



STATISTICS

A Monthly Indicator of Economic Growth

Technical workshop on nowcasting in international
organizations

Geneva, Switzerland

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Outline

- **A Monthly Indicator of Economic Growth (MIEG)**
- **Statistical approach**
 - Compensation of Employees
 - Interest on Debt Securities
- **Capacity Building**

Monthly Indicators of Economic Growth

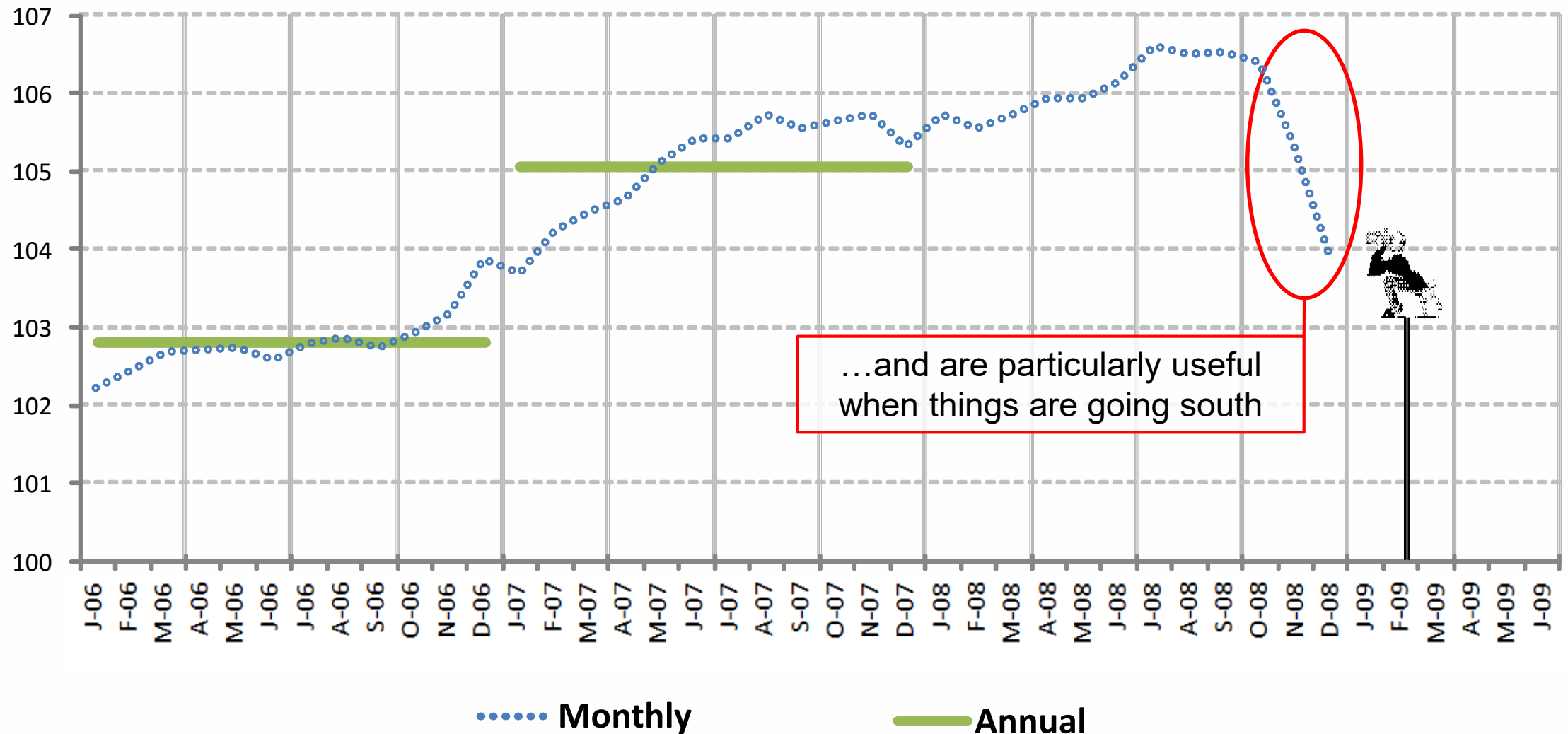
Are an attempt to derive **timely** GDP-like time series on a **monthly** basis

