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**A SURVEY OF THE RELATIONSHIP BETWEEN ACCRUAL ACCOUNTING BASIS AND IMPROVING ACCOUNTABILITY AND ORGANIZATIONAL PRODUCTIVITY COMPARED TO ADJUSTED CASH BASIS IN GOVERNMENTAL ORGANIZATIONS (CASE STUDY OF ORGANIZATIONS AND MAIN OFFICES OF GHARBI AZERBAIJAN PROVINCE)**

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**ABSTRACT**

Based on sections 105, 106 of conceptual statement No.1 of Governmental accounting standards board (GASB), governmental financial reports are provided with general aim and for external organizational users. As the users of reports and financial information expect the reports are transparent and respond to their information needs, any accounting basis effective on improving accountability is useful for them. Various factors are effective on productivity in state organizations and applied accounting basis is of great importance. Based on the above items, the present study aimed to identify and determine the effect of full accrual accounting and adjusted cash bases on improving accountability and productivity of governmental organization activities. The present study is descriptive-survey. The study population is experts, shareholders and financial managers of governmental organizations of Azerbaijan Gharbi province as 150 people. The results showed that using full accrual basis in mentioned governmental organizations is an effective step to improve responsiveness and increasing productivity of the activities of these organizations. Thus, it is proposed the governmental organizations use full accrual basis instead of adjusted cash basis.

**Keywords:** *Full Accrual Basis, Adjusted Cash Basis, Accountability, Productivity, Public sector*

**INTRODUCTION**

Based on the specialization of activities, the extension and speed in technology changes, variety of human needs in various communities, increasing development of competitive methods and etc., the human being needs are complex in current communities as the management of satisfactory fulfilling of various needs by organizations is turned into a challenging issue and the organizations success is evaluated based on achieving level to goals and increasing satisfaction of society of their services. For optimal and effective use of limited budget sources in organizations, finding new methods and approaches is an effective solution as if we can use the new methods and approaches, the probability of achieving the defined goals to achieve satisfaction of client and fulfilling their needs is maximized and the organization productivity is increased. Financial performance among all factors affecting the behavior and results of performance of an organization is of great importance. The study and considering of processes and basics of financial systems of organizations can be an effective step to find the efficient solutions to eliminate financial issues of organization and finally presenting a good and clear image of financial performance. One of the items effective on financial performance of organization namely on performance and operational results of organization from productivity view (efficiency, effectiveness and economic saving) is accounting basis in financial system of system. Based on the new approach of governmental organizations to use accrual accounting basis and issuing public sector standards and issued drafts from the committee of public sector standards of audit organization, analytical investigation of benefits and disadvantages of this approach is necessary as the basis in governmental accounting can be effective on financial information and relevant information decision making and in case of selecting it as the prediction and budgeting basis, it leads to major changes in sources allocation. Based on the weakness of cash basis to present a clear

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image of organizations performance and lack of flexibility of cash budgeting and achieving satisfactory results of performing full accrual accounting basis in organizations all over the world, the main problem of the present study is to answer this question that under present conditions, is using full accrual accounting approach significantly increase accountability and productivity of organizational activities or not? In addition to the review of common governmental accounting approaches, the main purpose of the study is new approach of accrual basis and the study of its impact on increasing accountability and productivity of the activities of these organizations.

Theoretical basics and review of literature: The governmental financial reports users are from various classes and their information needs are different. Thus, providing the reports providing the required information of all users is not possible. Thus, the type and amount of presented information in general financial reports should be based on public needs of users (conceptual statement NO. 1 of governmental accounting standards board). The inclination to financial reporting in public sector is increased by globalization of financial sources management improvement and accountability in this sector (Kordestani, 2009). An efficient and transparent financial reporting system is of great importance in governments as people awareness to use public sources is increased. Traditionally, governments act based on cash accounting and this issue shows that public cashes should be consumed in determined ways as allocated by parliament. Cash accounting, receive, payment and cash remaining are registered in cash flow trading. Thus, cash accounting-based financial statements traditionally show the sources of cash flow receiving and allocation to cash expenditures and compare it with budgeted expenditures. The main difference between these two accounting (cash and accrual) bases is in identification of trading. The accrual accounting nature is transferring trading registration time and identification of the costs to the occurred periods. The depreciation of assets cost during its useful life is equal to purchase cost or its alternative costs. Similarly, pension costs and other costs of employees as registered cost are equal to the cash paid in future for them. The scheduling and registration of trading accounting figures is of great importance for decision makers and accountability of managers. It seems that for government decisions, accrual accounting figures are more efficient than cash accounting figures.

