

Ewelina RABIEJ, PhD

Institute of Economics and Finance, University of Rzeszów

e-mail: erabiej@ur.edu.pl

ORCID: 0000-0003-0420-5217

DOI: 10.15290/oes.2020.04.102.03

THE FINANCING OF HEALTH CARE IN INSURANCE SYSTEMS AND THE SUSTAINABILITY OF PUBLIC FINANCES¹

Summary

Purpose – The purpose of the paper is to examine the relationship between the organisation of the state (determined by selected characteristics, i.e. the organisational structure model and the position of the SNG sector) and the organisation of the health care system, and an indication of the possible consequences for the sustainability of public finance.

Research method – The author uses a method of descriptive analysis and the analysis of statistical data on health care expenditure in 12 EU Member States with an insurance model of health care. The quantitative analysis was based on the latest available statistical data (2017) from the OECD, the WHO and Eurostat databases (according to ICHA and SHA2011).

Results – It was concluded that despite the legal separation and theoretical independence from the budget system, the insurance model of health care may pose a threat to the sustainability of public finance. This applies both to the state budget and the SNG sector, which is particularly vulnerable in countries where the decentralisation of public services is not accompanied by an appropriate design of the financing system.

Originality / value / implications / recommendations – This paper discusses the problem of the compatibility of the health care system and state organisation, omitted in literature, including the position of the SNG sector, in the context of fiscal sustainability.

Keywords: health care system, public finance, sustainability

JEL Classification: G38, H51, H72, H75, I13, I18

1. Introduction

Health care is one of the most important areas of realising public tasks, while the health care system is the key module of state organisation which supports socio-economic development. Its main purpose is the health care safety of citizens, which is understood both in terms of individual health care and collective needs [Leowski, 2018, p.71].

The health care system possesses a complex structure which is the resultant of many conditionings as the result of which the solutions adopted by particular

¹ Article received on 28 March 2020, accepted on 29 May 2020.

countries in the sphere of health care are varied, both in terms of organising and financing health care. The systems are being shaped in certain conditions of demographic, epidemiological, social, political, and economic type, but are not constant. This makes it vital to adjust the solutions, which are existing already, to the current situation. Therefore, health care systems are still evolving, while the necessity to carry out new reforms is their immanent characteristic.

In the majority of countries worldwide the state assumes responsibility for the health of its citizens, which means that health care system must be “composed” into the state organisation and the public finance system. This combination results in the following feedback: the destabilisation in the health care system caused by various (frequently external) factors may lead to the destabilisation of public finances. On the other hand, the lack of stability in the public sector may either disturb or even prevent appropriate functioning of the health care system. Therefore, the following question arises: Is it feasible to isolate such components of health care systems - specific solutions that bring higher risk connected with the destabilisation of public finance? Are there any mechanisms that may counter this?

The research problem formulated in this way is obviously very extensive. This paper focuses only on selected aspects. The subject of the research concerns the insurance model of health care, which, as it appears, has less destabilising impact on public finance than budget models. The analysis was made based on the experiences of 12 member states of the European Union: Austria (AT), Belgium (BE), Croatia (HR), the Czech Republic (CZ), France (FR), the Netherlands (NL), Lithuania (LT), Luxembourg (LU), Germany (DE), Poland (PL), Slovakia (SK) and Hungary (HU)². Particular attention was drawn to the distribution of public tasks in terms of health care between central, regional, and local authorities, i.e. the subsector *subnational government* (SNG) and the structure of financing health care resulting from the adopted solutions. The starting point for the research was the theory of fiscal federalism.

The purpose of the paper is to analyse the relationship between the organisation of state (specified by selected characteristics, i.e. the model of organisational structure and the position of SNG subsector) and the organisation of health care in the insurance system as well as to indicate the possible consequences for the sustainability of public finance.

In the paper the method of descriptive analysis and the analysis of statistical data regarding the expenditure on health care in the analysed countries was utilised. The quantitative analysis was made using the latest available statistical data (2017) from the OECD, the WHO and Eurostat which is collected in accordance with the *International Classification for Health Accounts* (ICHA) and the methodology known as *A System of Health Accounts 2011 – SHA2011* [OECD, Eurostat, WHO, 2017]. In accordance with SHA2011, the subject of national health accounts is only current expenditure. The paper focused on the analytical *Classification of Health Care Financing Schemes – ICHA-HF*. According to ICHA-HF there are four main schemes isolated:

² Other EU countries use the budget model.

