

THE ESTIMATES OF NON-OBSERVED ECONOMY IN THE SLOVAK REPUBLIC

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SOSR has reached significant improvements in area of real evaluation of the non-observed economy. Main contribution to the improvements was initiated especially by PP EUROSTAT and its experts. Improvements reflected especially in improved system of collection, processing, imputation and recalculation of the statistical surveys and enabled more exact identification of the statistical discrepancies from the real non-observed economy whether legal or illegal.

1. The estimates of non-observed economy in the Slovak Republic are based on the recommendations of Eurostat in this area, which give a standard structure (detailed below) to approach the problem systematically. In the Projects of Eurostat oriented on the non-observed economy the impact was done on exhaustiveness of National accounts, i.e. that GNP and GDP calculations cover not only activities directly observed in statistical surveys or administrative files, but include also activities, which are not directly observed.

2. In addition to this focus on the non-observed economy, it is obvious that all improvements to basic statistics contribute to improving the coverage (exhaustiveness) of the Slovak Republic's National Accounts. The statistical verification, imputations and grossing-ups being used in these surveys, have been proposed in compliance with similar approaches used by EU member countries. Thus, the year 2000 is to be considered as a benchmark year in the System of National Accounts of the SR.

3. In co-ordination with other projects we have succeeded in improving some estimates and calculations related to GDP. The main Annual National Account's improvements have been carried out in following areas:

In the Project „Final Consumption of Households“, a bottom-up method of the compilation of final consumption is being developed in combination with several data sources. The results of this project are reflected also in the construction of other components of GDP.

Within the Project on Supply and Use Tables, a method of the estimation of theoretical VAT has been developed, which independently of the production approach of the calculation of GDP identifies the scope of hidden activities, which have been included into the calculation of GDP.

The results of the Project on “Employment data reconciliation” were continuously applied into the practice of compilation of national accounts and into the linkage of labour force with the estimates of production. This method is used in the estimation of the number of non-registered labour force, i.e. in case of employees of small traders, or small enterprises and in the consequent estimate of value added. It is also the background for the estimate of consumption of resident households abroad and of non-residents in the territory of the SR. In comparison with the previous project, the calculation of GDP (by production approach) includes some new items, for instance tips, production of forest fruits, production of stump wood. Based on statistical surveys, the wages and salaries in kind were explicitly surveyed.

4. Concerning estimates of underreporting, we have not succeeded in obtaining detailed data from Tax Authorities on the results of verifications and audits and no survey has been introduced in this area. Thus, this area is still the weakest area in estimating the non-observed economy.

5. The calculation of the non-observed economy we realize by both, output and expenditure approaches.

6. **All types** of exhaustiveness adjustments that were estimated and included in the GDP by output approach in the year 2000 represented **14.8 %** of GDP. In structure of this data the imputation and calculated fields created 5,3% and **hidden economy 9,5%** (legal and illegal).

Table 1

Exhaustiveness types by output approach of GDP calculation (mil. resp. percentage of GDP)

Institutional sectors	N1	N2	N3	N4	N5	N6	N7	Total	% of GDP
Non-financial sector						21859	2108	23967	2,57
Financial sector								0	0,00
General government sector								0	0,00
NPISH sector								0	0,00
Household sector		3 978	47 684		15 795	46 243	812	114 512	12,26
Total	0	3 978	47 684	0	15 795	68 102	2 920	138 479	14,83
% of GDP	0,00	0,43	5,1	0,00	1,69	7,29	0,31	14,83	

(in 2000 SR GDP = 934 079 SKK)

The lowest hidden economy's share of the GDP was 7,6% (1997) and the largest in year 2000. Since this year the share on the GDP has decreasing trend (in 2002 year 8,7%).

7. The particular components of exhaustiveness are presented according to following types of adjustments (**N1-N7**):

N1 - Enterprises deliberately not registered, legal law unit with 20 and more employees (underground).

N4 - Enterprises deliberately not registered, legal law unit with 19 and less employees.

No estimates of exhaustiveness were made for this items, the register is regularly monthly updated. Analysis of the statistical register showed that all units registered by the end of the year 2000 were included in the file of reporting units for the year 2000 (this assessment is carry out for each year).

8. **N2-** units deliberately not registered. Estimates of some **illegal** activities have been made simultaneously with estimates of the non-observed economy within the framework of legal activities. It is supposed that all kinds of illegal activities might reach about **1 - 3%** of GDP. But until now only estimates for drugs and prostitution were included in the NA, the value added of which represented about 0.4% of GDP.

9. SOSR estimated these types of illegal activities (include illegal imports and exports):

- Trafficking and distribution of illegal drugs;
- Prostitution;

- Selling stolen goods (fencing) and illegal software.

