

Accounting System in Croatian Public Healthcare Organizations: an Empirical Analysis^(*)

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Abstract. *In considering the adequacy of adopting accruals and IPSASs, this paper tests the appropriateness of existing modified accrual accounting and financial reporting system in Croatian public healthcare sector. The paper indicates that accounting information system contains discrepancies and constraints in assuring true and fair view of organization's financial position and performance. Our statistics confirms low level of cost and managerial accounting methods development, and external and internal financial reporting convergence.*

Having in mind its specificities, we argue that Croatian public healthcare sector represents a segmental accounting subsystem within the integral public sector accounting framework, where accruals implementation might prove justifiable.

Keywords: public healthcare; government accounting; financial reporting; empirical analysis: Croatia.

JEL Codes: H83, I18.

REL Code: 14I.

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1. Introduction

Since the 1980s there has been a radical wave of organisational, managerial and accounting reform in the public sector of many countries and jurisdictions (Barton, 2004). The New Public Management has played a dominant role in this reform (Hood, 1995). It has implied managing based on using economic regularities and market efficiency principles, and has been expected to increase accountability and to improve management tools (Azuma, 2003, Azuma, 2005). Since information is the most important resource needed in the managing process, a development of a comprehensive accounting information system, fostered by the accruals introduction, is regarded as crucial for successful public management performance (IFAC, 2003, Vašiček, 2004).

The circumstances such as an insufficient amount of budgetary resources for financing increasing public needs as well as greater readiness and promptness of the State regarding cooperation with private entrepreneurs as subcontractors with an aim to learn from their experience have influenced the start of the process of implementing economic legalities and good manner practice into the public sector where market criteria of doing business and measuring performance have not been implemented so far (Roje, 2007, Roje, 2008, Premchand, 1993). As a part of the NPM drive the implementation of market efficiency principles, good governance practice and business-style (accrual) accounting and reporting practices for governments has been aimed at achieving greater budgeting transparency. It has been argued that accruals would match the real economic costs with outputs achieved, allowing for a better evaluation of performance (Evans, 1995). Following the principle that “you can only manage what you can measure”, the whole of the assets and liabilities would start being measured and disclosed. Thus, they would become more manageable (Slamet, 1998).

As referred in IFAC Study 12, “the value of the resources used or sacrificed in relation to any particular cost objective is usually derived from the financial accounting system for two basic reasons: the greater understanding of cost data which is consistent with financial accounting data, and the cost efficiency of generating the cost data based on or integrated with an existing system of accounting” (IFAC, 2000, p. 23). We deem the implementation of cost and managerial accounting necessary, regardless of having the budget passed on accrual or cash basis. In case the budget is passed on accrual basis, the information on costs serves for comparing planned and actual amounts, while in case the budget is passed on cash basis, having information on costs means assuring certain additional information regarding the budgetary funds’ allocation, budgetary funds’ control, and funds’ increase or decrease. The fact is

that the information regarding costs has not been used sufficiently in Croatian government accounting system (Vašiček, 2006). This is due to the fact that governmental accounting information system has been greatly regarded as administrative – oriented and its managerial impact has been disregarded. The reason for this we find in that the governmental accounting information system's structure and contents has been viewed more in function of State's budget goal achievements and not in function of achieving greater management efficiencies and hence better outcomes (Roje et al., 2008). Consequently, the instructions for budget planning do not present, nor demand costs' models, in terms of mandatory procedures development. Referred to this, using costs is partial and more on a voluntary basis.

Introducing accruals in governmental financial reporting in addition enhances the development of cost accounting and managerial accounting instruments within the public sector. A large portion of existing literature has been devoted to the managerial impact of public sector accrual accounting (PSAA) implementation, stating that PSAA would improve managerial decision making by giving managers a new set of information which was not previously available to them under cash-based accounting (Christensen, 2007, Vašiček, 2004, Vašiček, 2000).

Despite the lack of the economic initiative, in terms that the State does not expect the return of the allocated funds to conduct different programs, the program outcomes measurement is deemed inevitable in order to have efficient budget planning and control over the costs. Therefore, implementing cost information when evaluating the program would enable public management to decide upon authorization of the program, the potential extension of the program, chances for upgrading it or to decide not to continue with that program. Evaluating the program means evaluating the activities of government entities that run the program and that are accordingly accountable for efficient use of resources and for achieving satisfactory results. Insufficient use of cost and managerial accounting information would therefore decrease the quality of such decisions, and public administration (public management) would have to bear the economic and financial consequences of such decision. Evaluation would therefore consist of gathering input costs and outcomes measurement in terms of measuring the quality of the service provided and whether the consumers/citizens are satisfied with the service provided or not. Combined with continuous reporting and additional commentary on output and performance indicators, this could increase parliamentary scrutiny (Likierman, 2000).

