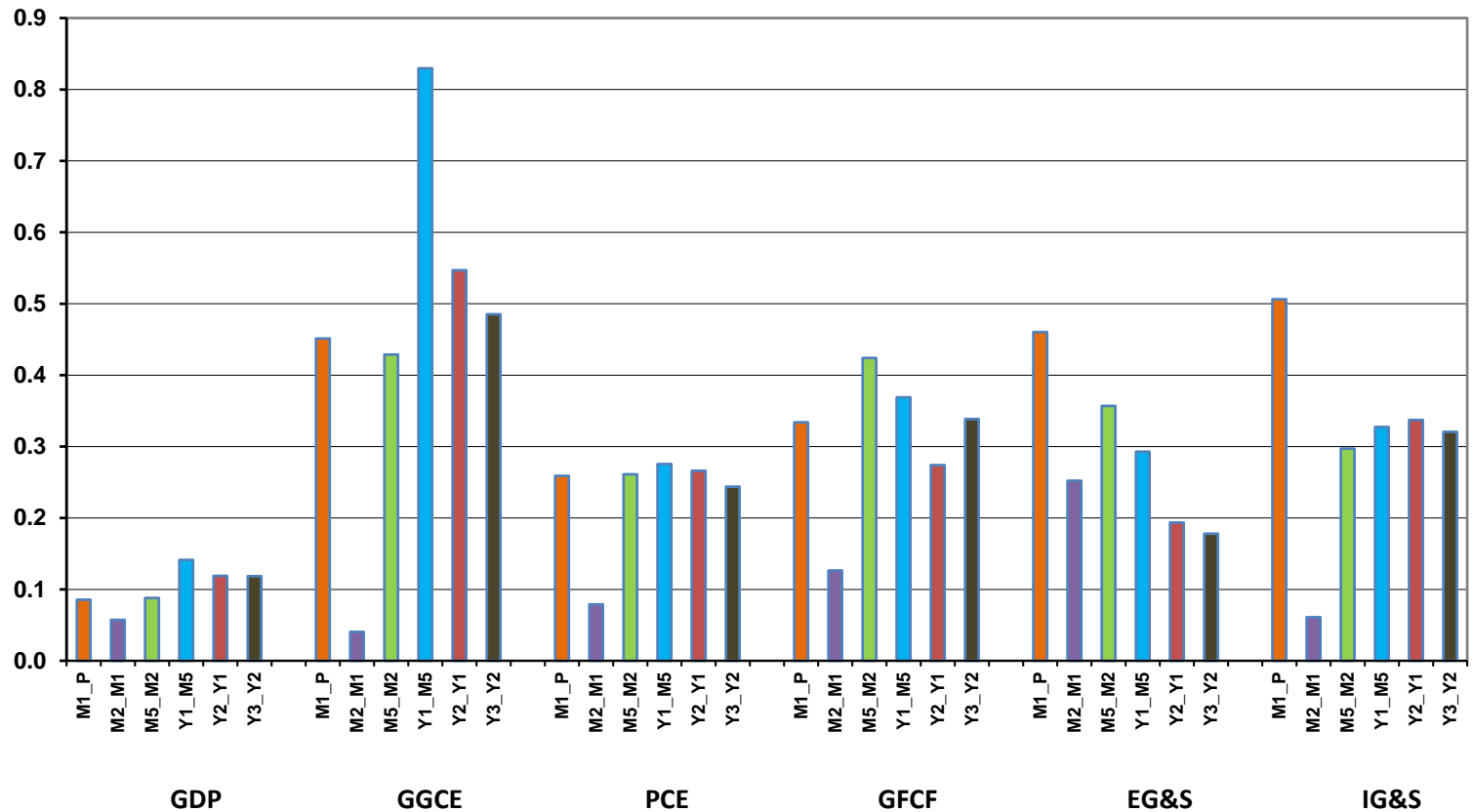
Publication of Annual Data

- First annual estimate:
  - ✓ late December of the reporting year
  - ✓ based on statistics for 9-11 months.
- Second annual estimate:
  - ✓ mid-March of the following year
  - ✓ based on statistics for 12 months.
- Third annual estimate:
  - ✓ mid-August of the following year
  - ✓ revision of the national accounts data for the previous years is performed at the same time (if necessary up to 1995):
    - integration of the results of statistical surveys
   - introduction of methodological changes.

