Analiza trenda “out-of-pocket” zdravstvenih troškova u Republici Srbiji

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Rezime. U radu je data analiza zdravstvenih troškova, koje stanovništvo Srbije izdvaja iz sopstvenih sredstava, koristeći standardne ekonomske indikatore. Takva vrsta troškova se naziva i “troškovi iz džepa” (eng. Out-Of-Pocket Expenditure - OOPS). Svrha ove studije je da pokaže nivo finansijskog opterećenja građana kao i do koje mere su OOPS uticali na korišćenje zdravstvene zaštite. Posmatrane teme uključuju OOPS kao procenta ukupnog troška za zdravstvo i procenat privatnog troška na zdravstvo bazirano na podacima Svetske zdravstvene organizacije. Dobijeni rezultati ukazuju da postoji opšti trend rasta OOPS-a u svim posmatranim slučajevima.

Ključne reči: troškovi iz džepa; zdravstvene usluge; potrošnja domaćinstva; analiza trenda.

Trend analysis of out-of-pocket health expenditures in the Republic of Serbia

Abstract. In the paper is given a trend analysis of out-of-pocket health expenditures in Serbia with using standard economic statistical indicators. The purpose of the study is to show the extent to which out-of-pocket health expenditures have influenced the general access to medical services. Examined topics cover out-of-pocket expenditure, as percentage of total health expenditure and as percentage of private health expenditure based on World Health Organisation data sets. Obtained results indicate that there is an overall growing trend in out-of-pocket expenditure in both governmental and private sectors.

Keywords: out-of-pocket health expenditure; health services; household expenditure; trend analysis.

1. Introduction

In the health care financing sector out-of-pocket health expenditures relate to the share of expenses which are paid by the individual directly to the health care provider and are not covered by medical insurance. These costs include participation, self-medication and other expenditure paid directly by private households. Costs of out-of-pocket can inflict a heavy burden to households and limit their access to medical care or in many cases prolong it. Governmental support in healthcare insurance can dramatically reduce these costs or introduce measures to lower these costs for low income households or even introduce exemptions for special cases like large families or single employed parent. Obligations of out-of-pocket health expenditures can be measured either by its share of total household income or its share of total household consumption (OECD 2011).

Available literature covers various aspects of shared health expenditure. Papers by (Habib, et al., 2016; Alsan, et al., 2015; Yogo, 2016) cover the topics of health expenditures in low-income and developing countries. Among a considerable number of out-of-pocket health expenditures research by country we can list most notable: rural-urban differences in out-of-pocket health expenditures in China (Wang, et al., 2016; Kumar et al., 2015), universal healthcare coverage in India (Kumar, et al., 2015; Sing et al., 2016), out-of-pocket payments Austria (Sanwald and Theurl, 2015), national health insurance scheme in Ghana (Kusi, et al., 2015), heterogeneity of public health insurance in Mexico (Grogger et al., 2015), out-of-pocket health expenditures in Iran (Ghiasvand, et al., 2015), medical insurance for poor in Georgia (Gotsadze, et al., 2015), consequences of high health expenditures in Korea (Choi, et al.,

2015), health expenditures in Eastern Mediterranean countries (Kazemi Karyani, et al., 2015), community based health insurance in Ethiopia (Yilma, et al., 2015), health and poverty nexus in Senegal (Sene and Cisse, 2015), out-of-pocket health expenditure in Colombia (Prada, et al., 2015) and burden of household health expenses in Vietnam (Mitra, et al., 2016).

2. Data and methods

Data used in analysis originate from World Health Organization (WHO) Global Health Expenditure Data Base (GHED) (WHO, 2016.). The WHO GHED is a freely accessible database which collects data from all member states. Data collection begun as early as 1997 with efforts to cover all health related data from 1995 to present minus two years of lag which is needed for most accurate calculations and representation. Available data cover a wide variety of health related topics including expenditure on an accumulation basis, including current health spending as well as spending on capital development.

For analysis and graphical presentation of the results, the standard methods of statistical and regression analysis were used presented in paper by (Dasic, 2012). Analysis is performed using standard economic statistical indicators: Annual Growth (AG), Chain Index (CI), Average Growth Rate (AGR) and Cumulative Growth Index (CGI). Examined topics cover indicators: out-of-pocket expenditure, as percentage of total health expenditure and as percentage of private health expenditure based on World Health Organisation data sets. These are considered as the core indicators of health financing systems which facilitate better understanding of the relative weight of direct payments by households in total health expenditures. These values are essential for estimating stable and welfare economics of a country which can be used for expenditure planning. Higher values indicate an economic or uncontrolled overspending on healthcare services.