Eager to predict how the NPM reforms and more precisely the governmental financial accounting reforms may evolve, the academia has questioned whether the accrual accounting can contribute to modernising and

efficiently managing the government (Burns, Scapens, 2000, Christensen, 2007, Monsen, Nasi, 2000, Premchand, 1994). For the last decade accrual accounting has been presented as the reform for public sector accounting and the basis for the wider New Public Management reforms, and, according to some authors, as the basis for public sector marketisation (Barton, 2005, Wynne, 2007, etc.). In fact, the adoption of accrual accounting and budgeting systems has been central to the program of Commonwealth Public Sector reforms over the past 20 years (Guthrie, Parker, 1998, Wanna et al., 2000). The first stage of accruals introduction in the UK that lasted till mid 1990s referred to introducing accruals accounting in local government, central/regional government agencies and National Health Service. While Luder and Jones (2003) argue that the trend towards introducing accrual accounting in general government sector is likely to continue over the next years, Christiaens and Rommel (2008) argue that accrual accounting will only succeed in the coming years in businesslike (parts of) government.

The purpose of this research is to discuss the accruals implementation as a part of the public sector accounting reform in Croatia. In our opinion, taking into account the necessity of gradualism and cost and benefits assessment from introducing accruals into government accounting on national level, segmental approach might be the optimal choice. As in many countries, public healthcare sector represents a very important *segment* of Croatian general government sector. As prominent rise of the costs in the healthcare sector evoked a need to find ways to produce services more effectively and at lower costs, an array of literature on pricing and cost control, and accounting in general, in the public health care sector emerged (Finkler, 1994, Finkler, 2001, Hankins, Baker, 2004, Hyvonen, Jarvinen, 2006, Young, 2003). In fact, having in mind the specificities of Croatian public healthcare sector (its' financing model, service complexity and asset structure) we argue that Croatian public healthcare sector might represent a segmental accounting subsystem where accruals implementation could prove justifiable.

Following the introduction, this paper proceeds with some reflections on the development and specificities of Croatian public healthcare sector and its accounting/financial reporting system. The third part of the paper lays out research questions and research design. It also presents the results of testing the adequacy of the existing public healthcare sector accounting system. We examine the quality of the existing financial reporting practise as well as the results of examining the accountants' and financial managers' perceptions regarding the importance of cost and managerial accounting methods' implementation in assuring better decision making. Lastly, the concluding remarks summarise the main findings and lay out our further intentions regarding research on this paper's topic.

2. The development and specificities of croatian public healthcare sector accounting system

Ever since 1991, when Croatia gained independence, much effort has been placed towards establishing a public expenditures' financing model and towards changing the accounting and financial reporting systems. Since the year of 1993, the Croatian governmental accounting system has progressed from pure cash accounting practice period, that was soon after replaced with modified cash basis (that manifested in longer fiscal year period), towards the implementation of modified accrual basis in financial reporting that started in the year of 2002 (that manifested in accounting for bigger array of transactions on accrual basis), as a part of the accounting system reform. The choice and obligatory aspects of cash basis appliance was based upon the fact that all information contained in the financial statements should serve primarily as a qualitative basis for the budget execution and liquidity control. Such a system was perceived as an integral system of the State Treasury, as an administrative organisation in the Ministry of Finance, for the purpose of managing public expenses.⁽¹⁾

Prior to implementing modified cash basis accounting, fund accounting that served the nonprofit organizations was implemented in the public healthcare sector too, with a prior purpose to show through the financial statements how the public money had been spent. The use of fund accounting has often been a topic of debate in the accounting profession which has questioned its usefulness, particularly in the standard-setting process. In Croatia, fund accounting system in Croatian public healthcare sector was abolished after just one year of having been implemented in practice, due to the fact that it had not been systematically and expertly founded and conducted. Nevertheless, costs and damages of its implementation were never estimated. Implementing modified cash accounting represented the next development phase and it referred to the following:

- Revenues were generally recognized when the criteria of revenues being realizable (availability criterion) and appreciable are satisfied. The availability criterion refers to revenues being recognized when it is likely that they will be collected (recovered) within 20 days after the reporting period.
- Regular expenditures were recognized in the period they were incurred, under the condition that they were settled within 20 days after the reporting period, the latest.