Revision of Annual Estimates

■ Data Bank: history of publications of estimates of Gross Domestic Product and its main components, reflecting the economic performances of the country from 1998 to 2015.

■ For analyzing revision of annual estimates of the national accounts, such *parameter as a volume change (*economic growth rate) has been adopted, which is noted in this year as compared to the previous year.

■ Revision is determined as a difference between the estimates of a volume change for a certain category of economic figures for each reporting year, published at different times.
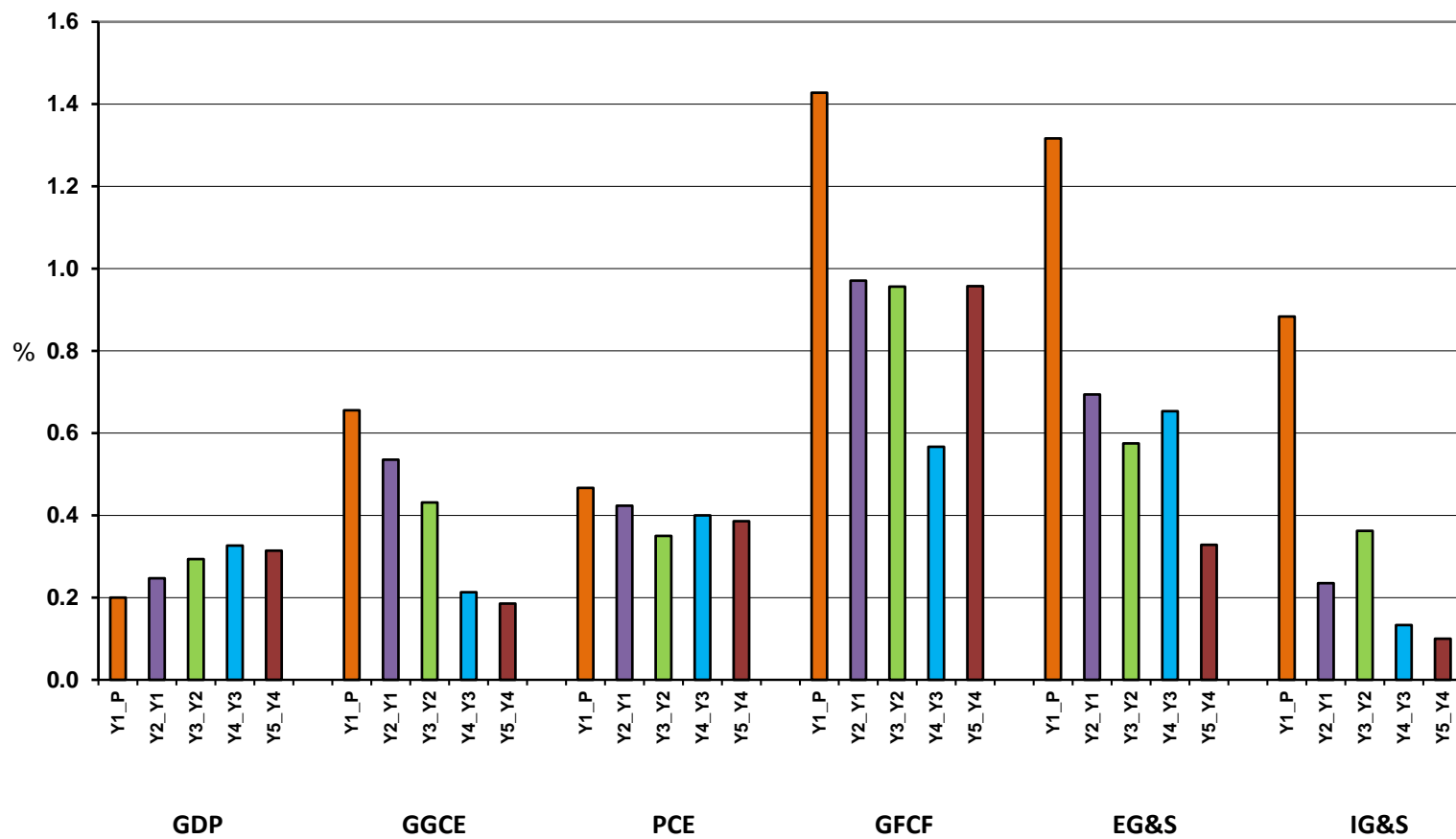
**Mean absolute revision of first estimates of annual national accounts**
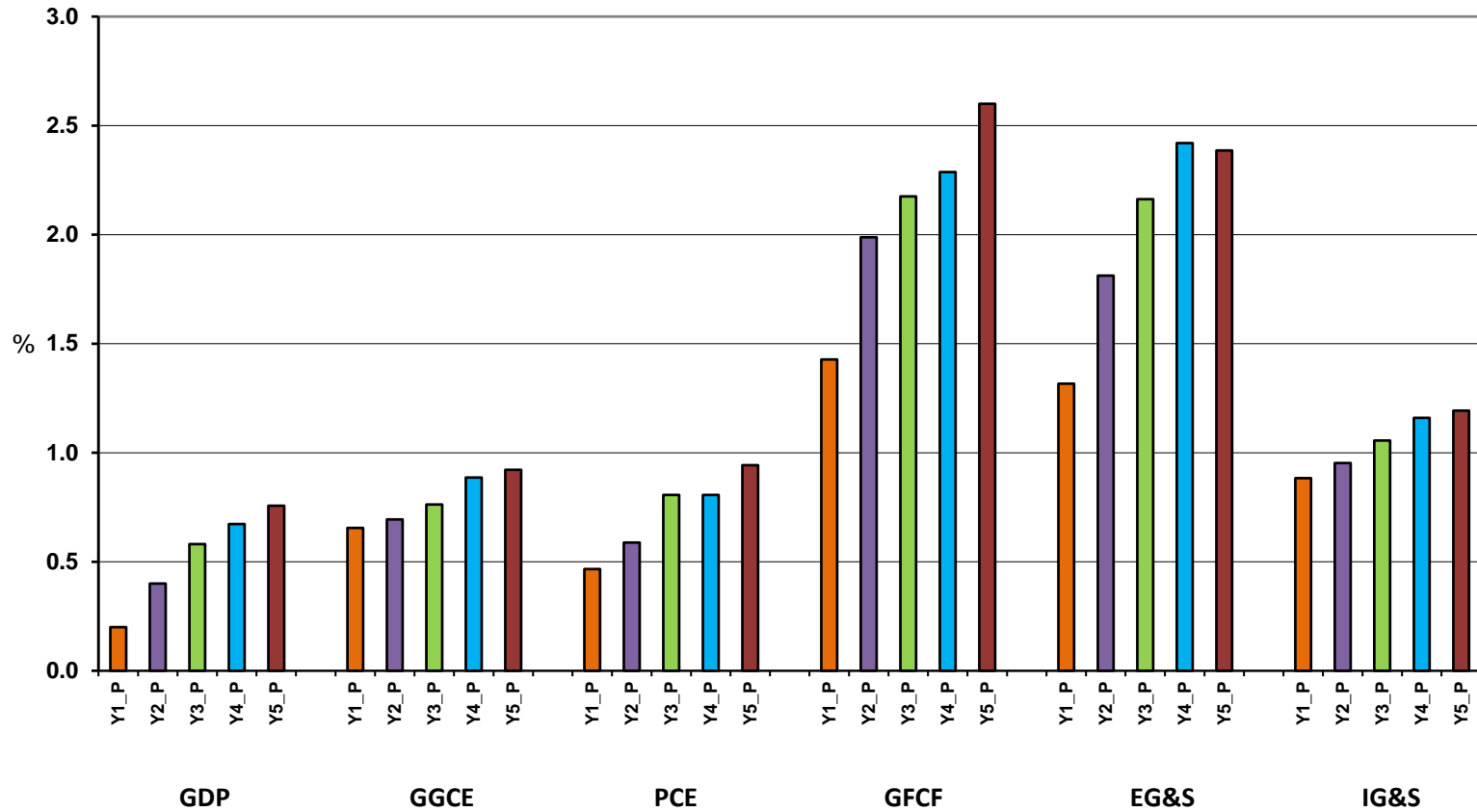
Relative mean absolute revision of first estimates of annual national accounts

