

# Valuation of Volunteer Work in Satellite Account of Non-Profit Institutions

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## Abstract

Volunteer work constitutes an important input into the activities of non-profit institutions. However, in the core system of national accounts, volunteering falls outside the production boundary even if it leads to the production of services. By doing so, national accounts inevitably underestimates the contribution of non-profit institutions to the well-being. This shortcoming is overcome by the Satellite Account of Non-profit Institutions complementing and extending the concept of national accounts chiefly by incorporation of the value of volunteering and by full coverage of non-profit institutions classified in a number of economic sectors. This paper is an attempt to address the key issue that is the way of volunteer work's valuation for analytical purposes. We will discuss different approaches to the valuation and their impact on key macroeconomic aggregates.

## Keywords

*Non-profit institutions, volunteer work, valuation*

## JEL code

*E23, E24, J30*

## INTRODUCTION

The Satellite account of non-profit institutions (hereinafter “SANPI”) has been enjoying a growing attention of social and economic policy interest. One of the major reason is that non-profit institutions may be seen as a supplement to general government in pursuit of economic and particularly social policies; they are often referred to as “third sector” or “civil society”. In general, activities of non-profit institutions represent a form of social entrepreneurship (Boettke and Coyne, 2009) whose aim is to create a social value (Boschec, 1997). Depending on the number and economic strength, non-profit institutions (hereinafter “NPI’s”) may be a significant economic force in supplying private as well as public goods and services throughout the world.

The institutional background of NPI’s deserves a special attention as they operate in a different incentive schemes compared to private market producers or a majority of government institutions. First of all, non-profit institutions are not legally permitted to distribute profits which must be retained and used for their activity. An owner or founder is thus not motivated to maximise profit for the purpose

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of paying dividends. On the other hand, NPI's might be closely linked to a profit-oriented organisations, as is the case of many foundations or charities established by market producers (Boettke and Coyne, 2009).

The impossibility to distribute a profit might pose a limit on the ways of funding as main objectives are assisting needy people or acquiring reputation. NPI's are thus in a measure funded by voluntary contributions having forms of monetary payments, gifts in kind, but also volunteer time. Time contribution brings us to the key issue which is the labour input employed into the operation of NPI's. To a large extent, the labour input takes the form of unpaid volunteer work, it is not, by convention, considered as source of value added in the core accounts of national accounts. Such conventions gave rise to the need for a supplementary datasets reflecting specific features, as is the case of satellite accounts.<sup>4</sup>

To overcome the simplified convention in the core national accounts, the Satellite account regards unpaid work as a source of value added.<sup>5</sup> Obviously, a number of important questions remains open when it comes to the way of volunteer work valuation. This issue has been widely addressed in economic research. The wage-based valuation has become the most-commonly used technique when valuating volunteer work (Brown, 1999). For example, Salamon, Sokolowski and Haddock (2011) apply the replacement cost method using observed market wages. From available resources, the same method is used for practical compilation by the statistical office in New Zealand (Statistics New Zealand, 2007), etc. However, a number of objections can be raised.

As Brown (1999) claims it does not reflect the willingness of recipient to pay for this service if not donated. According to Brown, this makes the value for recipient overstated while it understates the gains of volunteers themselves (Brown, 1999). Similarly to Brown, Bowman (2009) is critical of the application of replacement costs or demand price. As the author argues, the value should be rather expressed through its impact on the revenues of an organization (Bowman, 2009). To provide an exhaustive discussion goes beyond the scope of this text. The purpose was purely a brief demonstration of differentiating views which may have a significant impact on macroeconomic indicators. To illustrate this, Pho (2008) found out that the value of volunteer work in the US varied between 0.9 and 1.3 of the gross domestic product (thereinafter "GDP") in 2005.<sup>6</sup> It is apparent that quite a lot of research remains to be done.