The need for considering such a system as a part of an integral modern governmental accounting information system emerged. Consequently, on the

path of acknowledging the modern international trends of public expenditures' comparability and transparency, which started in recent decades worldwide, new governmental accounting system based on modified accruals was established in Croatia in the year of 2002. According to Vašiček, V. (2004), the new system implies the following:

- All general government entities (central and local government and their component entities) are obligated by the law to apply governmental accounting and financial reporting model.⁽²⁾ The fact that all entities within general government are obligated to do so assures complete accounting and reporting on general government activities.
- Unified chart of accounts and consistent appliance of rules for recording cash transactions and economic events are regulated by the law as well. This assures standardized information base for conducting additional data analysis when needed.
- As regards information on budget (budget planning and budget execution), accounting and financial reporting, the appliance of organizational, economic, functional, location and program classifications of the budget is obligatory.
- Entities that apply government accounting are obligated to make periodical and annual financial reports.
- There is the obligation for consolidated semi-annual and annual settlement of budget accounts of the Republic of Croatia.

In addition to the above-mentioned, the public healthcare sector finance reform commenced, in a way that the Croatian institute for health insurance began to be financed from the Central budget. Thus, it was not treated as the extra budgetary fund anymore. This change in financing implicated that all public healthcare institutions, financed through Croatian institute for health insurance as their agency got the general government entity (unit) status (Maletić, Jakir Bajo, 2006). However, even though organizational, economic, functional, location and program classifications have been applied in Croatian government accounting system, public healthcare institutions have not been financed according to particular expenditures classes of the adopted financial plan (Zovko, Čulig, 2004). What makes them in fact specific is that public healthcare institutions get financed on a basis of a service provided, within the boundaries of their contract with the Croatian institute for health insurance. The reform resulted with Croatian public healthcare sector accounting system being based on modified accrual accounting basis. The distinguished features of the existing accounting model are as following:⁽³⁾

- Expenses regarding the fixed assets supply are not capitalized but rather treated as expenditure in full when obtained. This further implies that assets are not being depreciated annually, based on the estimated assets usage period.
- Regular expenditures and liabilities are recognized on accrual basis.
- Revenues are generally recognized when cash/cash equivalents are received.
- Revenues and expenditures that result from the change in non-financial asset and liabilities value are not recognized.
- Capital support (subsidies) revenues (those of the central or local State) for financing investment activities are not reported as public capital nor are they deferred in time. They are, however, recognized as revenues in a period when they were realized/ earned.

As for the financial reports, public healthcare institutions have been obligated to make balance sheets, reports on revenues, expenses, cash receipts and expenditures, reports on changes in assets' and liabilities' volume, and notes as the supplement records which follow up the financial statements.

Overall, the result of the process of moving from fund accounting towards the modified accrual accounting was a set up of a unified and standardized general government accounting system, that has shown in practice not to represent the best accounting solution for all public sector segments, just as the move to full accrual accounting in Croatian general government sector is more than just a matter of time. Accountants and financial managers within public healthcare sector have been expressing their discontent regarding the complex external financial reporting system ever since it has been implemented, addressing in particular the difficulties in capturing all the economic and financial categories that consequently diminish the verity and impartiality of financial reports.

3. Testing the adequacy of the existing public healthcare sector accounting system

3.1. Research design

In the course of considering the possibilities of adopting the International Public Sector Accounting Standards (IPSASs) in national government accounting system, we examine the accountants' perceptions of the adequacy and appropriateness of existing modified accrual based accounting and financial reporting system for Croatian public healthcare sector. Having in mind the sector's specificities discussed in chapter 2, we argue that such a system has shown discontinuity, and we discuss whether precisely Croatian public

healthcare sector, which represents a very important *segment* of the general government sector, might represent a segmental accounting subsystem where accruals implementation could prove justifiable.

We deem our survey of the accountants' and financial managers' perception of the existing financial reporting system quality and of the level of cost and managerial accounting methods' development, as an outset in justifying the need for improving and developing the existing government accounting model, in public healthcare sector in particular.

3.1.1. Sample selection

Data were collected by means of a self-administrated questionnaire. Respondents to our survey are broadly representative of 36 Croatian hospitals that represent the most complex and the most important segment of the public healthcare sector. Precisely, this study sought the views of people involved in preparing the financial reports (e.g. accountants, financial managers). The first mailing of the questionnaire encompassed 67 Croatian hospitals, and it resulted in our receiving 27 completed surveys. Later, we mailed the survey again to all non-respondents. Our total sample of 36 respondents represents 53.73% of all targeted respondents.