These estimates are used to inform users on the **current status** (recent past) of the economy

Their usefulness will depend on the ability of **tracking** the changes of the target (quarterly or annual volume GDP)

Nowcasting techniques are needed to fill some gaps when compiling MIEGs, and MIEGs can also be input for some other nowcasting procedures (e.g. real-time quarterly GDP)

MIEGs give a more up-to-date status



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 - Production
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Statistical Approach of MIEGs

MIEGs are based on the same approach used to compile **GDP**, so are **methodologically consistent** with one another

Given that economic growth is measured in “real” terms, MIEGs are built either using a fixed base approach or as a chained-index (e.g. **Laspeyres-type** indexes)

“Real” GDP can be measured by **Production** or **Expenditure**, and so can MIEGs

As well as GDP, the compilation procedure is indirect, or bottom-up:

- ✓ Detailed components are built and then aggregated, as opposed to
- ✗ Deriving macroeconomic relationships with other macroeconomic aggregates

Production Approach (e.g. 12)

<u>Section</u>	<u>Description</u>
A	Agriculture, forestry and fishing
B - C	Manufacturing and Mining
D - E	Electricity, gas, water and waste management.
F	Construction
G - H - I	Trade, Transportation and Accommodation and food.
J	Information and communication
K	Financial and insurance activities
L - M - N	Real estate, Professional and Supporting services.
O	Public administration and defense; compulsory social security
P	Education
Q	Human health and social work activities
R - S - T - U	Other service activities

The level of detail at which the component series are compiled depend on the **availability** of both **high-frequency data sources** and **low-frequency targets** availability

The indirect approach requires that all (or **most**) **industry series** are compiled on high frequency. A large number of countries already compile a monthly **Industrial Production Index**, for instance

Data sources may be available from other institutions, and thus **interinstitutional arrangements** are generally needed.

Expenditure Approach (main aggregates)

Expenditure component

Household Final Consumption Expenditure

Government Final Consumption Expenditure

Gross Capital Formation

Exports

Imports

Some expenditure component series **may be readily available** (international trade of goods) on a monthly basis while others will not (changes in inventories)

Expenditure components can be **deflated** directly (volume terms) provided there are appropriate prices

Some expenditure components are related to the production side of GDP and thus some related series can be used for both approaches

Granularity on the expenditures (product level data) may pose additional difficulties for its high-frequency compilation

Data availability

There is **more** high frequency data available than those used in economic statistics compilation

In many cases, appropriate **methods** can be used to derive useful related series

In some cases, the target variables are derived using **models**, **assumptions**, and indirect data: these procedures generally can be applied on a monthly basis

Usually, the main data sources are:

- monthly surveys, tax data, by product financial records, direct information from companies, international trade statistics, price indices, labor statistics, financial statistics, and government data

Statistical methods

In many cases, source data cannot be taken as is. To ensure **quality**, statistical methods (e.g. outlier detection) need to be performed

The fit of the related series needs to be assessed using **statistical tools**

Some source data will represent a direct indicator to the target variable (IPI vs GDP) while sometimes are used as **indirect indicator**

- In these cases **modeling** may be necessary to nowcast the monthly estimate of the target (e.g. ADL)

Some source data may not be timely at times and **nowcasting** procedures need to be in place to fill the gaps (e.g. ARIMA)

Some target variable may have more than one related series contemporaneously, and thus, statistical methods may be required (e.g. factor models)

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Developing a MIEG

Stock take of source data

- Ideally no new source data are needed but the exploitation of currently available data can be used

Assessment and selection of indicators

- Building related time series may require cleaning processes, imputation, and certainly assessment

Index compilation

- Aggregation (linking if required) and analysis. Possibly seasonal adjustment and in some cases benchmarking