Valuation of volunteer work is, of course, a subject of interest of not only researches but also organisations promoting the general interests of its members. E.g. the Independent Sector operating in the US publishes the historical time series of the generally accepted value of volunteer work currently standing at 24.14 dollars per hour.<sup>7</sup> The estimation basis is the hourly earnings of workers on private non-farm payrolls average published by the Bureau of Labor Statistics. According to the Financial Accounts Standard Board (1993), the value of volunteer work can be recognized in the financial statement under the condition that

<sup>4</sup> Satellite accounts are recognised internationally as a way of rearranging existing informations in national accounts. They can cover a wide range of areas as agriculture, environment, health, etc. The new generation of the manuals (SNA2008 and ESA2010) gives far more space to this areas of macroeconomic statistics compared to their predecessors (SNA1993 and ESA1995). In the ESA2010, Chapter 22 is exclusively devoted to the issue of the satellite accounts compilation. For the purpose of the SANPI compilation, the United Nations (UN) published the Handbook of Non-Profit Institutions in the System of National Accounts recommending appropriate statistical procedures for the data compilation.

<sup>5</sup> Further important contribution of the Satellite account is the coverage since NPI's are not covered in the basic sector schemes in their entirety. In other words, there is no single sector containing all NPI's operating in the economy.

<sup>6</sup> In 2012, 64.5 million Americans volunteered nearly 7.9 billion hours with an estimated value of nearly \$175 billion, it is 1.08% of the GDP. In New Zealand, non-profit institutions' economic contribution is \$6 billion (2.7% of the total) to the GDP for the year ended March 2013. When the value from the labour of volunteers (\$3.5 billion) is included, non-profit institutions contributed \$9.4 billion (4.4%) to total GDP. In Norway, non-profit institutions are estimated to have contributed NOK 53 billion (1.7%) to the GDP. Including the value of unpaid work, the total value added in the non-profit sector accounted for around NOK 125.5 billion (3.9%) of the GDP in 2014. In the Czech Republic, non-profit institutions contributed 69,5 mil CZK (1.5%) of the GDP in 2014. Including the value of unpaid work CZK 5.8 mil the total contribution is CZK 75.3 mil (1.6%) to the GDP.

<sup>7</sup> <<https://www.independentsector.org/resource/the-value-of-volunteer-time>> [downloaded: 1.8.2017].

the service would have been purchased if it had not been donated. The valuation technique should use relevant market prices of labor by occupation.

The purpose of this paper is to bring a modest contribution to the aforementioned discussion on the volunteer work valuation. We will address the impact of different approaches on the final figures and the relevance of several methods from the theoretical and the practical point of view. The text is based on the practical experience with the compilation of the SANPI in the Czech Republic. The Czech Statistical Office publishes the SANPI in the autumn of each year following the publication of the sector accounts at the end of June. The release covers the year before last, i.e. in October 2016, the SANPI published covers the year 2014 and previous years.

## 1 METHODOLOGY

To begin with, we present the relevant definitions and the classification issue. The restated structural-operational definition of non-profit institutions is used for the purposes of statistical monitoring of non-profit institutions in the Satellite Account of Non-profit Institutions. According to this definition from the Handbook of Non-Profit institutions (UN, 2003), the Satellite Account of Non-profit Institutions consists of economic units which are:

- *organizations*, i.e. they have a certain institutional structure, are legal entities with a certain degree of internal organizational structure,
- *non-profit or non-profit-distributing*, i.e. any generated surpluses are used for the main object of activities which the non-profit institution was established for,
- *institutionally separated from government institutions*, i.e. they are not part of the government apparatus or delegated to exercise state power,
- *self-governing*, i.e. they are able to manage their activities and create their organizational structure,
- *optional*, i.e. their formation, activity and membership in them is voluntary.