Since Croatian hospitals represent the most complex and the most important segment of public healthcare sector and since they form a homogenous set regarding the way of conducting their operations and their information needs, we use the targeted questionnaire to allow for the objective result analysis. We did not use the random sample method for it would decrease the representatives of the sample, because certain more simplified systems face less information constraints of the accounting system. In addition, from the public healthcare financial management macro point of view, hospitals' expenditures represent the most complex and the most expensive public healthcare segment. Thus, the effectiveness and the economy of Croatian hospitals reflect the quality of the whole public healthcare system. The majority of the respondents have accountancy and finance qualifications as well as several years of accounting or financial expertise, in the public healthcare sector. Thus, the perceptions of the respondents should have credibility.

3.1.2. Survey instrument

The questionnaire consisted of 58 questions and was divided into two main parts. The first part referred to the financial accounting and reporting system, containing 32 questions, while the second part referred to the cost and managerial accounting methods' development and their implementation in public healthcare organizations, containing 26 questions. Further, the first part

of our survey consisted of two parts – financial accounting and financial reports. Therefore, 18 out of 32 questions were used to examine the appropriateness of financial accounting to the healthcare organizations' needs, while an additional 14 questions surveyed the preparers' perceptions of the financial reports' quality. The questions from the first part of the questionnaire either asked the respondents to select one response or to rank specified items on a scale of 1 to 5.

The second part of the questionnaire aimed at seeking the accountants' and financial managers' views regarding the use of cost and managerial accounting methods in terms of better and targeted accounting information use.

3.2. Research questions, hypotheses and results

As discussed above, this paper lays out two broadly-stated research questions:

RQ1: Is the existing modified accrual based accounting and financial reporting system adequate and appropriate for Croatian public healthcare sector?

RQ2: Is the use of cost and managerial accounting methods in assuring better decision making on a satisfying level?

RQ1 has been broken down into two areas: (rq1a) testing if the accounting information system assures true and fair view of public healthcare organization's financial position and performance, and (rq1b) examining the preparers' perceptions of the financial reports' quality. Results of RQ2 have been broken down into three parts with the aim to provide some evidence on: (rq2a) respondents' views regarding planning, accounting and controlling for costs, (rq2b) determining the price of the service provided, and (rq2c) the outcomes and performance management.

3.2.1. Survey on the adequacy of the accounting system

This part of the research addresses the issue of the adequacy and the appropriateness of existing modified accrual accounting and financial reporting system for Croatian public healthcare sector. Therefore, the following hypothesis was made:

Hypothesis 1: The existing government accounting information system is not appropriate for satisfying the needs of objective accounting for public healthcare organizations' operations and performance.

We find several specific questions in the questionnaire important for confirming the first hypothesis and these will be discussed hereafter.

Regarding the question that asked the respondents if the government accounting model which was introduced in 2002 has brought advantages that would satisfy their reporting needs, 22 of them (61%) have not found that the government accounting model, introduced in 2002, has brought advantages that would satisfy their reporting needs. Such result can be explained by the fact that the accounting model based on modified cash accounting, which had been used prior to developing the existing accounting model, had not allowed the negative financial score. Thus, despite that the positive financial score had not been regarded as being the objective one, the top level management judgements concerning the performance achieved had been more favourable. The poor results, however, had remained hidden under the non-settled liabilities that, according to the cash accounting principles, had not been recognized as expenses.

Question which asked the preparers whether they found the existing accounting system adjusted towards gathering the financial reports for the external users was answered negatively by 67% of the respondents. This might be due to the main disadvantage of the existing accounting model in that it does not enable linking the revenues and expenses of the same period since the revenues are not recognized when earned but when cash/cash equivalents are received. Such explanation is supported with the respondents' answers to the following question:

- “Public healthcare organizations’ revenues are recognized on cash basis. Such approach:
 - 1) truly reflects the total revenues formation
 - 2) underestimates the truly earned revenues in comparison to the revenues recognized
 - 3) no point of view. “

The majority of the respondents (94%) have agreed that the existing accounting model underestimates truly earned revenues in comparison to the revenues recognized.

We also find the following two questions highly relevant in testing the first hypothesis:

- “Do you find that it would be better for the purpose of disclosing true and fair operations’ results that the expenses regarding the fixed assets supply are not treated as expenditure in full when obtained but rather capitalized, and that the assets’ depreciated amounts based on the estimated assets usage period are recognized annually?”