- HF.1 – the system of financing via central and local institutions (HF.1.1), compulsory health insurance (HF.1.2), compulsory medical saving accounts (HF.1.3);
- HF.2 – the system of voluntary financing via insurance and subscriptions;
- HF.3 – direct expenditure of households, the so-called *out-of-pocket payment*;
- HF.4 – the system of financing via foreign insurance institutions.

Detailed analysis concerned the first scheme (HF.1), i.e. the system of financing health care via central and local institutions, compulsory health insurance and compulsory medical saving accounts.

2. State organisation versus the sustainability of public finance

According to IPSAS, *long-term fiscal sustainability* means the capability of the public sector to perform public tasks and meet financial obligations both now and in the future [IFAC, 2020, p. 2674]. Therefore, the aim of stabilising public finance is not the budget balance itself, but to avoid distortions in the public finance sector and to ensure such levels of solvency that will enable effective realisation of public tasks [Alińska et al., 2018]. To quote Wójtowicz [2019, p. 44], “the sustainability of the public finance (fiscal) sector constitutes one of the conditions of long-term economic sustainability and the stability of the financial system and additionally it is an instrument to achieve sustainable and long-lasting socio-economic development”.

Fiscal sustainability ought to be analysed not only in global aspects, in the perspective of the state budget, but also from the point of view of the SNG subsector. It is particularly important in the situation when it is responsible for the realisation of essential cost-absorbing public tasks. As emphasised by Poniatowicz [2018, p. 37] “during the analysis of the theoretical premises of the division of tasks between a state and a local government it is necessary to define the character of the relations between the central authorities and the local ones”. In this context what matters is the model of the organisational structure of the state (unitary or federal), the number of levels and SNG units as well as the degree of the decentralisation of authority. These characteristics are referred to as the “organisation of state”.

The possibility of realising public tasks is determined by the economic position of SNG units. In accordance with the European Charter of Local Self-government, the amount of financial resources of local communities ought to be adjusted to the range of entitlements granted to them by legislative regulations [Europejska..., 1985]. As emphasised by Patrzalek [2019, p. 10], the division of public tasks between the government administration and particular levels of local administration should take into account the principle of subsidiarity, independence and responsibility of local territorial organs for the management of public resources. Imprecise determination of competences leads to the shedding of responsibility and in the situation of under-financing, it causes the abandonment of the realisation of tasks that are considered as non-obligatory [Dercz et al., 2013, p. 135; Owskiak, 2017, p. 626]. Poniatowicz [2018, p. 11] draws attention to the fact that in many countries

fiscal decentralisation is not adjusted to the ranges of systemic and administrative decentralisation, which may hinder “the optimal realisation of public tasks and rational management of public funds at the local level”. Piotrowska-Marczak [*Federalizm...*, 2009, p. 26] defines it as “*the problem of inadequacy or vertical fiscal instability*”.

The concept of public finance and the problem of rational management of public funds are at the root of the theory of fiscal federalism [*Federalizm...*, 2009; Poniatowicz, 2018]. This theory is concentrated on seeking the optimal range of public sector decentralisation, both from the point of view of the effective realisation of public tasks and the maintenance of fiscal sustainability. Poniatowicz emphasises that the differentiation of decentralisation levels has influence on the economic importance of SNG sub-sector in the public finance system and the ability of SNG units to realise public tasks.