The main reason for establishing non-profit institutions is either voluntary or charitable activity, or the effort to support certain groups of people in business, politics, or other areas of social life. Compilation of national accounts requires working with a number of classifications in the Business Registry such as sector classification, classification of branches or, most importantly, so called legal forms. Legal forms reflect the mode of operational functioning of different kinds of units. The delimitation of the sphere composed of NPI's is thus based on the legal forms codes. In 2014, the definition of non-profit institutions meet the following legal forms:

**Table 1** Number of NPIs included into satellite account by legal form for the year 2014

Code	Title	NPI's	NPI's - nonfinancial and financial institutions	NPI's - government institutions	NPISH's
<b>TOTAL</b>		<b>129 061</b>	<b>776</b>	<b>28</b>	<b>128 257</b>
117	Foundation	490	:	:	490
118	Endowment Fund	1 331	:	:	1 331
141	Generally beneficial company	2 867	157	:	2 710
161	Institute	142	:	:	142
601	Public university	26	:	26	:
641	School corporation	236	4	:	232
703	Trade union and employers' organizations	701	6	:	695
704	Special organization <sup>8</sup>	16	:	:	16

<sup>8</sup> For representation of Czech interests in international non governmental organizations.

**Table 1** Number of NPIS included into satellite account by legal form for the year 2014 (continuation)

Code	Title	NPI's	NPI's - nonfinancial and financial institutions	NPI's - government institutions	NPISH's
706	Society	82 778	181	:	82 597
711	Political party, political movement	233	:	:	233
721	Church organisation	4 117	:	:	4 117
733	An organizational unit of a trade union and employers' organizations	5 777	:	:	5 777
736	Branch of society	24 761	22	:	24 739
741	Professional organization/chamber	22	:	:	22
745	Other chamber (excl. professional ones)	207	207	:	:
751	Association of legal persons	1 201	199	2	1 000
761	Hunting community	4 156	:	:	4 156

Source: Czech Statistical Office, <[www.czso.cz](http://www.czso.cz)>

The structure is considerably impacted by existing legislation. In 2014, a massive wave of transformation of non-profit institutions took place following the new civil code entering into force. Among others, associations were replaced by the legal form of “societies”, trade unions and employers’ organizations were separated, generally beneficial societies can be no longer founded and existing entities should be transformed into institutes, foundations of endowment funds. The same holds true for associations of legal persons, even if they continue its activity.

Societies and branches of societies represent the largest group of non-profit institutions. According to relevant legislation which entered into force in 2013, NPI’s are not obliged to report the cessation of their activity. Total numbers of units is thus inevitably overestimated whereas the extent of an overestimation might range from one third to one half of total number. Following the System of National Accounts, the SANPI presents the national economy classified by individual institutional sectors according to the producer type, and by individual industries according to the product type. As shown in Table 1, non-profit institutions are included not only in the sector of Non-profit institutions serving households (S.15 – thereafter “NPISH’s”) but a number of them is included in the institutional sector of non-financial corporations (S.11), financial corporations (S.12) and in the general government sector (S.13), which is the case of public universities and health insurance companies.

Concerning the data sources for the NPI’s, an exhaustive annual statistical survey is conducted for units with 10 and more employees. Units with 0–9 employees are surveyed once in five years, whereas each year a certain legal form is picked to be a subject of survey (or group of legal forms). Data for units with 0–9 employees which are not surveyed in given year are grossed up.

## 2 FUNDING OF NPISH’S AND VOLUNTEER WORK

NPI’s are usually funded differently from other economic sectors. Except for the monetary revenues, volunteer work constitutes an important input. For the sake of the argument, we will firstly take a look at the structure of the monetary resources and the sectoral structure of contributors or donators. Since the relevant breakdown is available for the NPISH’s sector only, we will concentrate on this sector for now. Though, the explanatory power is not much undermined by doing so, because the NPISH’s sector plays a crucial role in the SANPI.