- “The net fixed assets value in your organizations’ balance sheet is:
 - 1) underestimated
 - 2) overestimated
 - 3) true/real”.

The fact that 58% of the respondents reported that it would be better for the purpose of disclosing true and fair operations’ results that the expenses regarding the fixed assets supply are not treated as expenditure in full when obtained but rather capitalized, and that the assets’ depreciated amounts based on the estimated assets usage period are recognized annually, as well as the fact that 69% of the respondents found the net fixed assets value to be underestimated under the existing accounting model, support the first hypothesis. Referred to the all above mentioned questions, we conclude that the first hypothesis has been confirmed. Other respondents’ views regarding the questions asked either support or they do not dispute the first hypothesis and therefore are not deemed crucial to be discussed.

3.2.2. Survey of the perception of the quality of financial reporting

This part of the research addresses two hypotheses made.

Hypothesis 2: The basic financial statements disclose certain discrepancies and contain constraints in assuring true and fair view of public healthcare organization’s financial position and performance.

Hypothesis 3: Preparing financial reports serves primarily for fulfilling legal reporting obligations and for monitoring financial constraints set by the financial plans, and secondarily for efficient management policy control and for making the comparison with other similar organizations.

We find several specific questions in the questionnaire important for confirming the abovementioned hypotheses and these will be discussed hereafter. For the purpose of testing the second hypothesis three questions are emphasised, as follows:

- “Do the basic financial statements prepared in your organization disclose true and fair view of organization’s financial position and performance?
 - (1) Yes, (2) No, (3) Mostly yes, (4) Mostly no”.
- “Do you find the information presented in financial statements sufficient for evaluating the management performance in your organization?
 - (1) Yes, (2) No, (3) Mostly yes, (4) Mostly no”.

- “The contents, structure and dynamics of financial reports for external users have been regulated by The Policy of financial reporting in the budgetary system. Do you find such contents and structure appropriate for the public healthcare organizations’ needs?
 (1) Yes, (2) No, (3) Mostly yes, (4) Mostly no”.

When considering respondents’ views on whether the basic financial statements prepared disclose true and fair view of organization’s financial position and performance, 19% of the respondents thought that the financial reports enabled true and fair view of organization’s financial position and performance; 25% of all respondents answered that financial reports mostly enabled true and fair view of organization’s financial position and performance; 33% did not think that financial reports enabled true and fair view of organization’s financial position and performance, and 22% mostly disagreed that financial reports enabled true and fair view of organization’s financial position and performance.

Since we regarded this question as a highly important one, we approached the statistics testing regarding the main sample proportion. This meant that we conducted the analysis by forming two groups of answers, equalising the yes and mostly yes answers and no and mostly no answers. Our statistics confirmed the second hypothesis that the basic financial statements disclose certain discrepancies and contain constraints in assuring true and fair view of public healthcare organization’s financial position and performance. This conclusion was based on the fact that the proportion of the organizations in main sample with respondents’ answers yes or mostly yes, was smaller then the proportion of the organizations with respondents’ answers no or mostly no, as shown hereafter.

$$H_0 \dots p = 0,61$$

$$H_1 \dots p \neq 0,61$$

Test and CI for One Proportion

Test of $p = 0.61$ vs $p \text{ not} = 0.61$

Sample	X	N	Sample p	95% CI	Z-Value	P-Value
1	16	36	0.444444	(0.282, 0.606)	-2.04	0.042

$$H_0 \dots p = 0,71$$

$$H_1 \dots p \neq 0,71$$

Test and CI for One Proportion

Test of $p = 0.71$ vs $p \text{ not} = 0.71$

Sample	X	N	Sample p	95% CI	Z-Value	P-Value
1	20	36	0.555556	(0.393, 0.717)	-2.04	0.041

Results of the other two aforementioned questions referring to testing the second hypothesis were rather similar to the first one. Precisely, 58% of the respondents did not find the information presented in financial statements as being sufficient for evaluating the management performance in your organization, while only 8% of all respondents deemed the financial reports' contents and structure has been appropriate for the public healthcare organizations' needs.

In order to test the third hypothesis we sought the respondents' perception of the purpose for preparing financial reports. Namely the following question was addressed to them:

- "According to your knowledge based on your management requests, what is the reason that your management deems the regulated financial reporting system to be important?"

The respondents had to scale all four answer choices on a scale of 1 to 5, and the results are shown in table 1.