3. Statistical profile of medical expenditure of the Republic of Serbia's

According to WHO report on WHO Global Health Expenditure Atlas (Dasic, et al., 2013) Serbia belongs to mid income countries with 5,360 USD per capita compared to European up-mid income countries whose average is \$9,333 per capita. Serbia spent 4 billion US dollars (562 USD per capita) on health care of which 37% was spent by households, and 61% by the government. Compared to other up-mid European countries of the region Serbia's government is spending is high as a 48% of GDP on health, share of government spending allocated to health is also high and amounts to 13%. On Figure 1 is given a graphical representation of total expenditure on health along with household and government spending.

Figure 1: Per capita expenditure in US\$ (constant 2012 US\$) (WHO)

4. Results and discussion

4.1. Out-of-pocket expenditure

Table 1 shows out-of-pocket expenditure for the period of 1995-2014 in million of current US dollars, with calculated values for annual growth (AG), chain index (CI) in [%], annual growth rate (AGR) in [%] and cumulative growth index (CGI) in [%]. World Health organisation defines out-of-pocket expenditure as the expenditure on health by households as direct payments to health care providers (WHO, 2016). These expenses are not covered by health insurance plans or in some countries are partially covered in special cases. Household can be considered as a single person or a group of individuals who collectively hold all income and distribute it on specific types of housing goods and services. From Table 1 and Fig. 2 can be noticed that the out-of-pocket expenditure for the period 1995-2014 in million USD had a variable trend over the observed period. Highest increase in out-of-pocket expenditure was by 501 mill. USD in 2007 year, while the highest decrease was by 252 mill. USD in 2009.

Average annual growth rate (AGR) has increased by 81.25% in 1996 year compared to the beginning of the observed period from further on begins to plummet reaching a historical minimum of -42.07% in 1999 year. This can be partially explained by unstable economic and political situation in the country for that period. This had a consequence that the general population avoided making non-urgent hospital and treatment costs resorting to house treatments. The smallest variation of AGR was recorded in 2010 year having only 3.3% decrease compared to previous year. It is noticeable that the trend of Cumulative Growth Index (CGI) shows significant increase compared to referent year (1995) with 712.92% of growth in 2013 year with 1.711 mill USD expenditure, having its minimum in 2000 year due to already mention reasons.

Table 1: Annual growth out-of-pocket expenditure (in million current US\$)

Year	(OOPS)	AG	CI [%]	AGR [%]	CGI [%]
1995	240	-	-	-	100.00
1996	435	195	181.25	81.25	181.25
1997	482	47	110.80	10.80	200.83
1998	328	-154	68.05	-31.95	136.67
1999	190	-138	57.93	-42.07	79.17
2000	145	-45	76.32	-23.68	60.42
2001	237	92	163.45	63.45	98.75
2002	311	74	131.22	31.22	129.58
2003	432	121	138.91	38.91	180.00
2004	557	125	128.94	28.94	232.08
2005	679	122	121.90	21.90	282.92
2006	911	232	134.17	34.17	379.58
2007	1.412	501	154.99	54.99	588.33
2008	1.736	324	122.95	22.95	723.33
2009	1.484	-252	85.48	-14.52	618.33
2010	1.435	-49	96.70	-3.30	597.92
2011	1.643	208	114.49	14.49	684.58
2012	1.496	-147	91.05	-8.95	623.33
2013	1.711	215	114.37	14.37	712.92
2014	1.652	-59	96.55	-3.45	688.33

Notes: Out-of-pocket expenditure (in million current US\$) (OOPS), annual growth (AG), chain index (CI) in [%], annual growth rate (AGR) in [%] and cumulative growth index (CGI) in [%].

Figure 2: Graphical representation of growth of OOPS and values of annual growth rate (AGR) in [%]

4.2. Out-of-pocket Expenditure (OOPS) as a percentage of Total Health Expenditure (THE)

World Health organisation defines Out-of-pocket Expenditure (OOPS) as a percentage of Total Health Expenditure (THE) as the level of out-of-pocket expenditure expressed as a percentage of total expenditure on health where (THE) is the sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of general government expenditure on health and private expenditure on health (WHO, 2016).

On Table 1 is given a numeric analysis of growth of out-of-pocket expenditure as percentage of total health expenditure, while on Figure 3 is a graphical representation of these calculations. Observed period from 1995 year shows that there was a steady increase in total health expenditure from both governmental and private sectors from 29% in 1995 to 37% in 2014. The only noticeable declining period is from 2001 to 2003 which again coincides with the economic instability of the period when both sectors introduced saving measures in order to survive the economic downfall. Average annual growth rate (AGR) recorded higher oscillations in the period of 1995 to 2000 and a relatively stable trend from 2005 to 2014 year.