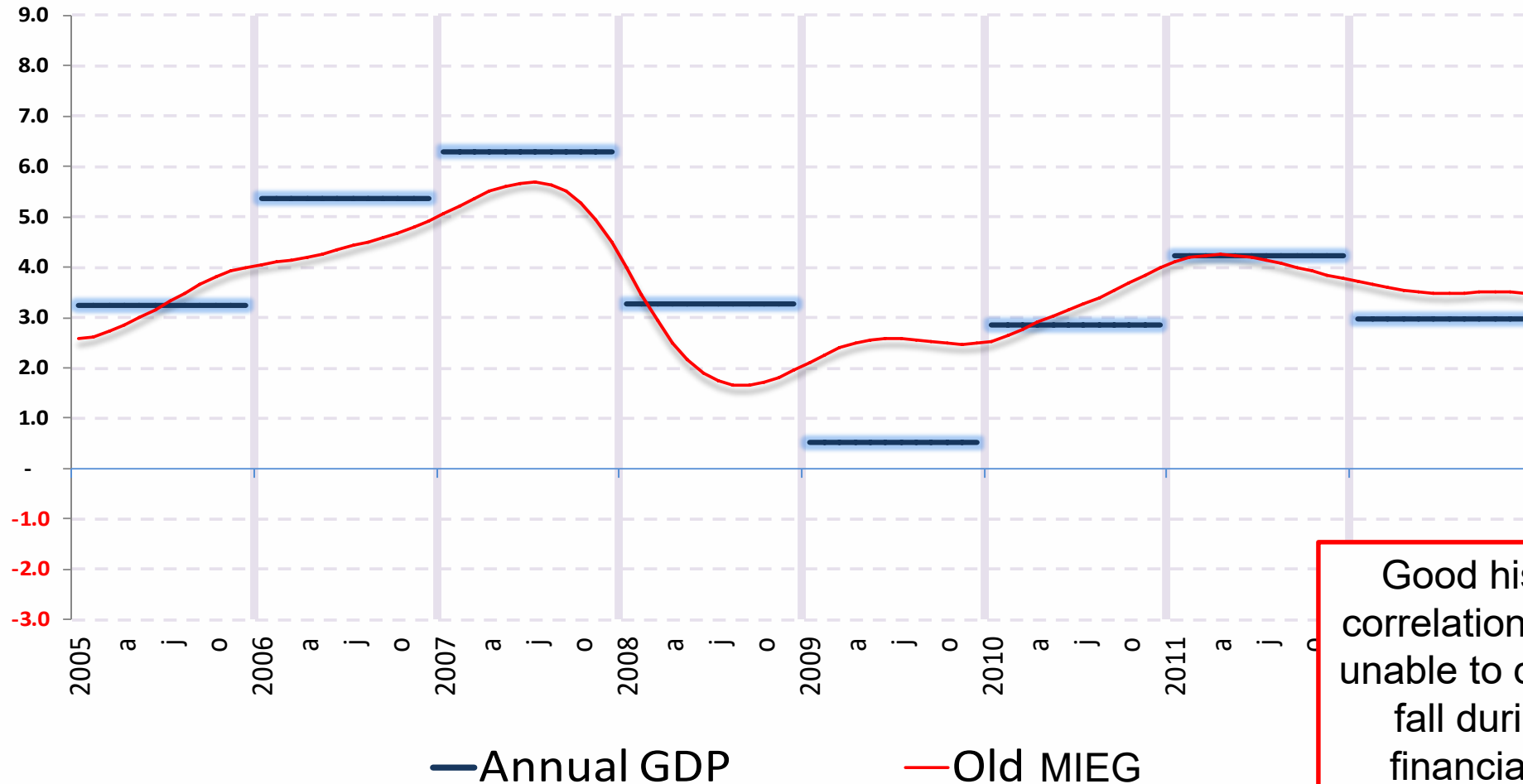
Index dissemination

- Ideally within 30/45 days after the reference month.
- The aggregate number can be accompanied by some detail, seasonally adjusted and trend-cycle data, and a press release.