Table 1

"According to your knowledge based on your management requests, what is the reason that your management deems the regulated financial reporting system to be important?"

Various answer choices provided by the authors	Number of the respondents' answers				
	1	2	3	4	5
a) For efficient management policy control	3	6	16	7	4
b) For monitoring the financial plan realization	0	3	5	10	17
c) For comparison with other similar organizations	4	16	7	8	1
d) For satisfying the legal reporting obligation	0	1	4	9	22

Having conducted the Sign test we determined that 50% of all respondents consider that preparing the regulated financial reports is medium important or important for efficient management policy control.

$$H_0 \dots \eta = 3$$

$$H_1 \dots \eta \neq 3$$

Sign Test for Median: « efficient management policy control »

Sign test of median = 3.000 versus not = 3.000

N Below Equal Above P Median

36 9 16 11 0.8238 3.000

We conducted the same test for the purpose of being able to examine the importance of other answer choices that we wanted the respondents to scale from 1 to 5. Tests have shown that satisfying legal reporting obligation was regarded as the most important reason for preparing financial statements. Further more, financial plan realization monitoring turned out to be highly

important reason too, while conducting comparisons against other similar organizations as the reason for regarding the financial reporting system to be important, was deemed as marginal. We therefore confirm our third hypothesis that preparing financial reports serves primarily for fulfilling legal reporting obligations and for monitoring financial constraints set by the financial plans, and secondarily for running the management policy and for making the comparison with other similar organizations. The statistics supporting our discussion is as follows:

$$H_0 \dots \eta \leq 4$$

$$H_1 \dots \eta > 4$$

Sign Test for Median: « monitoring the financial plan realization»

Sign test of median = 4.000 versus > 4.000

N	Below	Equal	Above	P	Median
35	8		10	17	0.0539 4.000

$$H_0 \dots \eta \geq 3$$

$$H_1 \dots \eta < 3$$

Sign Test for Median: « comparison with other similar organizations »

Sign test of median = 3.000 versus < 3.000

N	Below	Equal	Above	P	Median
36	20		7	9	0.0307 2.000

$$H_0 \dots \eta = 5$$

$$H_1 \dots \eta \neq 5$$

Sign Test for Median: « satisfying the legal reporting obligation »

Sign test of median = 5.000 versus not = 5.000

N	Below	Equal	Above	P	Median
36	14		22	0	0.0001 5.000

In addition, this study also sought the views of accountants and financial managers regarding the quality of information in financial statements, based on four criteria: reliability, relevance, validity and comparability. Several questions asked the respondents to rank specified items on a scale of 1 to 5. These are shown in the following four tables - tables 2 to 5.

Table 2

“Information presented in financial statements are *reliable* in that they enable that your financial position and results are understandable:”

Various answer choices provided by the authors	Number of the respondents' answers				
	1	2	3	4	5
a) For the Management	1	1	19	10	5
b) For external users	5	8	14	6	2

Table 3

“Information presented in financial statements are relevant for they enable taking into account the important passed, current and future events:”

Various answer choices provided by the authors	Number of the respondents' answers				
	1	2	3	4	5
a) For the Management	0	3	18	9	6
b) For external users	3	7	19	6	1

Table 4

“Information presented in financial statements are *valid* in that they do not capture any relevant mistakes and preconditions, but they are fairly presented, neutral and complete:”

Scale	1	2	3	4	5
<i>Number of the respondents' answers</i>	0	4	14	16	2

Table 5

“Information presented in financial statements are *comparable* in that they enable comparisons with other entities in your industry and the comparisons in time series:”

Scale	1	2	3	4	5
<i>Number of the respondents' answers</i>	0	1	19	14	2

Referred to answers provided in tables, we can conclude the following:

- The majority of the respondents deems information presented in financial statements as *reliable*, meaning that the information enables the management to understand the organizations' financial position and results, but are not reliable as for the external users are concerned.
- The majority of the respondents regard information presented in financial statements as not being *relevant* for the majority of managements in the analysis and for the external users, for considering the important passed, current and future events.
- The majority of the respondents deem information presented in financial statements as valid in that the information do not capture any relevant mistakes and preconditions, but they are fairly presented, neutral complete:
- The majority of the respondents regard information presented in financial statements as *comparable* in that the information enable comparisons with other entities in the industry and the comparisons in time series.

