


Methodology for Estimation of Flows due to Illegal Employment



**Bulgarian National Bank
Statistics Directorate
Balance of Payments and External Debt Division**

February 2007

Factors for Temporary Illegal Employment and Migration

- Unemployment in some regions of Bulgaria;
- Opportunity to stay in most of the EU countries twice a year for 3 months without a visa since April 2001;
- Higher levels of income in other countries of employment.

Definition of Remittances in the revision of BPM5

- **Personal Transfers** – will consist of all current transfers in cash or in kind made or received by resident households to or from other non-resident households.
 - *Personal Transfers* will replace the BPM5 worker's remittances, and the latter will be retained as a supplementary item and will be recorded as an "of which" item of *Personal Transfers* to maintain time series.
- **Personal Remittances** = personal transfers + net compensation of employees + capital transfers between households.
 - *Compensation of employees* – net of social contributions, of taxes on income and of travel and passenger transportation related to employment of non-residents.
- **Total Remittances** = personal remittances + social benefits.

BOP Items and Migration in BPM5

Currently the following 3 BOP items are relevant to transactions linked to migration and temporary employment abroad:

- **Workers' remittances** - subitem of item *Current Transfers* of the *Current Account*.
- **Migrants' transfers** - subitem of item *Capital Transfers* of the *Capital Account*.
- **Compensation of Employees** - subitem of item *Income* of the *Current Account*.

Workers' remittances and Migrants' transfers

- *Workers' remittances* covers current transfers by migrants who are employed in new economies and are considered residents there. *Workers' remittances* are inherently difficult to measure, as they involve transactions between and within households, often outside the formal economy (Eurostat 2004).
- At present in *Workers' remittances* are included banks' data (transactions through banks)
- *Migrants' transfers* are contra-entries to the flows of goods and changes in financial items that arise from migration (change of residence for at least a year) of individuals from one economy to another.

Compensation of employees

- *Compensation of employees* comprises wages, salaries, and other benefits (in cash or in kind) earned by individuals in economies other than those in which they are residents - for work performed for and paid by residents of those economies. Employees, in this context, include seasonal or other short-term workers, (less than one year) and border workers who have centers of economic interest in their own economies. (Balance of Payments Manual, Fifth edition, para 269).
- At present in *Compensation of employees* are included banks' data (transactions through banks) and estimation of flows due to illegal employment.

International experience in compilation of *Compensation of Employees (1)*

There are several groups of problems in collecting data for the compensation of employees :

- The practical implementation of the concept of residence.
- The high threshold applied by the countries with settlement based BOP collection systems. The threshold applied by the Bulgarian National Bank - approximately 25 000 BGN (EUR 12 500) do not allow most of the remittances related transactions to be recorded properly.
- The diversity of methods of money transfers. Along with the banking transfers and mainline money transfer business such as Western Union there are significant informal transfers. The illegal status of these employees determines the use of informal channels for transferring the income.

International experience in compilation of *Compensation of Employees*(2)

- According to the ECB, direct collection of data via settlement system has only partial results.
- The estimates of the informal flows might also be done via household surveys. However, household surveys provide underestimated flows regarding informal remittances - related flows (Freund, Spatafora, 2005).
- Because of these problems in collecting data for the compensation of employees many countries implement estimations based on the number of residents temporary working abroad and average wages for the respective economies (Damia, 2005; Zlotnik, 2005; Harrison, 2005).

Basic principles of the model

- The developed by the BNB ***Model for estimation of flows due to illegal employment*** is based on multiplication of the number of residents working illegally abroad and their incomes and expenditures per capita.
- The model allows estimation of the monthly incomes and expenditures, by country of employment.

Data sources for estimation of the number of workers

- Monthly data from the Border Police on the number of Bulgarians who traveled abroad with a breakdown by purpose of travel and by destination.
- A survey run by the BNB at the end of 2005 among Bulgarian tour-operators about the number of Bulgarians who bought package holidays and made reservations for traveling abroad.
- Households survey on travels abroad, carried out by the research agency "Alpha Research" in December 2005.

Estimation of the number of people illegally working abroad

- The number of people who left Bulgaria to work illegally abroad is a function of:
 - (+) the number of Bulgarian citizens leaving the country with reason "Travel" (Border Police data);
 - (-) the number of Bulgarians who bought package holidays and made reservations for traveling abroad through Bulgarian tour-operator (tour-operators' survey);
 - (-) the number of Bulgarians traveling abroad without using the service of a Bulgarian tour-operator (households' survey).
- It was assumed that Bulgarians illegally employed abroad stay for 3 months in the respective country and then return to Bulgaria (the legally allowed period to stay for tourist purposes is 3 months). Then the number of Bulgarian residents working illegally abroad will be a sum of the number of people who left Bulgaria for the current month plus those in the previous 2 months.