**Mean absolute revision between related estimates of annual national accounts**

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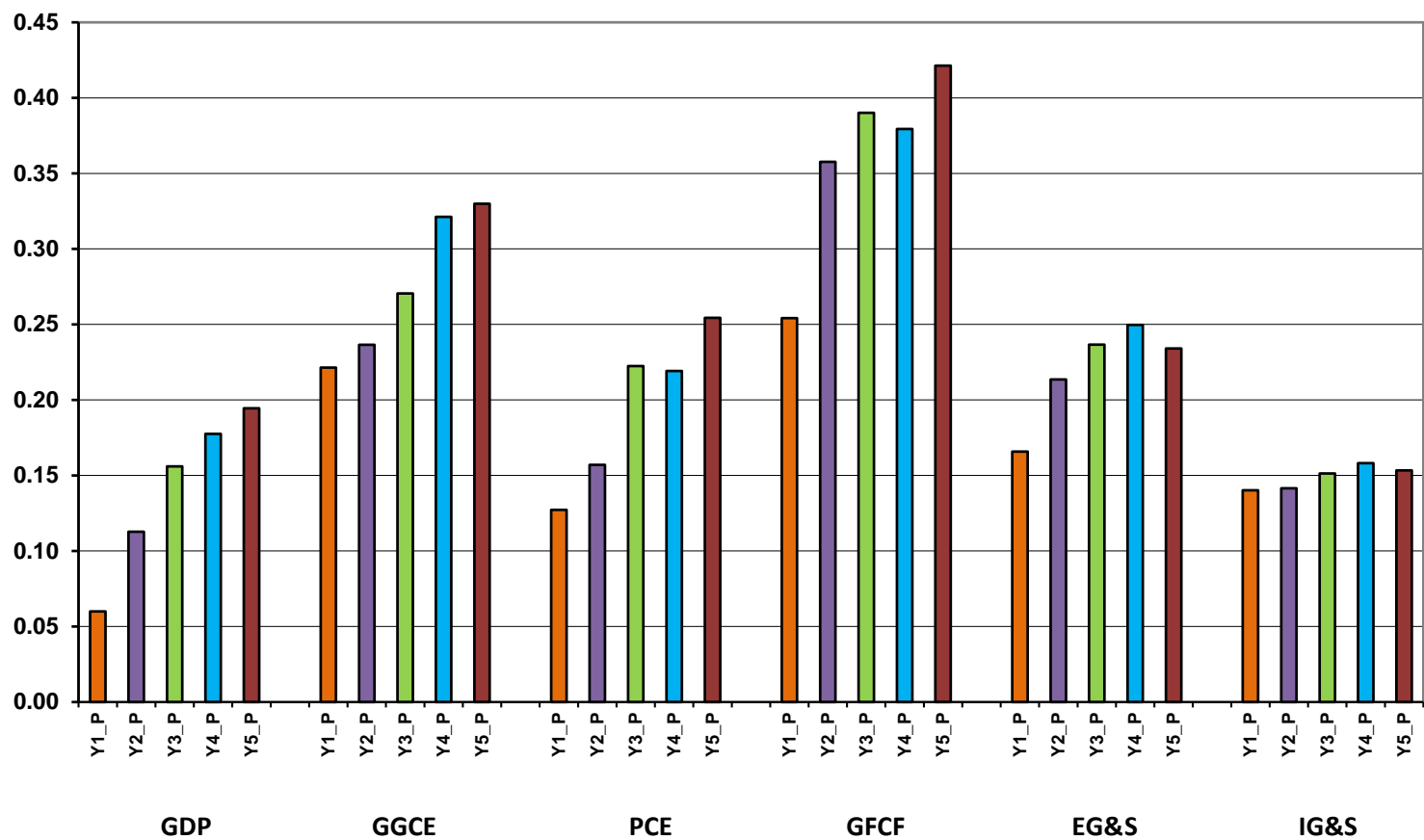
Relative mean absolute revision of related estimates of annual national accounts