3.2.3. Testing the level of cost and managerial accounting information use

As aforementioned the second part of the questionnaire aimed at seeking the accountants' and financial managers' views regarding the use of cost and

managerial accounting methods in terms of better and targeted accounting information use. We aimed to provide some evidence on: respondents' views regarding planning, accounting and controlling for costs, determining the cost of the service provided, and the outcomes and performance management. The following hypothesis is also the last hypothesis tested in our study.

Hypothesis 4: The level of cost and managerial accounting methods development in public healthcare organizations is rather low.

In order to test the fourth hypothesis we sought the respondents' perception of cost and managerial accounting methods implemented and applied in practice for internal accounting and reports' needs. The question that was addressed to them and their answers based on ranking the items on a scale of 1 to 5 are shown in Table 6.

Table 6

“To what extent has your organization applied some of the following cost and managerial accounting instruments for the internal accounting and reports' needs?”

Various answer choices provided by the authors	Number of the respondents' answers				
	1	2	3	4	5
a) <i>Planning, accounting and controlling for costs</i>	1	1	6	13	15
b) <i>Determining the price of the service provided</i>	2	17	7	4	6
c) <i>Outcomes and performance measurement</i>	1	11	12	7	6

The results illustrated in Table 6 were tested using the Wilcoxon Signed Rank test. The statistics result is provided below.

$$H_0 \dots \eta \leq 3$$

$$H_1 \dots \eta > 3$$

Wilcoxon Signed Rank Test: *Planning, accounting and controlling for costs*

Test of median = 3.000 versus median > 3.000

N

	for	Wilcoxon	Estimated
N	Test	Statistic	P
35	29	406.5	0.000
			4.000

$$H_0 \dots \eta = 3$$

$$H_1 \dots \eta \neq 3$$

Wilcoxon Signed Rank Test: *Determining the cost of the service provided*

Test of median = 3.000 versus median not = 3.000

N

	for	Wilcoxon	Estimated
N	Test	Statistic	P
36	29	197.0	0.665
			3.000

$$H_0 \dots \eta = 3$$

$$H_1 \dots \eta \neq 3$$

Wilcoxon Signed Rank Test: *Outcomes and performance measurement*
 Test of median = 3.000 versus median not = 3.000

N				
for	Wilcoxon	Estimated		
N	Test	Statistic	P	Median
37	25	198.5	0.339	3.000

Based on our statistics, we lay out the following conclusions:

- The majority of the respondents states that planning, accounting and controlling for costs are very important or the most important item, and is used in their organizations.
- Views concerning the relevance and appliance of determining the cost of the service provided are split.
- Views concerning the practice of outcomes and performance measurement are split.

3.2.3.1. *Planning, accounting and controlling for costs*

However, for a more complete consideration of the respondents' perceptions of the cost and managerial accounting development, we need to discuss several other questions from a self-administrated questionnaire. The following question showed interesting results.

- "For the purpose of planning, accounting and controlling for cost, the cost in your organization are disclosed:
 1. according to the organizations' Chart of accounts
 2. according to organizational units or other cost locations
 3. according to cost drivers".

Namely, 42% of the respondents chose item number 1, 58% chose item number 2, and not even one respondent chose item number 3, which means that the practice of planning, accounting and controlling for costs according to the cost drivers has not been implemented. Having in mind that 80% of the respondents stated that salaries take from 50% up to 80% of the total costs, we can conclude that at least 50% and up to 80% of the total costs are not allocated to cost drivers but only to cost location (e.g. departmental unit). Material costs, on the other hand, form around 50% of the total costs, and the majority of the respondents' (above 50%) replied that cost in their organizations are disclosed according to the cost location, while 39% of the respondents replied that their

organizations disclose costs according to both, the cost location and cost drivers (e.g. service type). When discussing the allocation of the indirect costs, our statistics shows that 47% of the respondents have used direct method, 38% have combined the direct and indirect method, while 14% of them have used the indirect method only.

3.2.3.2. Determining the price of the service provided

This part of our research encompasses seven questions within the questionnaire. Among other things, we asked the respondents about their revenues structure, about the way the cost/price of the service provided is calculated and whether the price of the service covers the generated costs. We find that public healthcare organizations are dominantly financed based on the contract they have with the Croatian institute for health insurance. According to the majority of the respondents it is the Croatian institute for health insurance which sets the price of the service. Perhaps, the most interested question referring to this part of the research would be the following:

- “Does the price of the service cover the costs generated when providing the service, when fixed asset depreciation amount is included?”

Not to our surprise, 78% of the respondents answered “no”, the others answered either yes or they did not analyse the price/costs ratio.