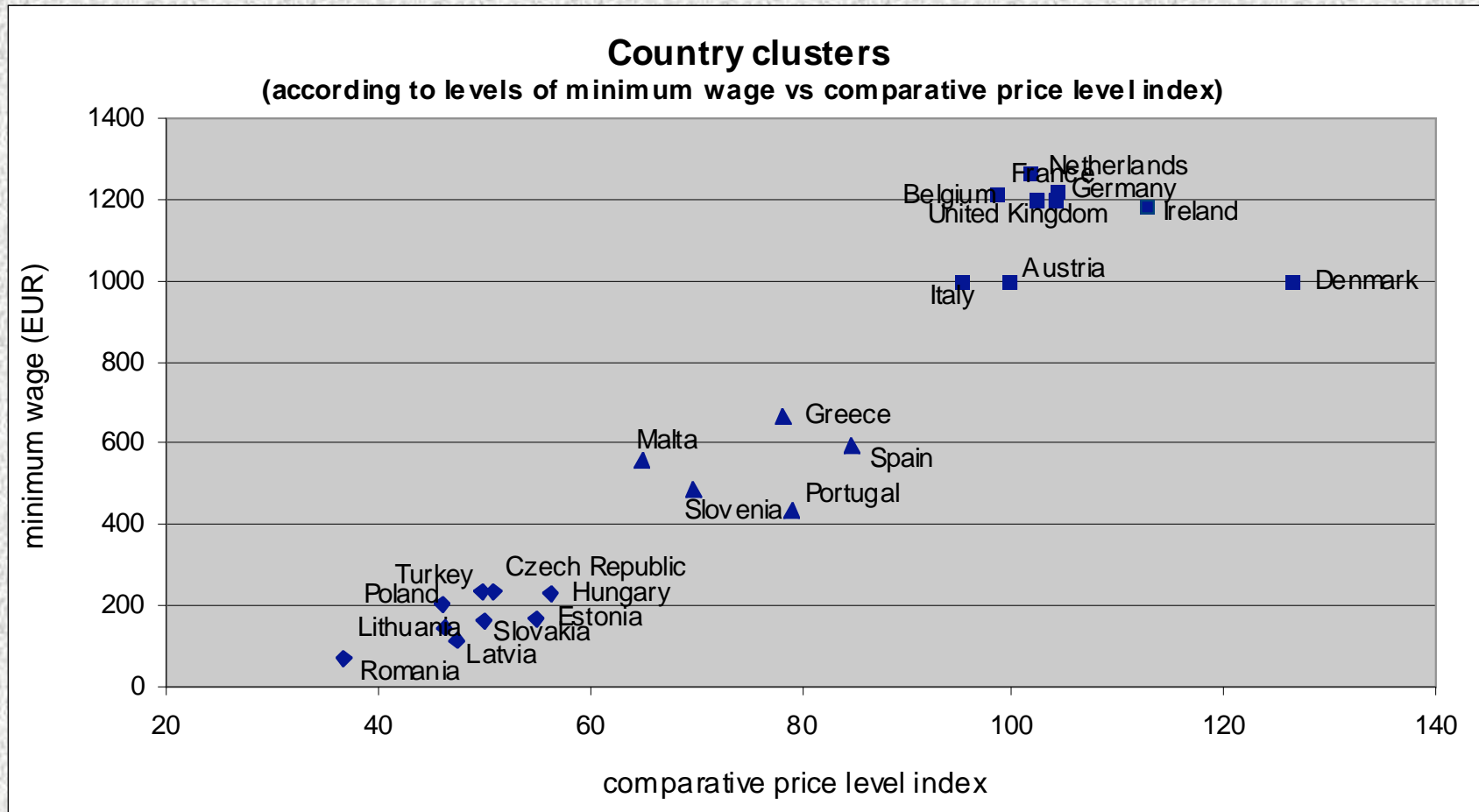
Estimation of income

- The income is estimated as a multiplication of number of workers and the minimum wages for the respective economy of employment.
- As the workers are illegally employed it is assumed that they receive the minimum wage in the respective country and they do not pay any taxes, insurance, etc.
- The source for the levels of minimum wages is the report "Minimum Wages 2005 - Major Differences between EU Member States", Eurostat (01.08.2005 г.).
- The estimated income was included in *the credit side of item Compensation of Employees*.

Estimation of expenditures (1)

- The expenditures are estimated as a multiplication of number of workers and the cost of living for the respective country.
- The level of monthly expenditures per worker was assumed to be equal to the cost of living for the respective country.
- A scatter plot analysis of *minimum wage* (M_n , where n is the country) and *Comparative price level index* clearly showed the existence of three distinctive clusters of countries.

Scatter Plot Analysis



Estimation of expenditures (2)

- For each cluster ($c=1,2,3$), based on the available information, a benchmark country (Portugal, the UK and Hungary) was used for determining the share (S_c) of expenditures (L_c) in minimum wage (M_c):

$$S_c = L_c / M_c$$

- We assume that the coefficient (S_c) for each of these three benchmark countries is applicable for the rest of the countries in the respective group c . Thus the cost of living for the rest of the countries (L_n , where n is the country) was estimated as:

$$L_n = M_n * S_c$$

- However, in practice estimated expenditures might be lower as most of the resident - illegal employees can rely on the informational, financial, and logistic support provided by Bulgarians already working abroad.
- The estimated expenditures were included in *the debit side of item Travel*.
- The Methodology and the model was send to the ECB and the IMF.

Revisions

- The application of the model started with BOP data for January 2006.
- At present data are revised as from April 2001.
- The starting month for revision is April 2001 as it was the first month in which Bulgarian citizens were allowed to travel to most of the European countries without a visa.


Future Steps

- In the first half of 2007 is expected to be run a survey on the border points through Bulgarian and foreign travelers.
- This survey will collect information for estimation of the following BOP items: *Travel, Passenger Transportation, Compensation of Employees and Workers' remittances.*

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