According to Barrett (1993), the outcomes of using accrual accounting are seven types: First, comprehensive definition of the cost of government plans leading to the second outcome, the emphasis on costs control and effectiveness measurement. Third, accrual items have important effect on determining pricing method for user account. Fourth outcome is the need to show high productivity in work bargaining negotiations. Fifth outcome is creating high accountability for the applied and invested sources of public sector institutions. Sixth outcome refers to creating accountability for descending effects of liabilities policies referring to the importance of inter-class capital measurement. Finally, the measurement of financial impact of government policies for initial estimations with increasing benefits for its apparent statement, budget. In addition, it should be said the selection of accrual accounting basis in public sector leads to the increase of government accountability to its clients, better financial management of public services managers and comparison of management performance in various fields. These important changes are based on the change of public sector accounting view from cash flow changes to the events leading to cash flow changes. A few investigations have been conducted regarding accrual accounting and its outcomes for a big society and nothing is referred to the problems that are occurred.

Study hypotheses Based on the study questions, two hypotheses are formulated as follows. Each of the following hypotheses is investigated via the questionnaire questions and the accumulated results are analyzed.

Hypothesis 1 evaluates the relationship between using full accrual basis and two variables: Accountability and productivity. The hypothesis of two relations between using adjusted cash basis (common accounting basis in executive systems of country) and two variables: accountability and productivity are evaluated and the results of two bases are compared finally.

First hypothesis: There is a significant difference between influence on improving accountability in governmental organizations based on full accrual accounting and adjusted cash bases.

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Second hypothesis: There is a significant difference between effect on improving productivity of activities of governmental organizations based on full accrual and adjusted accounting bases.

Study variables and measurement method: The theoretical basis of this study is the views of financial reporting theorists, the board of governmental accounting standards and paradigm in public sector accounting in the world. The study model with two independent variables and two dependent variables and measurement indices for common accounting bases of government accounting and accrual accounting basis in public sector and the comparison of these two bases regarding dependent variables (accountability and productivity of organizational activities) are shown in Table 1.

**Table 1: Independent variable, Dependent variable and Measurement index of dependent variable**

Independent variable	Dependent variable	Measurement index of dependent variable
<b>(Accounting bases)</b>		
1-Accrual accounting system	Accountability	Financial and operational accountability
2-Common accounting system (adjusted cash)		Evaluation of managers performance
		Report transparency
		Pubic informing
		Easy availability
1-Accrual accounting system	Productivity of organizational activities	Focusing on the needs of all stockholders
2-Comon accounting system (adjusted cash)		The ability of reports as the basis of prediction and planning
		Determining index for evaluation of managers performance
		Achieving the financial and calculation rule goals
		The continuity of using governmental property
		Avoiding financial sources wastage
		Optimal use of human sources

Study method: Library: In this part for data collection regarding theoretical basics and review of literature, library sources, articles, required books and world network of information (internet) is used. Questionnaire: For data collection, questionnaire is distributed among the sample members. The mentioned questionnaire is composed of 6 general questions (identification) and 24 specialized questions (main) as unknown. For rapid receiving of response and collection of results, they were presented to participants and were collected later. To measure study variables, the questionnaire is based on five-item Likert scale (very much, much, average, low and very low). Interval scale is used as the participants didn't only said yes or No answers and they had flexibility in answering. To turn qualitative data to quantitative data, scores one to 20 are given to each of choices and the significance value scores are multiplied by their frequency number. To investigate the hypotheses, 120 questionnaires are distributed and 108 of them are received. The members of study population include stockholders and financial managers of executive systems of Azerbaijan Gharbi province, managers and experts of main office of economic and asset affairs and auditors of calculation center and they are 150. The sample size is selected by screening method by excluding those with irrelevant education in financial affairs and 120 people are selected.