NPISH’s (S.15), as well as NPI’s in their entirety, are funded differently from other economic sectors. While NPISH’s can similarly as other sectors raise revenues from selling its own products or from property

income, about 61.7% of the total income comes from other sectors in form of current transfers. These transfers are recorded under the item D.751 (Current transfers to NPISH's); for other sectors, given transfers are covered by the item D.759 (Other current transfers). The largest transfers came from the government sector (about 50%), the contribution of households to non-profit institutions reached 32% in 2014. On the top of these, the NPISH's collect membership fees and they normally receive donations from other economic sectors, including non-financial and financial corporations. NPISH's may obtain funds from non-profit organisations themselves (especially foundations). Because the sector is consolidated, the amount of these revenues can not be determined.

A very specific source of input into operation of NPI's recorded on the resources side is a contribution of volunteering. Volunteering concerns not only households, but also corporations. Mentioning the work of volunteering brings us to the key question, how the work of volunteers should be valued? The evaluation of volunteer work and its inclusion into the accounts represents an important step beyond the standard framework of national accounts. Unpaid volunteer work does not fall within the production border as defined by the methodology, however, it is unquestionably an important input into the activities of non-profit institutions. Disregarding the volunteer work leads to underestimation of the actual contribution of non-profit institutions to the welfare of the society.

Here, the term volunteer means a person who is not in an employment relationship with an economic entity as regards the respective voluntarily done activity and performs his or her activity without any financial or other remuneration or legal entitlement (including any entitlements arising from obligations of the entity's members according to the statutes or other resolutions adopted by the economic entity). Voluntary workers may be volunteers performing work for an economic entity, on volunteer service, as well as other persons performing work in an organisation without entitlement to remuneration (unpaid members of administrative and control bodies, members of an economic entity and other persons).

It remains valid that it is not possible to establish the number of inhabitants of the Czech Republic performing volunteer work for non-profit institutions on the basis of source data. This is due to the fact that one person can perform volunteer work for several non-profit institutions. Therefore, the number of volunteers is given as a number of natural persons converted on the basis of the number of hours worked by volunteers (full-time equivalent approach, thereafter "FTE"), it means 26414 FTE in 2014. The final surveyed figures are presented in the following table:

**Table 2** Number of volunteers and hours worked in particular kind of NPI (2011–2014)

	Non-profit institutions according to number of employees	Year	Number of volunteers	Hours worked by volunteers	Average of hours worked per 1 person
0–9 employees	Churches	2011	20 207	1 309 148	65
	Society/association	2012	608 693	30 465 085	50
	Branch of society/ Organizational components of associations	2012	300 958	8 633 959	29
	Generally beneficial societies/ institutes	2013	3 820	215 883	57
	Foundation, Endowment fund	2014	4 243	241 681	57
	Others	2015	8 860	201 851	23
More than 10 employees	Churches	2014	11 012	198 108	18
	Society/association	2014	194 615	15 538 884	80
	Branch of society/ Organizational components of associations	2014	1 440	52 520	36
	Generally beneficial societies/ institutes	2014	4 663	209 367	45
	Foundation, Endowment fund	2014	19	1010	53
	Others	2014	633	40 325	64

Source: Fořtová (2017)

### 3 VALUATION OF VOLUNTEER WORK IN THE CZECH REPUBLIC

In December 2005, the Working Group for the Implementation of the Satellite Account of Non-profit Institutions in the Czech Republic held a seminar on the issues related to the valuation of volunteer work. After having heard various views and proposals, they decided to adopt the method of valuation by means of the median determined on the basis of the results obtained from the Average Earnings Information System (thereinafter “ISPV”), which is carried out by the Statistical Services Department of the Ministry of Labour and Social Affairs, on salary and remuneration for stand-by duty in budgetary and certain other organizations and bodies. In 2007, the Satellite Account of Non-profit Institutions was first compiled for 2005, including the imputed value of volunteer work. For the year 2012, the valuation of volunteer work was reassessed.

The valuation method using the median determined on the basis of results from the ISPV has been preserved. After having heard different opinions of users on the level of the median and processing of analyses themselves, the decision of the Czech Statistical Office was to use the median value of wages in the Czech Republic which corresponds to the salaries in the non-profit sector more than the median value of the salary in the Czech Republic.