GDP   GGCE   PCE   GFCF   EG&S   IG&S
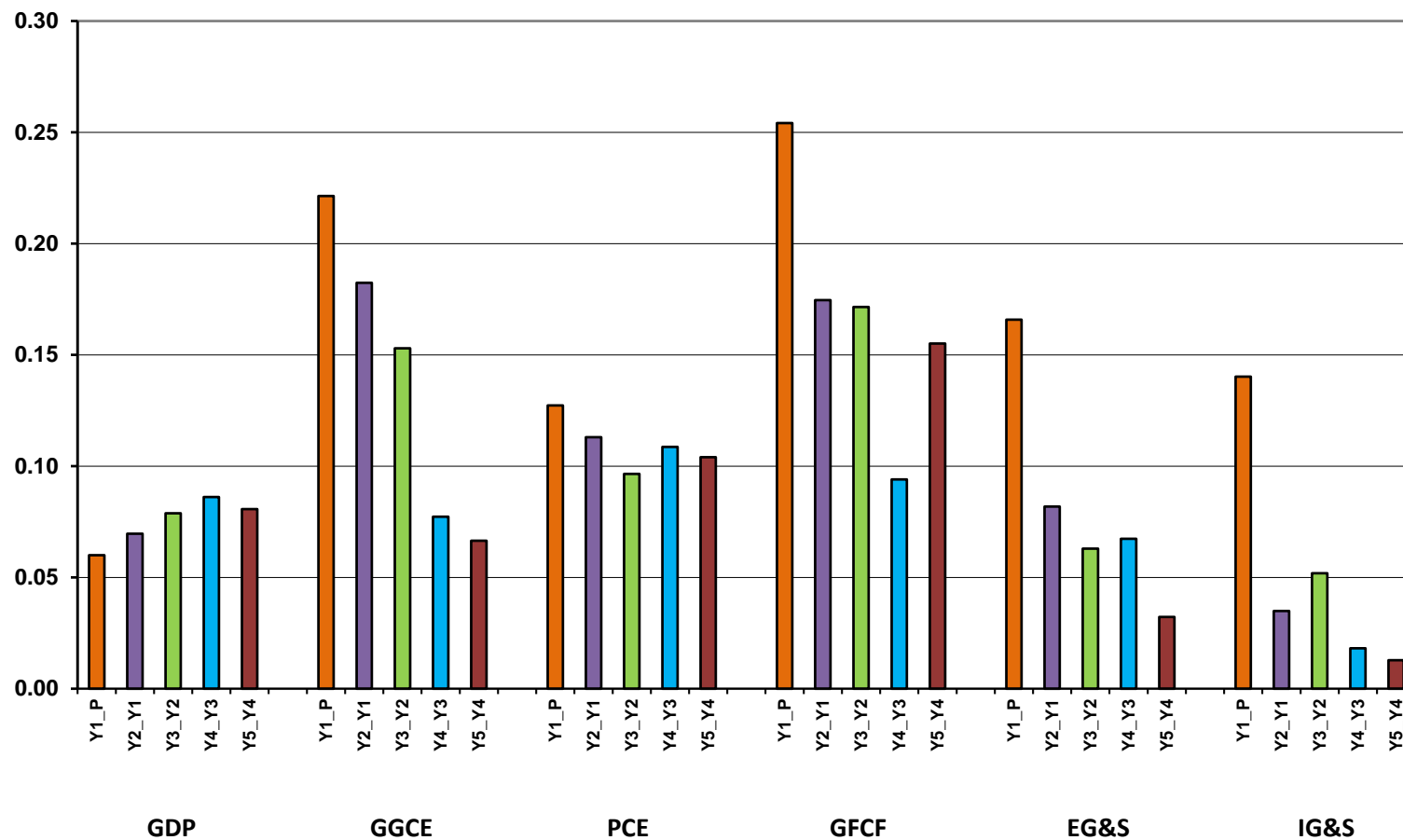
Comparison of Revisions of Economic Growth Rate in OECD Countries

- International comparison of revisions of *quarterly* economic growth rates is based on data published by OECD [4].

- It provides analysis of revision of GDP and its main components in 18 OECD countries (excluding Israel) from 1994-1995 to 2013.

- Indicators of the revision of Israeli GDP, produced by in CBS cover the period from 1997 to 2015.

- For comparison of GDP revisions size, the relative mean absolute revision was selected as it accounts for the difference in economic growth rates between countries.

