

# Globalisation and data

What we want  
and  
what we have

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# Statistics Sweden

- Some time ago, Statistics Sweden asked:

*”What do you think about available data  
and*

*what additional data would you, as a researcher, wish to have?”*

- We will come back to what came out from that discussion(s).

# ***Motives***

- Prahalad and Ramaswamy, (2004).
  - The rapid technological development of today is the toughest challenge firms' face.
  - If politicians and decision makers don't have sufficient with information and weak knowledge about global development, political decisions may easily be such that they severely hurt the domestic business climate and economic development.
  - As the economy develops, both firms and decisions makers require more refined information.

# ***Motives***

- Globalization loosens up the localization ties of R&D (and other activities) to the headquarter, and makes it more footloose.
  - Many projects going on in this issue.
  - Ex. A Nordic program on globalization, and service sector R&D.
  - At the 2006 ETSG conference in Vienna, "*Globalization*", "*R&D*" and "*outsourcing*" were the three most commonly used words in the title of papers presented there.



**What do we want to know?**



# Where does knowledge come from?

- Internally produced
  - R&D,
    - Data on national/industry/firm level R&D expenditures. E.g. OECD, ANBERD, various national R&D statistics and surveys.
  - Education programs.
    - National education programs, targeted programs, on the job training.
  - Learning by doing.
    - Industry and firm specific data.

# Where does knowledge come from?

- Semi-Internally produced
  - Cooperation, Universities-governmental organizations-firms.
    - The possibility to offer cooperation in large R&D projects has become a tool for attracting FDI.
      - Firms' cost is reduced.
      - Foreign owned firms are expected to bring in outside/external knowledge.
      - Information on home and host country characteristics becomes interesting.

# Where does knowledge come from?

- External sources of knowledge
  - Trade.
  - Outsourcing links.
  - FDI links.
  - Licensing  
An important, strategic source of international knowledge transfer.

# Where does knowledge come from?

- Investment in capital.
  - "Embodied technological change".  
(Stoneman, 1982).  
(national, industry, and firm level data).

# Where does knowledge come from?

- Spillovers (Marshall, 1920)
  - Worker mobility/ Labour turnover.
  - Input-output linkages.  
(Formalized in the new economic geography)
  - In the air.
- A geographical dimension
  - Worker mobility, low dimension of geographical units.
  - I/O linkages, trade related domestic and foreign trade.
  - "In the air" Spillovers are closely related to distance.

## Where does knowledge go?

- Into new products
  - (embodied technological change).
  - Benefit spread out to a large number of receivers.
- Process innovations
  - Firms tries to protect it's knowledge advantage.

## Where does knowledge go?

- Controlled spread of knowledge
  - To other firms' within corporation, home and abroad.
  - Licensing etc to other firms at home and abroad.
- Unintentional spread of knowledge.

# Consequences of knowledge accumulation?

- National, individual level
  - GDP/capita
- National/Firm/industry level
  - Productivity
  - Patent, patent citation
  - Licenses
  - Trade patterns
  - Industrial structure
  - Relative labour demand
  - Profits
  - Competition
  - Wages and wage dispersion
  - And more...

## What information is available to the analyst?

- Macro level data.
- Micro level data.
  
- International data.
- Domestic data.
  
- Hard indicators.
- Soft indicators

# Trends

## I. What we want and what we have

- R&D projects may require participation from several countries and require large investments.
  - *Increased need for cross-country information*

# Trends

## II. What we want and what we have

- Analysis
  - Shift from the industry/national aggregation level to micro level data on firms and individuals.
    - *Increased need for micro level data*
  - These dataset are typically:
    - Bounded to one country
    - Register data or limited surveys.

# What we want and what we have

- Lack of firm level data with detailed information on firms activities abroad.
- Some exceptions:
  - The Amadeus database.
    - Register data on multinational firms.
  - The Research institute of Industrial Economics, (Sweden).
    - Information on Swedish MNEs activity outside Sweden.

Main drawback in these data:  
missing information on non-MNEs.

## What we want and what we have

- Hard register data (annual reports etc) with close to 100 percent coverage is today available in many countries.

Ex. Annual report of Industrial Enterprise Statistics, Statistics China.

All firms turnover > 5M RMB.