An example:

Annual Percentage Changes - Trend Cycle Component

January 2005 - December 2012

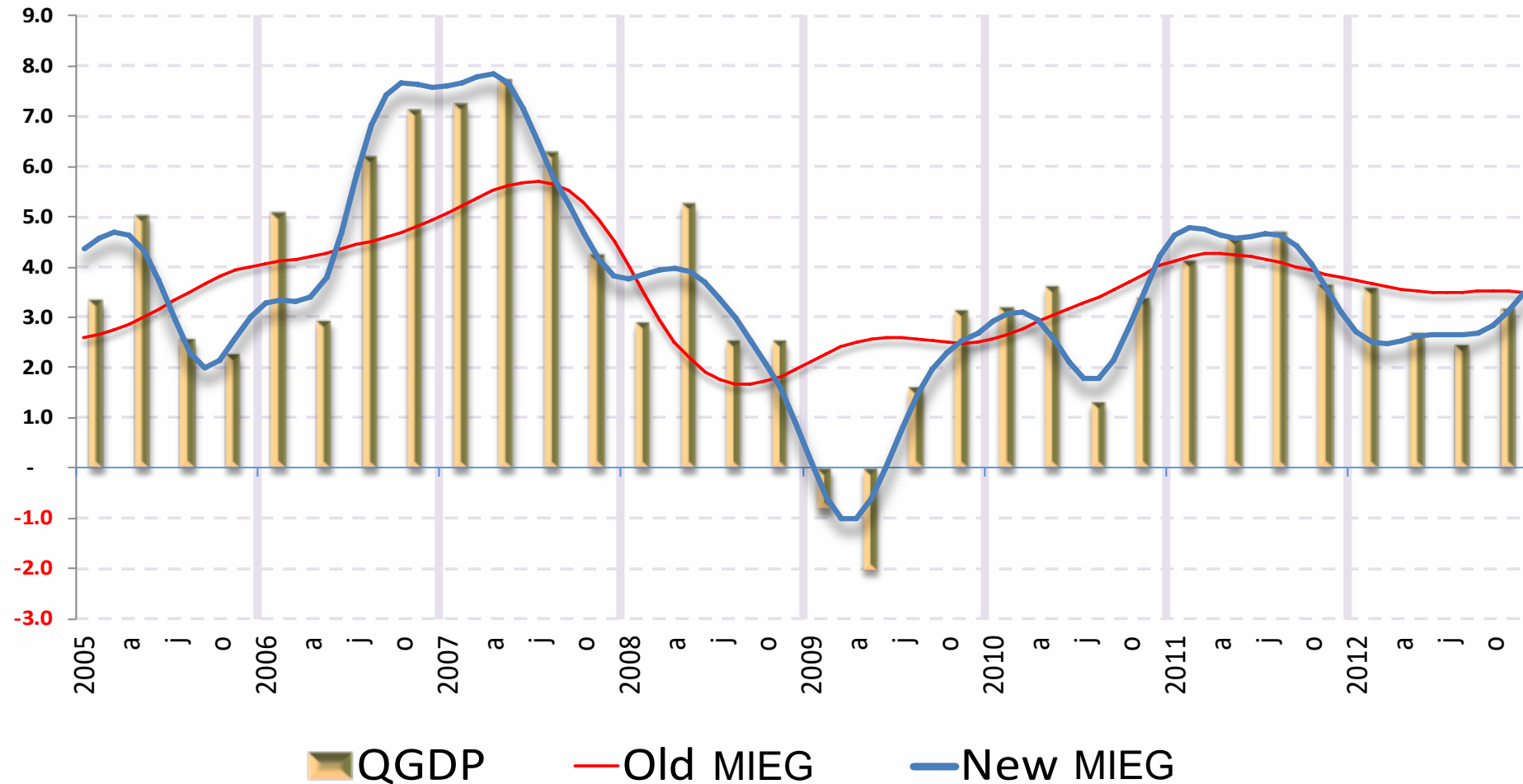


Good historical correlation, but was unable to detect the fall during the financial crisis

An example:

Annual Percentage Changes - Trend Cycle Component

January 2005 - December 2012



Current work

The Statistics Department of the IMF is currently developing a project devoted to support low and lower-middle income countries to enhance and broaden the coverage of existing high-frequency indicators of economic activity, and ultimately developing a MIEG

Data collected during the CD activities show that most countries compile and disseminate industrial production (or manufacturing) indices and prices statistics. About $\frac{3}{4}$ have access to monthly international trade statistics, and about $\frac{1}{2}$ have access to VAT data. On average, $\frac{1}{4}$ compile and disseminate other activity indicators, however, the dispersion is large.

While the potential of developing more and better indicators is there, multiple needs and different priorities must be met with fixed resources.

End

Thank you!