TABLE 1

**The basic characteristics of SNG subsector in selected countries
of the European Union in 2018**

	The number of SNG levels / SNG units	The expenditure of SNG (in % GDP)	The share of SNG expenditure in the total expenditure of the public finance sector (in %)	SNG expenditure on health care (in % GDP, 2017)	The share of SNG expenditure on health care in the total SNG expenditure (in %, 2017)
<i>federal states</i>					
AT	2 / 2.105	17.2	35.5	4.6	26.4
BE	3 / 597	27.1	51.8	1.1	4.2
DE	3 / 11.431	21.2	48.4	0.5	2.2
<i>unitary states</i>					
CZ	2 / 6.272	11.7	28.7	1.5	13.9
FR	3 / 36.089	11.1	19.7	0.1	0.7
HR	2 / 577	12.1	26.1	2.5	22.0
HU	2 / 3.197	6.1	13.1	0.3	4.1
LT	1 / 60	8.1	23.7	1.5	19.1
LU	1 / 102	4.8	11.2	0.0	0.8
NL	2 / 367	13.0	30.8	0.5	3.7
PL	3 / 2.873	14.2	34.1	2.0	15.1
SK	2 / 2.937	7.1	17.4	0.2	3.3

Source: own elaboration based on: [OECD, 2019].

The administrative structure of the 12 countries analysed is diverse, starting from the most complex structure in France to the simplest structure in Lithuania. Three countries have federal character – Austria, Belgium, and Germany (2-3 SNG levels), while others are unitary (1-3 SNG levels) (table 1). The values of the indicators of

financing activity by the units of SNG sub-sector confirm their diversified economic position. According to the OECD data, SNG expenditure on average constitutes 9% GDP and 24% of public spending - higher figures are observed in highly developed countries which all the analysed countries can be defined as. In Austria, Belgium and Germany, i.e. federal states, the indicators were higher than in all the other analysed countries where they possess character of a unitary nature (table 1). The diversified level of the indicators of financing activity in the SNG sub-sector may result from a varying scope of public tasks ascribed to various levels of government, cost-absorbency of these tasks depending on the sector and financial possibilities of SNG units [OECD/UCLG, 2016].

According to M. Poniatowicz, the analysed countries may be divided into five groups according to the criterion of the level of the development of self-governance. The first group representing the most developed model of territorial self-governance includes Luxembourg. The second group, which includes the territorial self-government functioning in accordance with the standards of modern public management (but less efficient and effective), comprises Austria, the Netherlands and Germany. The third group with the average level of efficiency and effectiveness as regards territorial self-governance includes Belgium and France. Most analysed countries – the Czech Republic, Lithuania, Poland, Slovakia, and Hungary – are in the fourth group of countries where the indicators of public management are below the average EU level. What can be observed here is the weakening of self-government and the tendency to recentralise. The last among the analysed countries (Croatia) is classified in the fifth group of countries where the standards of modern management are violated [Poniatowicz, 2018, p. 28].

3. The realisation of public tasks related to health care in the insurance model

In economic sciences four basic models of health care systems are isolated: the insurance model (established by Bismarck), the budget model (Beveridge model), the socialistic model (Siemaszko model) and the residual (market) model. The distinction results from the specific solutions adopted in the sphere of organisation and financing of health care [Lenio, 2018; Sygit, 2017; Suchecka, 2016; Leowski, 2018]. Just as there are few fully centralised countries of both unitary and federal character [*Federalizm...*, 2009, p. 17], also the isolated models of health care systems in principle do not occur in their pure form - all of them are of mixed type (the so-called hybrid models). In literature, several characteristic features of health care systems are distinguished. One of the main grading criteria is the main source of financing medical services [Bromber et al., 2020; Golinowska, Tambor, 2014; Ostrowska et al., 2017]. In the insurance model, which is the focus of the research, the main source of financing is universal health insurance. Insurance contributions are pooled in separate funds managed by autonomous insurance institutions which are most frequently referred to as Sickness Funds.

The analysis of the organisation and financing of health care in the insurance model in 12 selected countries proves that particularly versatile solutions are used. According to Bromber et al. [2020, p. 56] it results from numerous factors which determine the final form of the health care system (including political factors), the preferred financing manner as well as demographic and historical conditionings. As a consequence, there will be a variety of public tasks realised by the central, regional, and local authorities.

In six of the countries analysed (Austria, Belgium, Croatia, Czech Republic, Germany and the Netherlands) the health care systems have a decentralised character. However, at the same time in Austria and Germany there can be observed centralising tendencies which are visible, among others, in the decreasing number of insurance institutions and the consolidation of the sector. Polish and Slovak systems are referred to as the partly decentralised ones, which results from the fact that the decentralisation regards chiefly the realisation of health care – the services are provided by a large number of dispersed medical entities (public and private). Additionally, in Poland attention is drawn to the so-called “dispersed ownership”, which refers to the situation where there are hospitals and public health centres possessing similar profiles where the creating entities are SNG units at various levels. It causes the dispersion of competences and obligations as well as not identified competition for public funds.