10. **N3 - enterprises not required to register**, under this heading are mainly included the non-market production of households. It means products of households for their own final use; gross fixed capital formation, e.g. own-account construction a/or reconstruction of houses, dwellings and other buildings. Output for own consumption (value added) is 3.6% of GDP. Some additional market activities of households with a low share of the market, mainly such services as tutoring, care-taking, personal services, various repairs etc. were considered under this item. Estimates were based on the results of the inquiry (public opinion poll), which measures the expenditures of households at markets as well as the expenditures of households on various services without receipt. The total value added for the item N3 represents about **5.1%** of GDP.

11. Estimates of production, intermediate consumption and value added for **entrepreneurs** who are not-registered in the business register, and whose economic situation was not surveyed, were classified under **N5 heading**. When making an estimate, data from the sample survey of self-employed (average data) and data from accounting annexes to tax declarations were combined. The estimate of production and intermediate consumptions for entrepreneurs being registered but not surveyed represented 1.7% of GDP.

12. **N6 - Enterprises deliberately misreporting**. In the NA of the SR is assumed that the undervaluation of production and overvaluation of intermediate consumption might occur in all production units, albeit with a differing intensity. The undervaluation of total value added for all units represents about 7.3% of GDP. For the volume estimation several methods a/or approaches are being used:

- a comparison of production and intermediate consumption is made for those selected units, which were audited (big enterprises). The audited data a/or data surveyed on account questionnaires are compared with the corresponding data surveyed from enterprises within the framework of the statistical survey,
- results from the annual statistical survey are compared with the results of quarterly surveys (small enterprises). Particular branches make the analysis separately.

It has been found that the output in quarterly surveys of selected branches is higher in comparison to the annual survey, and conversely the intermediate consumption is lower in some branches.

- The estimate of undervaluation of value added for entrepreneurs is broken down into three parts
- an estimate of wages for non-registered employees;
- an estimate of the undervaluation of salaries being paid;
- an estimate of the undervaluation of the net operating surplus of the entrepreneur.

13. Some additional calculations or estimates which fall into the production framework of the SNA and which can represent non-exhaustiveness in the calculation of GDP were included in item **N7 other statistical non-exhaustiveness**. There are Net increase stump wood and tips. Altogether, item N7 represented about **0.3%** of GDP.

14. The expenditure approach for the calculation of GDP is considered an independent approach in the annual national accounts of the SR. At the same time, it is basic method for the calculation of GDP within the framework of quarterly national accounts. Estimates of the

non-observed economy within the framework of the expenditure approach are presented according to the particular items of final use.

Table 2.

Exhaustiveness types by expenditure approach of GDP calculation (percentage of GDP)

Aggregates of expenditure approach	N1	N2	N3	N4	N5	N6	N7	Total	% of GDP
Household final consumption		4015	21 213				8 420	33 648	3,6
Final consumption of general government								0	0
NPISH final consumption								0	0
Gross fixed capital formation			24 342		658		28 124	53 124	5,69
Acquisition less disposal of valuable							814	814	0,09
Changes in inventories					786		1313	2 099	0,22
Exports		1160					8417	9 577	1,03
Imports		-1196					-9434	-10 630	-1,14
Total	0	3979	45 555	0	1444	0	37 654	88 632	9,49
% of GDP	0,00	0,43	4,88	0,00	0,15	0,00	4,03	9,49	

15. In the case where the expenditure approach of GDP calculation was applied, different data sources to those used in the output approach were used (e.g. household budget surveys, foreign trade statistics). Therefore the particular estimates of exhaustiveness can differ from the estimates showed in the table 1 (mainly in categories N6 and N7). Nevertheless no estimates were made for items N1, N4 and N6. As well no estimate were made for final consumption of non-profit institution and government sectors.

16. In principle, two independent estimates of Households final consumption are prepared, one based on household budget surveys and the next one on the basis of retail trade statistics or other statistics broken down by COICOP.

Both estimates are consequently adjusted by items, which have not been recorded in the basic data source, in order to ensure that the definition of Households final consumption is in line with ESA95 (national and domestic concept).

17. Altogether, exhaustiveness **Households final consumption** items represented **3.6%** of GDP. Under the items of exhaustiveness, only those estimates have been included which correspond to estimates of production and which were not recorded in any of the basic data sources, i.e.:

- wages and salaries in kind (N7);
- production for own final use (N3);
- consumption of drugs (N2);
- consumption of drugs (N2);
- expenditures on prostitution (N2);
- tips (N7).