Relative Mean Absolute Revision of Quarterly Growth Rate of GDP in OECD Countries

Legend: Y1_P, Y2_Y1, Y3_Y2, Y3_P
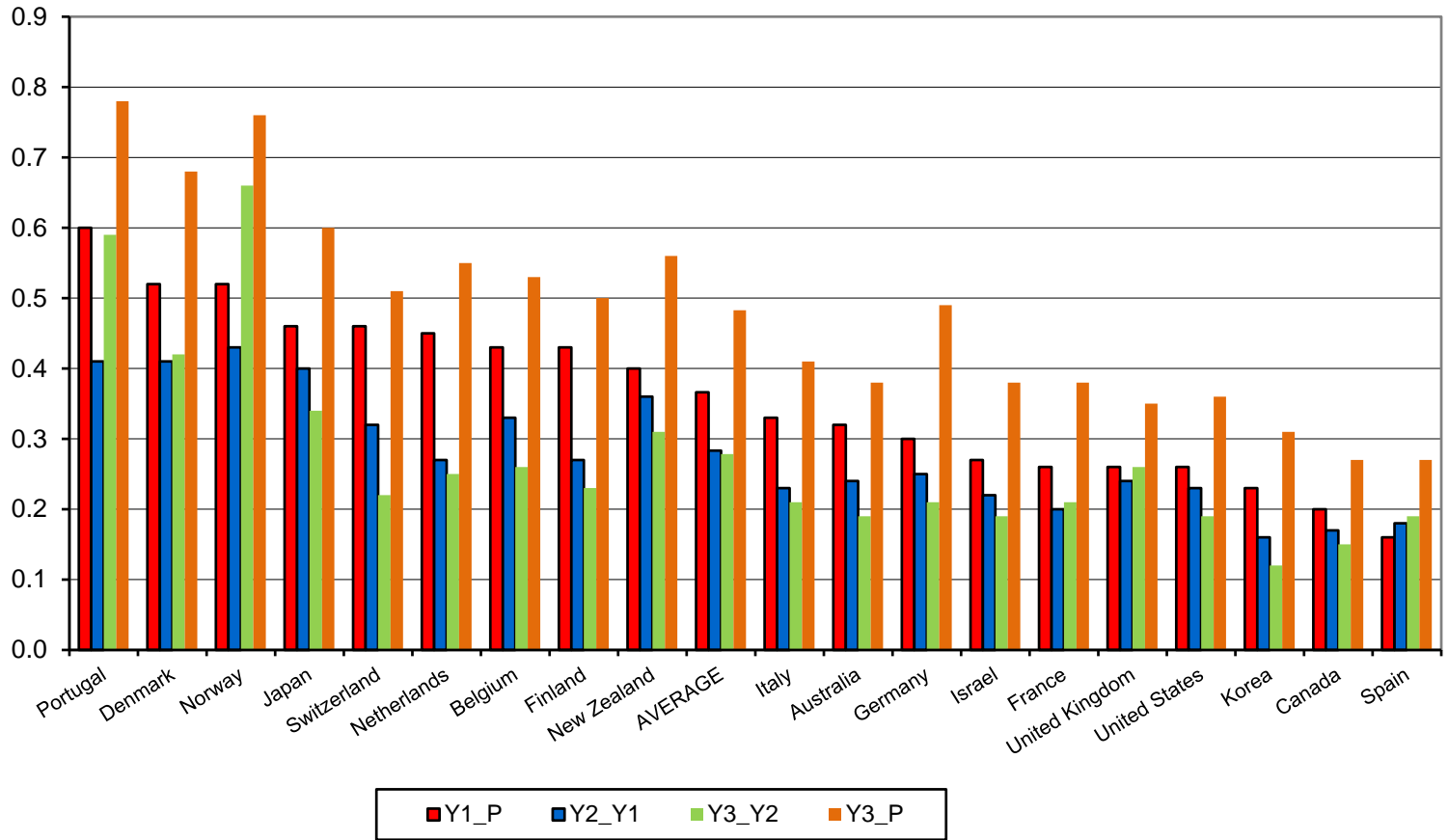
Conclusion (1)

- The desire to publish as timely as possible national accounts data on the basis of incomplete statistical information inevitably leads to the need for subsequent adjustment of the estimates.

- Thus, revision of national accounts data is necessary component for the production of macroeconomic statistics.

- In this regard, it is very important to find an acceptable balance between the timeliness of publication of first estimates of national accounts and their quality, i.e. the size of their subsequent revisions.

Conclusion (2)

■ Analyzes of the causes and the size of revisions serves as a tool for assessing the quality of published national accounts data.

■ Based on the results of analysis, ways for improving the compilation process are identified to reduce the size of future revisions.

■ It is necessary to inform users about the policy of publication and revision of national accounts, as well as about the reasons and size of data revisions.

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

THANK YOU FOR YOU TIME

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