The health care systems in France, Luxembourg, Hungary, and Lithuania have a centralised character. France is a specific example of a unitary state with a very large number of SNG sub-sector units which are diverse both in terms of the area and the number of inhabitants. As Piotrowska-Marczak emphasises [*Federalizm...*, 2009, p. 130], “the example of France shows that too large a number of local territorial units may hinder decentralisation as it is impossible to burden small municipalities with far-reaching powers”. The centralisation of the Hungarian system, which has taken place since 2011, has a political character.

The basis of the functioning of the health care insurance model are insurance institutions. In six among the analysed group of countries (Croatia, France, Luxembourg, Poland, Hungary and Lithuania) health contributions are pooled by one insurance institution³. In Austria, Belgium, Czech Republic, Germany, the Netherlands, and Slovakia there are several institutions and also private ones. Diverse regulations exist regarding the sum of insurance contributions, their construction and the number of people who are obliged by law to pay them. A contribution usually has a paritarian character, it is financed by an employee, an employer and state – transfers from the budget are allocated for insurance coverage of selected groups of population (children, unemployed, pensioners, etc.). In Croatia, the obligation to pay health contributions refers to only approx. 30% of the population. In the Czech Republic, the contributions for more than 60% of population are guaranteed from the state budget, which is not beneficial because the

³ It regards the universal health care insurance system, with the exclusion of the institutions organising voluntary and private health insurance.

state pays lower contributions than for the employed people. In Hungary, health contributions are a part of social insurance and does not constitute a separate fund, owing to which the value of funds allocated for health care is subjected to fluctuations, depending on the current priorities of the government [OECD, WHO, 2019; Progress..., 2012; *Organizacyjne...*, 2019].

The analysis of specific solutions adopted in the selected countries demonstrates that the range of tasks in the sphere of health care, which are realised by the central authorities and SNG sub-sector is diversified. These tasks may be divided into four main groups depending on their function – there will be tasks in the spheres of legislation, planning, realisation and financing (co-financing). In all the countries legislation is the domain of central authority. Austria is the sole country where SNG sub-sector realises tasks in all the aforementioned spheres, including the legislative tasks. In most countries (Belgium, Croatia, Czech Republic, France, the Netherlands, Lithuania, Germany and Poland) the authority decentralises the tasks related to planning, realisation and financing (in a varying range), with the exclusion of the sphere of legislation. In Slovakia and Hungary, the tasks of SNG sub-sector units come down to the realisation and financing of health services, while in Luxembourg – solely to realisation [Progress..., 2012].

4. The financing of health care

The basic indicator that characterises the health care system is the current expenditure on health care expressed as a share of the GDP. In all the countries analysed the values of this indicator oscillate from 5.48% in Luxembourg, through 6-7% in Croatia, Czech Republic, Lithuania, Poland, Slovakia and in Hungary up to 10-11% in Austria, Belgium, France, the Netherlands and Germany. The assessment of the participation of current expenditure on health care in GDP obviously ought to take into consideration the value of GDP in a particular country. The total values are used in the construction of the second indicator, i.e. the current expenditure on health care *per capita*. In the countries analysed it fluctuates from less than € 1.000 in Croatia, Lithuania, Hungary and Poland, to the level of € 4.000-5.000 in Austria, Belgium, France, the Netherlands, Germany and Luxembourg. The analysis of the current expenditure on health care *per capita* in PPS⁴ shows that the differences are slightly smaller, but still the values of the indicator differ from only 1.277 in Croatia to 4.300 in Germany (table 2).

⁴ PPS – *purchasing power standard* – artificial currency unit used by Eurostat to make comparisons at the international level.