18. Estimates of the non-observed economy for **Gross fixed capital formation** mainly follow output calculations. Under particular items of exhaustiveness, we include those items of GFCF for which a direct statistical survey has not been introduced:

- grossing up of GFCF for entrepreneurs who did not submit the accounting annex,
- methodological adjustments of GFCF of entrepreneurs,

- estimates of the increase in dwelling construction and the construction of garages and huts,
- purchase of dwellings for private ownership,
- repairs and reconstruction,
- increase of non-produced non-financial assets.

19. The estimates are supported mainly by administrative data. The grossing up in the households sector is mainly in questionnaires. Altogether, the adjustments represented **5.69%** of GDP, of which dwelling construction and construction of garages and huts by households represented 2.6% of GDP.

20. The exhaustiveness adjustments in **Changes in inventories** represented about **0.2%** of GDP. The indicator "Changes in inventories" includes increases of stump wood and balancing item (the use was higher than supply).

21. Estimates being made in the National Accounts that reflect corrections in the amount of exports and imports of goods and services represent **1.03% and 1.14%** of GDP respectively. Data on the export and import of services are carried over from the BoP of the SR. Basic data on the export and import of goods and services are furthermore adjusted within the National Accounts. These adjustments are related to the illegal production and the consumption of non- residents as well as residents.

Conclusion

Previous findings shows, that the calculation is based on the similar practices as those used in another member states and recommended by Eurostat. The calculations were made for the whole time series beginning in 1993. Following table (3) shows the time series since the year 1996. The data for the years 1993-1995 are revising due to the methodological modifications made in 2001-2002.

Annexes.

Table 3 The share of non-observed economy on the SR

	1996	1997	1998	1999	2000	2001	2002
GDP in mill. Skk	638 449	712 679	781 437	844 108	934 079	1 009 839	1 098 658
Gross ups to achieve completeness	91 798	95 498	114 681	125 823	138 402	157 780	147 571
% of gross ups to achieve completeness	14,38	13,4	14,68	14,91	14,82	15,62	14,34
Hidden economy	55 938	53 875	65 984	71 295	88 240	91 106	95 852
% of GDP	8,76	7,56	8,44	8,45	9,45	9,02	8,72

Table 4 Estimates of illegal imports and trade margins.

Year	Value of recovered smuggled goods (mio. SKK)	Value of non-recovered smuggled goods (mio. SKK)	Trade margins (30%) (mio. SKK)	Expenditures of households (mio. SKK)	Share of smuggled goods in imports (%)	Share of value added on GDP (%)
1993		3 731	1 119	4 850	1,5	0,28
1994		4 106	1 232	5 228	1,55	0,25
1995		5 067	1 520	6 587	1,6	0,27
1996		6 679	2 004	8 683	1,65	0,32
1997	2 405,00	7 215	2 165	9 380	1,55	0,31
1998	2 564,00	7 692	2 308	10 000	1,42	0,3
1999	2 448,70	8 198	2 459	10 657	1,5	0,29
2000	2 631,00	8 682	2 605	11 287	1,29	0,29
2001	4 620,80	11 552	3 466	15 018	1,4	0,34
2002	3 618,60	10 856	3 257	14 113	1,32	0,32

Table 5 Estimate of prostitution incomes.

Year	Income from prostitution (VA) (mio. SKK)	Prostitution expenses (mio. SKK)	Prostitution exports (mio. SKK)	Share of VA on GDP (%)	Share of prostitution expenses on FCH (%)
1993	625	214	411	0,16	0,1
1994	793	289	524	0,17	0,11
1995	983	333	650	0,18	0,12
1996	1122	401	721	0,19	0,12
1997	1356	485	871	0,2	0,13
1998	1400	500	900	0,19	0,12
1999	1631	611	1020	0,2	0,13
2000	1863	703	1160	0,21	0,14
2001	2077	800	1277	0,21	0,15
2002	2090	805	1285	0,2	0,14

Table 6 Estimates of drug imports, drug consumption and trade margins.

Year	Drug imports (mio. SKK)	Drug consumption (mio. SKK)	Final consumption of households (bill. SKK)	Share of drug consumption on FCH (%)	Value added (mio. SKK)	Share of VA on GDP (%)
1993	636	2354	219,2	1,07	1718	0,42
1994	792	2933	253,8	1,16	2141	0,44
1995	873	3605	287,1	1,26	2632	0,46
1996	1201	4322	328,6	1,32	3121	0,5
1997	1055	3767	369,6	1,02	2712	0,38
1998	909	3211	413,9	0,76	2302	0,3
1999	937	3262	462,8	0,71	2325	0,28
2000	964	3312	502,5	0,66	2348	0,26
2001	1060	3643	552	0,66	2583	0,26
2002	1175	4051	576,5	0,7	2876	0,27