Table 2: Annual growth of out-of-pocket expenditure as percentage of total health expenditure

Year	(OOPS) as %	AG	CI [%]	AGR [%]	CGI [%]
1995	29	-	-	-	100.00
1996	29	0	100.00	0.00	100.00
1997	30	1	103.45	3.45	103.45
1998	30	0	100.00	0.00	103.45
1999	31	1	103.33	3.33	106.90
2000	30	-1	96.77	-3.23	103.45
2001	28	-2	93.33	-6.67	96.55
2002	24	-4	85.71	-14.29	82.76
2003	25	1	104.17	4.17	86.21
2004	27	2	108.00	8.00	93.10
2005	30	3	111.11	11.11	103.45
2006	33	3	110.00	10.00	113.79
2007	35	2	106.06	6.06	120.69
2008	35	0	100.00	0.00	120.69
2009	35	0	100.00	0.00	120.69
2010	36	1	102.86	2.86	124.14
2011	36	0	100.00	0.00	124.14
2012	37	1	102.78	2.78	127.59
2013	37	0	100.00	0.00	127.59
2014	37	0	100.00	0.00	127.59

Notes: Out-of-pocket expenditure (OOPS) as % of total health expenditure (THE)

Figure 3: Graphical representation of growth of (OOPS) as % of (THE) and values of AGR in [%]

4.3. Out-of-pocket Expenditure (OOPS) as % of Private Health Expenditure (PvtHE)

World Health organisation defines Out-of-pocket Expenditure (OOPS) as % of Private Health Expenditure (PvtHE) as the level of private expenditure on health where the aggregate of costs for health by private substances, for example, families, business or shared health protection, non-benefit foundations serving families, inhabitant enterprises and semi companies with a health administrations

conveyance or financing capacity. It incorporates expenditures from all sources, so incorporates any benefactor subsidizing going through these financing operators (WHO, 2016).

As can be seen from Table 3 and Figure 4 private health expenditure is the major part of total out-of-pocket expenditure with clear increase trend for the observed period. The results indicate that the costs of health services are mostly covered by general population and private insurance or service entities rather than state institutions and governmental health coverage. Cumulative growth index (CGI) shows that the percentage of private health expenditure increased by 11.63% in the observed period reaching a total of 96% share in total health expenditure. Annual growth rate (AGR) maintained a steady trend with slight variations of which most notable was in 2010 when the percentage of private health expenditure increased by 4.35%.

Table 3: Annual growth of out-of-pocket expenditure as percentage of private health expenditure

Year	(OOPS) as % of (PvtHE)	AG	CI [%]	AGR [%]	CGI [%]
1995	86	-	-	-	100.00
1996	86	0	100.00	0.00	100.00
1997	86	0	100.00	0.00	100.00
1998	86	0	100.00	0.00	100.00
1999	86	0	100.00	0.00	100.00
2000	85	-1	98.84	-1.16	98.84
2001	86	1	101.18	1.18	100.00
2002	85	-1	98.84	-1.16	98.84
2003	86	1	101.18	1.18	100.00
2004	88	2	102.33	2.33	102.33
2005	88	0	100.00	0.00	102.33
2006	89	1	101.14	1.14	103.49
2007	90	1	101.12	1.12	104.65
2008	92	2	102.22	2.22	106.98
2009	92	0	100.00	0.00	106.98
2010	96	4	104.35	4.35	111.63
2011	95	-1	98.96	-1.04	110.47
2012	96	1	101.05	1.05	111.63
2013	96	0	100.00	0.00	111.63
2014	96	0	100.00	0.00	111.63

Notes: Out-of-pocket Expenditure (OOPS) as % of Private Health Expenditure (PvtHE)

Figure 4: Graphical representation of (OOPS) as % of (PvtHE) and values of AGR in [%]

4. Conclusion

In the paper is given a trend analysis of out-of-pocket health expenditures in Serbia with using standard economic statistical indicators. The study showed that out-of-pocket health expenditures negatively influence general access to medical services due to the high values of domestic participation. Obtained results indicate that there is an overall growing trend in out-of-pocket expenditure in both governmental and private sectors. Trend of Cumulative Growth Index (CGI) shows significant increase of out-of-pocket expenditure compared to referent year (1995) with 712.92% of growth in 2013 year with 1.711 mill USD. Observed period from 1995 year shows that there was a steady increase in total health expenditure from both governmental and private sectors. The percentage of private health expenditure increased by 11.63% in the observed period reaching a total of 96% share in total health expenditure.

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