TABLE 2

**The indicators of the health care financing level
in selected European Union countries in 2017**

	The current expenditure on health care in mln €	The current expenditure on health care in % GDP	The current expenditure on health care <i>per capita</i> in €	The current expenditure on health care <i>per capita</i> in PPS
<i>federal states</i>				
AT	38.457	10.40	4.371	3.875
BE	45.405	10.34	3.992	3.553
DE	368.597	11.25	4.459	4.300
<i>unitary states</i>				
CZ	13.864	7.23	1.309	2.096
FR	259.638	11.31	3.883	3.626
HR	3.326	6.79	805	1.277
HU	8.535	6.88	872	1.468
LT	2.724	6.46	963	1.605
LU	3.031	5.48	5.083	3.633
NL	74.448	10.10	4.346	3.791
PL*	27.756	6.52	731	1.440
SK	5.721	6.74	1.052	1.609

*year 2016.

Source: own elaboration based on: [www 1].

The analysis of ICHA-HF indicates the diversification of the health care financing structure. The basic system in all the countries are obviously the compulsory health insurances (HF.1.2), however their share in the total expenditure is very diversified: from 44% in Austria to greater than 70% in Croatia, France, the Netherlands, Germany and Slovakia and the highest (79%) in Luxembourg. The financing structure in HF.1 system, which is defined as public/compulsory, is supplemented by the funds spent by the institutions at central and local level – they amount to less than 10% of the total current expenditure on health care in Croatia, France, the Netherlands, Luxembourg, Germany, Hungary and Slovakia, 10% in Poland, 13% in the Czech Republic, 21% in Belgium and 30% in Austria⁵. In total, public funds amount to: 67% in Lithuania, 69% in Poland and in Hungary, 70-80% in Austria, Belgium and Slovakia, and less than 80% in Croatia, the Czech Republic, France, the Netherlands, Luxembourg and in Germany. Other

⁵ In none of the analysed countries there was activated the financing of health care in the system of compulsory medical saving accounts (HF.1.3).

systems – HF.2, HF.3 and HF.4 are related to private financing which equals from 16% in France, Luxembourg and Germany to 31% in Poland and in Hungary as well as 33% in Lithuania (table 3).

TABLE 3

The indicators of the health care financing structure in selected European Union countries according to ICHA-HF in 2017 (in %)

	HF.1.				HF.2	HF.3	HF.4
	HF.1.1	HF.1.2	HF.1.3	Σ			
<i>federal states</i>							
AT	30	44	-	74	7	19	-
BE	21	56	-	77	5	18	-
DE	6	78	-	84	3	13	-
<i>unitary states</i>							
CZ	13	69	-	82	3	15	-
FR	5	78	-	83	7	9	-
HR	6	77	-	83	6	11	-
HU	8	61	-	69	4	27	-
LT	9	58	-	67	1	32	-
LU	5	79	-	84	4	11	1
NL	7	75	-	82	7	11	-
PL	10	59	-	69	8	23	-
SK	2	78	-	80	1	19	-

Source: own elaboration based on: [www 2].

The analysis conducted shows considerable differences in the level of financing health care between the countries analysed and the diversification in the structure of financing health care in spite of the fact that all of the countries analysed used the same model of health care system which is based on compulsory health insurance.

For analytical purposes it appears to be reasonable to isolate from the HF.1.1 system the financing scheme by government institutions (*state/regional/local government schemes* – HF.1.1.2). It includes the expenditure of all the units of the SNG sub-sector. Owing to the diverse character of organising this sub-sector in particular countries, SNG units may participate in the health care system in two different ways – as the units with main responsibility for ensuring access to health care or/and as the units that administrate government programs at the central level [OECD, Eurostat, WHO, 2017, pp. 166, 449]. According to OECD data, the SNG expenditure on health care on average amounts to 1.5% GDP, where in unitary states they are at slightly lower level: 1.2% GDP, while in federal states – at a considerably higher level: 3.4% GDP, which appears to be connected with a wider range of public tasks of SNG sub-sector in federal states [OECD/UCLG, 2016, p. 24].

The average value of the indicator of SNG expenditure on health care for UE28 amounts to 2.1% GDP – yet most UE28 countries have unitary character; only Austria, Belgium, Germany, and Spain are federal states. In the countries analysed here the indicator amounts to less than 1% GDP in Luxembourg, France, Slovakia, Germany and Hungary, from 1% to 2% in Belgium, Czech Republic, Poland and Lithuania and more than 2% in Croatia (2.5%) and Austria (4.6%) (table 1).