- Matched employer-employee data is becoming increasingly available.

## What we want and what we have

- Though, many South-East Asian countries are lagging behind e.g. the Nordic countries in providing highly detailed- register based- data.  
(For example, for every Swedish citizen we can see with a precision of 100x100m where he or she lives, income, education, year of graduation, family status, no of sick leave days, etc, where he/she works as well as detailed information on that plant and firm.
- This gap is relatively easy to fill.

## Trends

### III. What we want and what we have

- **General (non case specific) studies often lack soft variables, typically is collected by way of a survey.**
  - *A general lack of soft indicators in (broad) general studies.*

# Aggregation, coverage and generality

- Soft indicators?
  - Soft indicators are typically not found in firms accounting books.
  - Soft indicators are not easily transformed to numbers.
  - Soft indicators are often based on a survey.
  - Surveys are relatively expensive to perform.
  - Surveys may bump into a low response rate problem
  - Long time series for surveys are often missing.

# Surveys

- What knowledge gaps may the analyst wish to fill by a survey?  
(Attitudes, evaluations, etc.)
- Examples
  - How does the corporation allocate knowledge production across firms within the corporation?  
Concentrate R&D to one or a few firms or spread it out?
  - How is knowledge controlled and spread across plants and firms within a corporation?

## Surveys

- What knowledge gaps may the analyst wish to fill by a survey? (cont.)
  - How important is research cooperation with universities for the location of R&D units?
  - How important is (research) corporation with other firms for the location decision?
  - Is R&D under strict control of the board or is R&D department given a large degree of freedom? Why or why not?

# Surveys

- Large, or very large, surveys are performed. (OECD, WB, ADB, etc)
  - In South-East Asia, building a system with repeated and consistently performed surveys may be relatively easy and cheap to establish. In some cases this is on track.  
Ex. VSSP
  - South East Asian countries have cost advantage in collecting survey based information.

# What we want

- China and other countries will most likely expand the collecting of register data (necessary to keep track of the status of the economy).
  - When doing this, take advantage of what can be done by a survey.
- *Combining register and survey data may be the key that allows the analyst to tackle complex globalization issues.*

## Back to Sweden

- Statistics Sweden asked:
  - A. "What properties are of the data are most important for you in your research?"
  - B. "What data that we don't produce today would you, as a researcher, like to see?"
  - C. How can we increase the availability of micro data for researchers?

## Back to Sweden

- Answers
  - A. *Desired properties*
    - We want long and consistent time series.
    - Do not change variable definitions.
  - B. *Desired information we do not have.*
    - Soft indicators.

# Back to Sweden

- Answers
  - *C. Availability*
    - Ease the (juridical) process for granting access to low level micro data.
    - Charge a low price.

## Back to Sweden

- *Response from Statistics Sweden*
- A. Statistics Sweden is aware of not changing variable definitions.  
Some overlap of old and new definitions.
- B. Not much has been done yet on constructing and collecting soft indicators.

# Back to Sweden

- *Response (cont.).*
- C. Access principle
  - Industry level data is in general available for free.
  - Access to firm and individual level data is restricted.
  - Juridical formalia for granting access to micro level data is now relatively unbureaucratic
  - Access granted by in internet based system.
    - Fast, cheap and safe.
    - *Allows merging with 3rd part data.*

## Wrapping up: The dream scenario

- Look forward.
- Information is crucial both for decision makers and firms.
- The demand for more detailed information is steadily increasing, and will increase as the economy grows in complexity.
- Collecting data and not make use the information is nothing but waste of resources.
- Building up the capacity of collecting and handling a large amount of register type of information is possible and even necessary as the economy grows in complexity.

## Wrapping up: The dream scenario

- Cooperation between researchers, the government and data collecting authorities may be fruitful for all parts involved.
- South East Asian countries may take advantage of the relatively low cost of gathering information by way of surveys.
- Do not change question from one year to another.
- A potential conflict of interest between private collectors of survey data and the collective.  
(as a collector you want a private pay-off before letting go of your comparative advantage).
  - *In this context large organizations such as OECD, WB etc may play a central role.*
- Be aware of the possibilities of linking register and survey data.  
(When setting up a survey, make sure that survey data is linkable to register data.)



Thank you for listening!