The impact of migration on the LFS data: The case of Poland

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March 5th, 2009, Mannheim
Motivation

How post-accession migration influenced Polish labour market?
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2. What changes in the labour market can be attributed to migration?
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2. What changes in the labour market can be attributed to migration?
Agenda

• Motivation

• Aims

• Methodology

• Results

• Conclusions
Methodology findings

- Oversized population (definition of population)
- Polish LFS data pretend that there is hardly any migration
- Theoretical categories of persons
- Time inconsistency
Aims

• To analyse how migration influenced LFS data between 1995 and 2008.

• To obtain time series on the employed, unemployed and inactive, which better reflect reality and are consistent and comparable in the whole period of interest.
Methodology (1)

• Both sampling and fieldwork are independent on the definition of population.

• Size and structure of the population covered by the survey matter at the stage of generalization of the sample data.

• A need to modify the procedure of weighting sample data.
## Migration vs different measures of population

### Estimates of the Polish population abroad (Polish CSO, 2008)

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### Population in yearbook vs population in LFS

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Differences due to different definitions, coverage & included migrations

Increase of „Yearbook” (registered) population 15+ due to moving baby boom
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- **Migration outflow**
- **Change in LFS population 2007-2004**
Simulation assumptions (1)

• The simulations of population revision was conducted in 4 scenarios (due to incomplete and uncertain data on the scale and structure of migration after 2004):

• The simulation revision resulted in reduction of population in Polish LFS by 0.7-1.9 mln, compared to the original LFS population (ref. 3q2008).

• According to the scenario that used official Polish CSO migration estimates, we assumed the population covered by the survey is smaller then the one used originally in LFS. In 3q2008 it is about 1.9 mln.
Simulation assumptions (2)

- **Lower_est** – the lowest estimate of migration based only on Census 2002 and information from LFS

- **Upper_est** – the estimate of migration on the basis of Census 2002 + rescaled information about migration from different data sources.

- **Medium_est** – average of Lower_est and Upper_est

- **CSO_est** – estimate of migration on the basis of CSO official publication

**LFS_POP** is a current population in Polish LFS Survey and is presented as a benchmark
Population in simulation scenarios

NSP 2002r.

LFS_POP
Upper_est
Lower_est
Medium_est
CSO_est

Millions
Population in LFS vs migration estimates (age & sex structure)

Structure by age total men=total women =100%

EMIGRATION

Source: LFS 2006

Men 65% of emigration
Women 35%

Men 48% of population
Women 52%
Labour supply (1)
Labour Force Participation Rate
Labour supply (3)

Conclusions regarding labour supply (number of economically active persons):

- The main factor, that determines the potential overestimation of labour supply is the size of the population revision.
- Structure of the population by age, sex and place of residence is the main source of differences in LFPR.
- According to calculations based on CSO migration estimates in the 3q 2008 the number of economically active was lower by over 1.1 mln persons.
- Simulations showed only small influence of migration on LFPR in total population.
Results – employed (1)

Employment

Employment in mln

- LFS_POP
- CSO_est
- Upper_est
- Lower_est
- Medium_est
Results – employed (2)

- The main factor, which determines potential overestimation of employment is the size of the population revision.

- Due to increased migration related to the Poland’s EU Accession the revised annual dynamics of the number of employed is lower than the official one starting from the 3q2004.

- Between 4q 2003 and 3q 2008, the number of employed increased by 8.7% according to official LFS data and 4.7% according to the revised statistics.
Results – unemployed (3)

Unemployment in millions

Unemployment in millions

[LFS_POP] [CSO_est] [Upper_est] [Lower_est] [Medium_est]
Results – unemployed (2)

Unemployment rate

LFS-POP  CSO_est  Upper_est  Lower_est  Medium_est
Results – employed & unemployed

- Relatively large difference between the revised and the official number of unemployed in 1995-2002 is a result of the assumption of relatively larger migration of the young persons, who experienced unemployment most frequently in that period.

- Decrease of this difference since the beginning of 2003 follows from the rapid/dynamic decrease of the share of unemployed from the youngest age groups (15-29 years) – potential migrants – in this period.

- The differences between the unemployment rates according to scenarios and the official data are fairly modest, which suggests that the results concerning unemployment rate were determined by the age structure of the revised population (migration) rather than by the size of it.
Conclusions - results

• Measurement of migration and definition of population used by Polish CSO for LFS estimates probably result in overstating the number of all categories of persons on the Polish labour market and can distort their proportions.

• Our simulations show that distortions of the LFS data, resulting from the „disregarded” migration, apply to greater extent to the estimates of absolute numbers (like the number of employed, unemployed or inactive) than to the estimates of the ratios (like labour force participation ration, unemployment or employment rate).
Conclusions – further discussion

• What are the experiences of other countries’ LFS users?
• Generalisation of the results of surveys like LFS or EU-SILC rely heavily on the estimates of population
• Definition & measurement of population can also impact other statistics (fertility rates, mortality rates, average wage etc.)
Thank you.