For the year 2014, the median value of salaries in the Czech Republic according to the ISPV reached CZK 127.24 /hour. The number of hours worked by volunteers, that the Czech Statistical Office obtained from the statistical surveys by means of the questionnaires NI 1–01 (a), was multiplied by this median. The following table lists the valuation of volunteer work for non-profit institutions and the median value of wages in the Czech Republic for the years 2005 to 2014.

**Table 3** The valuation of volunteer work for non-profit institutions in total from 2005 to 2014

Year/ sector	Number of hours volunteered				Valuation of volunteer work (CZK million)			
	in S.11, S.12	in S.13	in S.15	Total	in S.11, S.12	in S.13	in S.15	Total
2005	168 872	0	62 819 667	<b>62 988 539</b>	17	0	6 219	<b>6 236</b>
2006	233 680	0	48 650 387	<b>48 884 067</b>	25	0	5 152	<b>5 177</b>
2007	288 483	0	82 937 006	<b>83 225 489</b>	33	0	9 396	<b>9 429</b>
2008	530 707	0	46 674 947	<b>47 205 654</b>	64	0	5 602	<b>5 666</b>
2009	287 072	0	46 890 116	<b>47 177 188</b>	35	0	5 734	<b>5 769</b>
2010	299 531	0	44 021 402	<b>44 320 933</b>	37	0	5 479	<b>5 516</b>
2011	292 602	0	44 892 904	<b>45 185 506</b>	37	0	5 634	<b>5 671</b>
2012	180 088	116	44 686 130	<b>44 866 334</b>	23	0	5 648	<b>5 671</b>
2013	184 448	2 436	43 579 217	<b>43 766 101</b>	24	0	5 509	<b>5 533</b>
2014	106 118	2 132	45 499 777	<b>45 608 027</b>	14	0	5 789	<b>5 803</b>

Source: Notes on Satellite account of NPI's, CZSO (2016a)

The evaluated volunteer work is recognized in the Satellite Account of Non-profit Institutions as part of the Wages and Salaries (D.11) item. The increase in item D.11 is reflected in the change to the total remuneration of employees (D.1) and in the balance items (the operating surplus, disposable income, net savings, net loans, and other). For S.15, the non-market output (P. 132), which is calculated using the cost method, increases correspondingly.

### 4 ALTERNATIVE APPROACHES TO THE VALUATION OF VOLUNTEER WORK

As mentioned above, the wage-based valuation is widely used but not a single method. A practical appropriateness and readily accessible data for valuation do not imply a conceptually correct and the most appropriate measure. At least two questions should raise in this case. What kind of data is available

for the estimation of volunteer work? Will using alternative method lead to rather different outcomes? To bring the evidence from the Czech economy, Table 4 represents the results of alternative methods.

**Table 4** Alternative approaches to valuation of volunteer work, the Czech Republic, CZK mill.

Valuation of volunteer work (CZK mill)					
Institutional sector	1. Hour wage median for the CR (ISPV)	2. Minimum wage	3. Hour wage median for the CR (ISPV) - by NACE	4. Hour wage median for the CR (ISPV) - by type of work	5. Hour wage median for the CR (ISPV) - salaries
Non-financial corporations	14	5	10	16	15
Financial corporations	0	0	0	0	0
Government institutions	0	0	0	0	0
Non-Profit institutions serving households	5 789	2 302	5 058	6 079	6 629
Total	5 803	2 307	5 068	6 095	6 644

Source: <www.czso.cz>, <www.ispv.cz>, own calculation

Table 4 shows the results of five different methods. The first method, which uses the hour wage median of wages according to the IPSV, represents the currently used approach in the Czech Republic as was described above. The second method uses the minimum wage set by government. Using the legally set minimum wage, we arrived at much lower value of volunteer work. The evident disadvantage of this approach subsists in the general nature of the minimum wage which is oriented on manual work. However, volunteer work consists largely in expert work as social assistance, accounting, etc.