3.2.3.3. Outcomes and performance measurement

This part of our research encompasses eight questions within the questionnaire. The majority (94%) of the organizations included in the analysis confirmed to have conducted the outcomes measurement. Both, outcomes and performance measurement related to the services provided are conducted within 17 out of 36 organizations in the analysis, while 24 out of 36 organizations conduct outcomes and performance measurement related to the finance resources. However, these just mentioned indicators have to be regarded as rather relative prior being taken into account the criteria used when performing the outcomes and performance measurement. Precisely, 67% of the respondents state that they conduct the measurement based on gathered knowledge and experience, 1% based either on the intuition or based on some quantitative methods. Cost accounting in measuring the performance regarding the services provided is used in only 12% of institutions captured in our analysis.

4. Concluding remarks

A belief that public and private sectors did not have to be managed in fundamentally different ways fostered the already started harmonization of national and international public sector accounting systems and their convergence towards the private sector financial reporting standards. The status and development of governmental accounting at the international level has strongly encouraged the accruals implementation, which has been followed by the movement of complying with IPSASs. We start from the concept that preparing and presenting information about the general government sector entities should be transparent and internationally comparable. Thus in the course of considering the adequacy and possibilities of accruals and IPSASs adoption in national government accounting system, we test the appropriateness of existing modified accrual based accounting and financial reporting system for Croatian public healthcare sector.

The prime purpose of our study is to investigate the quality of the existing financial reporting system in public healthcare organizations. We used a self-administrated questionnaire to seek the views of accountants and financial managers in hospitals that represent the most complex and the most important segment of Croatian public healthcare sector. The results referring to respondents' perception of the adequacy of financial accounting and the quality of external financial reports indicate that accounting information system contains constraints in assuring true and fair view of organization's financial position and performance. According to the questionnaire results, legal reporting obligation and financial plan realization monitoring turned out to be the most important reasons for using the financial reporting system, followed by the weak use of accounting information for successful managing of the activities, while conducting comparisons against other similar organizations were deemed as marginal.

In addition, we surveyed the level of cost and managerial accounting information use. The statistics regarding perceptions of the respondents concerning the level of cost and managerial accounting methods' development, confirms the unjustifiably low level of cost and managerial accounting methods development. While the majority of the respondents perceive cost planning and cost control to be important, they do not place much concern on instruments (e.g. examining the price-costs ratio and output based performance measurement). It is our opinion that the constraints found in assuring true and fair view of organization's financial position and performance can be removed/improved by using the information that results from developing and implementing cost and managerial accounting methods. Therefore, improving

the level of external and internal reporting convergence is deemed necessary.

The results of this study have relevance to all users of financial statements and in particular to accounting professions engaged in public sector accounting information system set of reforms, in their effort to upgrade and advance the existing financial reporting system by implementing accruals in selective accounting/financial reporting subsystems within the integral public sector accounting framework. Such a system should assure the integral information base that would enable efficient use of public goods and the existence of accountable financial management.

In our opinion, a unified and standardized general government accounting system based on modified accruals does not represent the best accounting solution for all public sector segments. Also, the transition to full accrual accounting in Croatian general government sector is complex and more than just a matter of time, and is not probable to be adopted by all general government entities at once. In fact, taking into account the necessity of gradualism in introducing accruals into government accounting on national level, we opt for a segmental approach as the optimal choice.

Having in mind the specificities of Croatian public healthcare sector, we argue that Croatian public healthcare institutions might represent a segmental accounting subsystem where accruals implementation could prove justifiable. Our survey of the perception of accountants and financial managers in public healthcare organizations about the quality and appropriateness of the existing financial reporting system represents a step further in examining and justifying the need and possibilities for accruals implementation in public healthcare accounting system. Testing the accrual based accounting model, its quantitative and qualitative advantages when compared to the existing modified accrual based financial reporting system in public healthcare organizations, as well as the possibility of its direct and objective influence on enhancing a transparent and efficient public management, will be the subject of our future research.

Notes

- (1) Accounting and financial reporting for Croatian general government sector is enacted by Uredba o računovodstvu proračuna (Narodne novine br. 94/04, 108/96) /engl. Decree on government accounting (Croatian national gazette, No. 94/04, 108/96).
- (2) The term „component entities“ refers to departments, boards, agencies, commissions etc.
- (3) Adopted and adapted from Vašiček D. (2007), *Državno računovodstvo u funkciji odlučivanja javnog menadžmenta*, doktorska disertacija, Ekonomski fakultet u Rijeci.

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