The second key indicator– the share of SNG expenditure on health care in the total expenditure of SNG according to OECD database oscillates at the level of 9.4%, but (similarly to the first indicator) it is slightly lower in unitary states – 8.3%, and considerably higher in federal states: 15.3% [OECD/UCLG, 2016, p. 27]. The average value of the indicator for UE28 is 13.4%. In the countries analysed the indicator is as follows: less than 5% in Belgium, France, the Netherlands and Luxembourg, Germany, Slovakia and Hungary, while in other nations it amounts to more than 13%. Similarly to the first indicator, it achieves the highest value in Austria which is a federal state (26.4%) and in Croatia which, in turn, is a unitary state – 22% (table 1). Therefore, it appears that the value of both indicators in the countries analysed is to a larger degree connected with the solutions from the specific health care model than with the character of the state (either federal or unitary) and with the structure of the SNG sub-sector.

5. Conclusions

The conducted research has shown that the insurance health care model, despite legal separation and self-reliance understood as the independence from the budget system, may constitute a hazard for the sustainability of public finance. It regards both the state budget and SNG sub-sector (in a narrower sense), which is particularly exposed in those countries where the decentralisation of public tasks is not accompanied by proper construction of the financing system (the problem of “fiscal inadequacy”).

The analysis of the experiences of 12 EU countries has shown that the aforementioned independence of the insurance model is purely theoretical. Although health care contributions are the dominating source of financing health care, their share in the total expenditure on health care frequently oscillates at a rather low level of 50-60%. In systems, there are numerous exemptions from the payment of the contribution and a part of contributions is financed directly from the state budget. On the one hand, it leads to the depletion of the insurance fund, but on the other hand it causes a burden for the budget.

A threat to fiscal sustainability appears when a state is incapable of performing its tasks related to health care. Such a situation may be the consequence of long-lasting under-financing of the health care system (in Poland, Lithuania, Hungary, Croatia) or be related to a sudden condition that has external reasons. In such circumstances there emerges the necessity to increase budget revenues and/or reduce other expenditure. The fiscal hazard of this type regards not only health care

systems financed through taxes, but also the insurance model [Thomson et al., 2009, p. 5]. Ultimately, a state is always responsible for public health.

As Golinowska and Tambor [2014, p. 208] emphasise, “the balance of social health insurances constitutes a serious and universal problem for public finance in all countries, irrespective of the level of revenues”, which leads to further reforms of the health care system, including the change of the insurance model into the budget model. Presently there can be observed the evolution of health care systems in opposite directions as if in search of the golden mean: the states with the insurance model more frequently make use of the instruments that are characteristic for the budget model and vice versa. In the countries with a decentralised organisation one can observe recentralisation and vice versa. According to Golinowska and Tambor [2014, p. 210] health care systems that are “away from governments, more local or decentralised, may bring more confidence”. Smaller vulnerability to the current policy and the impacts of interest groups is an essential criterion for the assessment of the health care model.

There are no ideal solutions. Health care systems ought to be “composed” into state organisation and synchronised with the other functions, “made to measure” [Kutzin et al., 2017]. This makes it possible to reduce the risk connected with the destabilisation of public finance and facilitates proper functioning of the health care system, which is conducive to long-lasting sustainable socio-economic development [Rabiej, 2017].

In 2020 it appeared that apart from the traditionally listed factors posing a hazard to the stability of health care systems such as economic slowdown, unfavorable demographic changes or civilization diseases there suddenly emerged another very serious hazard related to contagious diseases. The COVID-19 pandemic turned out to be a challenge not only for those health care systems that are poorly organised or financially inefficient, but also for those most efficient ones. Going beyond the frameworks of the conducted analysis it appears to be reasonable to state that the time of the organisation of health care in a local/regional/national perspective has come to an end. The globalisation of life entails internationalisation or even globalisation of health care systems. In the widest perspective in this way the financial stability of these systems as an essential determinant of fiscal stability as well as stable and sustainable development should be considered.

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