The third method incorporates data on volunteers work by the statistical Classification of Economic Activities in the European Community (thereinafter “NACE”) in combination with the median of hour wage by the NACE codes from the ISPV. The advance is the availability of data by the NACE classification, however, the NACE classification is not entirely appropriate as the units are classified by their prevailing activity here. Nevertheless, the NPI’s normally carry out more than one activity, as well as workers volunteering in these institutions. The classification COPNI<sup>9</sup> (Classification of Services of Non-profit Institutions Serving Households by Purpose) seems to be much more suitable for this purpose. However, the problem with data availability usually occurs, i.e. structure of wages by COPNI, which is also currently the case in the Czech Republic.

The fourth method using hour wage median by type of work seems to be very appropriate; it is used in some countries (Poland, New Zealand) depending on the data availability. In the Czech case, the ISPV publishes data on median wage by type of work, even in more detailed breakdown. However, the data for NPI’s are not very detailed providing very rough structure of work types (three groups), as shown in Table 5.

**Table 5** Number of hours and valuation of volunteer work by type, the Czech Republic, 2014

Value of volunteer work by type	Hours worked	Valuation (CZK mill)
Managers and Professional mental work	14 994 999	2 729
Clerical support workers, Services and Sales workers, Craft and related trades workers	24 731 614	2 703
Plant and machine operators and assemblers, Elementary occupations	5 879 282	663

Source: <www.czso.cz>, <www.ispv.cz>, own calculation

<sup>9</sup> COPNI is surveyed since 2012 in the Czech Republic. It is intended for the monitoring of the purpose which the funds of NPI’s were spent on. This data is supposed to better describe actual spheres in which NPI’s are active.

The last method incorporates hour wage median by salaries as provided by the ISPV. As mentioned above, this method does not correspond to wages in the sector of NPISH's because the salaries, i.e. the compensations of civil servants, are bigger than wages of workers in the corporate sectors. This calculation provides the total value of volunteer work by CZK 800 bill. higher compared to the first method, which is used now.

To compare the results in relative terms, the following table summarises the impact of alternative method on the gross value added (GVA) of the NPISH's (S.15) and in the SANPI. The currently applied method led to an increase in GVA of NPISH's by 17% and of SANPI 7.2% in 2014. Except for the second method, which seems to be clearly inappropriate, the other method working with structural indicators of work or salaries gave results not significantly different from the method applied in the compilation of the SANPI in the Czech Republic. For the third method, the impact on GVA would be only by 1.8 in NPISH and 0.9 in SANPI percentage point lower. In case of the fourth method, which seems to be the most appropriate from the theoretical point of view, the impact on GVA would go up by 0.7 in NPISH and 0.3 in SANPI percentage point.

**Table 6** An impact of alternative approach to GVA, differences in the average wage, the Czech Republic, 2014

	1. Hour wage median for the CR (ISPV)	2. Minimum wage	3. Hour wage median for the CR (ISPV) - by NACE	4. Hour wage median for the CR (ISPV) - by type of work	5. Hour wage median for the CR (ISPV) - salaries
Impact to GVA of NPISH (S.15)	17.0%	7.6%	15.2%	17.7%	19.0%
Impact to GVA of SANPI	7.2%	3.0%	6.3%	7.5%	8.1%

Source: <www.czso.cz>, <www.ispv.cz>, own calculation

## CONCLUSION

The paper discussed the issue of the volunteer work valuation for the sake of the compilation of the SANPI. The specific nature of the NPI's requires to add the value of volunteer work in the relevant aggregates describing the economic behaviour of this segment of the economy. We discussed alternative method which can be used for this purpose. Final choice is usually affected by data availability. As shown in the table 6, except for one method, the methods did not result in significantly different outcomes. At the same time, the valuation of work by type seems to be the most appropriate but data-intensive method. However, using this method based on rough structure as provided by the ISPV, we arrived at the results not significantly different compared to the currently applied method which seems to be sufficient. But it does not rule out further improvements when it comes to relevant data sources and a choice of method to make the result more precise.

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