ECONOMIC STATISTICS

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Module 1	Economic Statistics in modern economy
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Topic	Institutional Statistical System and Data Quality

Official statistics

- They are a public good
- They are free of charge to users
- They are organized within the framework of the National Statistical Programme(PSN)
- They are characterized by a high degree of impartiality and reliability
- They are an instrument of democracy
- They support public administrations, economic operators, social partners, and citizens.

If statistics are so central to public policies, who ensures that they are reliable?

They should be:

- relevant to the general public interest.
- comparable.
- indipendent from political influence.

This requires an institutional statistical system

The main producer is the **National Statistical System (Sistan)**
http://www.sistan.it/

It operates in coordination with, and as an active part of, the **European Statistical System (ESS)**

https://ec.europa.eu/eurostat

ISTAT: main functions

- Production of official statistics
- National accounts
- Prices (inflation)
- Labour market
- Censuses

SISTAN

ISTAT coordinates a network that includes:

Ministries

Regions

Public institutions

It does not produce everything itself: it coordinates and integrates.

EUROSTAT

European statistics are governed by:

-EU regulations
-Common methodological standards
-Data transmission obligations

Why do we need international coordination?

Why is European coordination not enough?

- Economies are global.
- Multinationals operate on multiple continents.
- Financial flows are transnational.
- Crises spread globally.

A shared statistical framework is needed worldwide.

The System of National Accounts (SNA)

Developed and maintained by:

- United Nations
- International Monetary Fund
- World Bank
- OECD (Organisation for Economic Co-operation and Development)
- European Commission

The SNA provides internationally agreed definitions, including for GDP (Gross Domestic Product).

OECD: standards and indicators

Role:

- International collection and comparison
- Statistical standards
- Methodological guidelines

Contributes to the development of:

- Manuals
- Recommendations
- Comparative indicators

It does not impose rules like the EU, but it strongly influences international standards.

IMF and macroeconomic monitoring

Role:

- Standards for financial statistics
- Balance of payments manuals
- Global macroeconomic monitoring

Important:

- Countries must provide comparable data.
- Data becomes part of international monitoring

Multilevel coordination

Three levels:

1. National (ISTAT) – Italian National Institute of Statistics
2. European (Eurostat) – European Statistical Office
3. International Organization for Economic Cooperation and Development – (OECD)

Problem:

Consistency

Timeliness

Data review

Common standards

Official statistics are the result of institutional cooperation.

DATA QUALITY

Why talk about quality?

If public policies are based on economic statistics, then data quality is crucial.

When can we say that a statistic is "good"?

Dimensions of quality

The main dimensions are:

-Accuracy

-Timeliness

-Consistency

-Comparability

These are not arbitrary choices: they derive from European and international standards.

Accuracy

Definition:

How close the estimate is to the “true” value (which we do not observe directly).

Typical problems:

- Sample errors
- Measurement errors
- Underground economy
- Non-response

Example: GDP, unemployment, inflation.

The true value of the economy is not directly observable.

Timeliness

Definition:

How quickly the data is available.

Central trade-off:

Fast data → less complete

Complete data → less timely

Example:

The first estimate of GDP is preliminary and based on partial information.

Consistency

A statistic is consistent when:

-It is internally coherent

-Does not contradict other related quantities

-It is stable over time

Example:

GDP on the production side must coincide with that on the expenditure side.

Comparability

We can compare:

-Different countries?

-Different periods?

-Different sectors?

Comparability requires:

-Common definitions

-Harmonized classifications

-Stable methodologies

Link with: European and international coordination

Trade-offs between dimensions

You can't maximize everything together.

Example:

Greater timeliness → lower accuracy.

Methodological changes → greater accuracy but less comparability over time.

Quality is a balance.

Statistical reviews

Why are the data being revised?

If a statistic is official, why does it change over time?

Because it's **a progressive estimate.**

Information comes in stages.

Regular reviews

These are “normal” revisions:

- New administrative data is arriving
- Investigations are completed
- Missing information is updated

Typical example:

The first estimate of quarterly GDP is preliminary → then it is updated.

Revisions are not errors, but informational improvements.

Base-year revisions

They happen when:
-The base year of prices is updated
-Weights and structures are changed
-New international standards are being implemented

Effect:
Time series can also change retroactively.

Typical example:
New national accounts base → revision of GDP for many years past.

Methodological changes

These occur when:

-New economic activities are included

-The sectoral classification is changed

-New data sources are introduced

-The accounting system is updated

Example: treating R&D as investment; definitions of production evolve over time.

Why does GDP change over the years?

GDP changes because:

- early estimates are partial.
- more complete data arrive later.
- calculation bases are updated.
- new international standards are introduced.
- methodologies are improved.

GDP is not a fixed number: it is an evolving estimate.

Revision and policy

Implications:

- decisions are based on preliminary data.
- ex post assessment may change.
- Credibility depends on the transparency about revisions.

Governing means making decisions under imperfect information.

Conclusion

Three key ideas:

-Every statistic has limits.

-Quality is multidimensional.

-Reviews are a physiological part of the statistical process.

Economic statistics are not photographs of the economy, but progressive and improvable reconstructions.