The response condition based on accounting bases: The response condition is evaluated by six indices and in this study is including a 6-item scale the view regarding the impact of both common and accrual accounting systems is evaluation and the descriptive results are shown in the following Table:

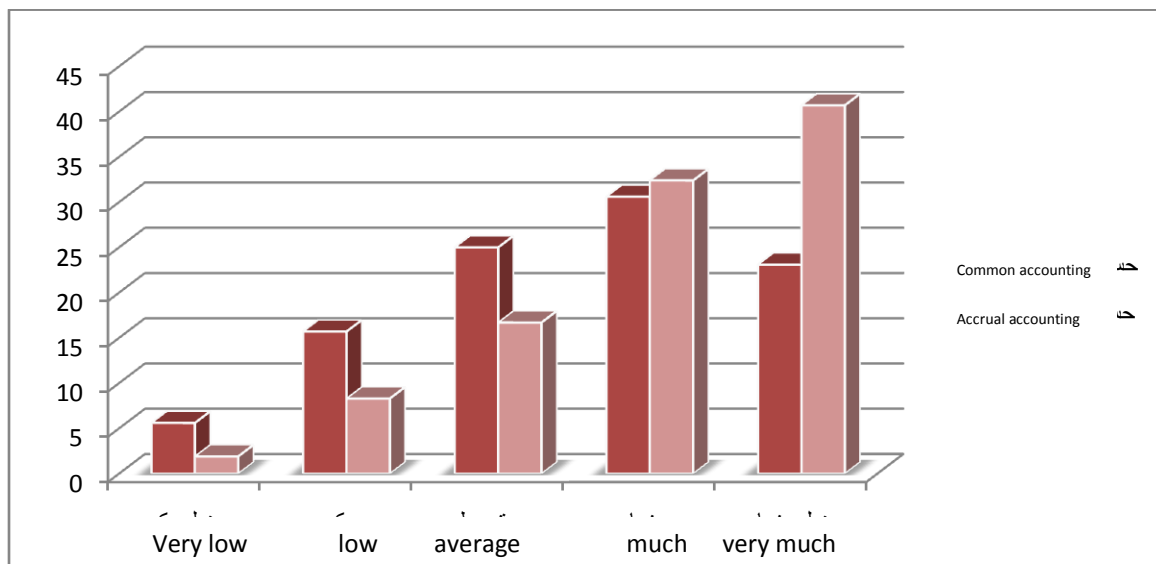
As shown in Table 2, the mean of effect of common accounting system (adjusted cash) on improving responsiveness of organizations in zero to 100 is about 60 but the mean of the impact of accrual accounting system in organizations is 67.4. Based on the study sample, the impact of accrual basis on improving responsiveness is more than common basis and based on standard deviation regarding common

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basis data is more than accrual basis. The study sample is agreed on the good impact of accrual basis and their views about common basis are dispersed.

**Table 2: The frequency distribution of influence of accountability from accounting bases based on respondents view**

Influence amount on accountability								Accounting basis
SD	Mean (scale 0 to 100)	Very much	Much	Average	Low	Very low		
20.83	59.95	10	22	36	25	15	F	Common
		9.3	20.4	33.3	23.1	13.9	%	
15.22	67.39	23	34	28	17	6	F	Accrual
		21.3	31.5	25.9	15.7	5.6	%	



**Chart 1: Bar distribution of the frequency of accountability affecting by accounting bases based on the respondents view**

The productivity condition of organizational activities based on accounting bases: The influence condition of productivity of organizational activities is evaluated by 6 indices and in this study is including a 6-item scale and the views regarding the impact of each of common and accrual accounting systems are evaluated and the descriptive results are shown in the following table:

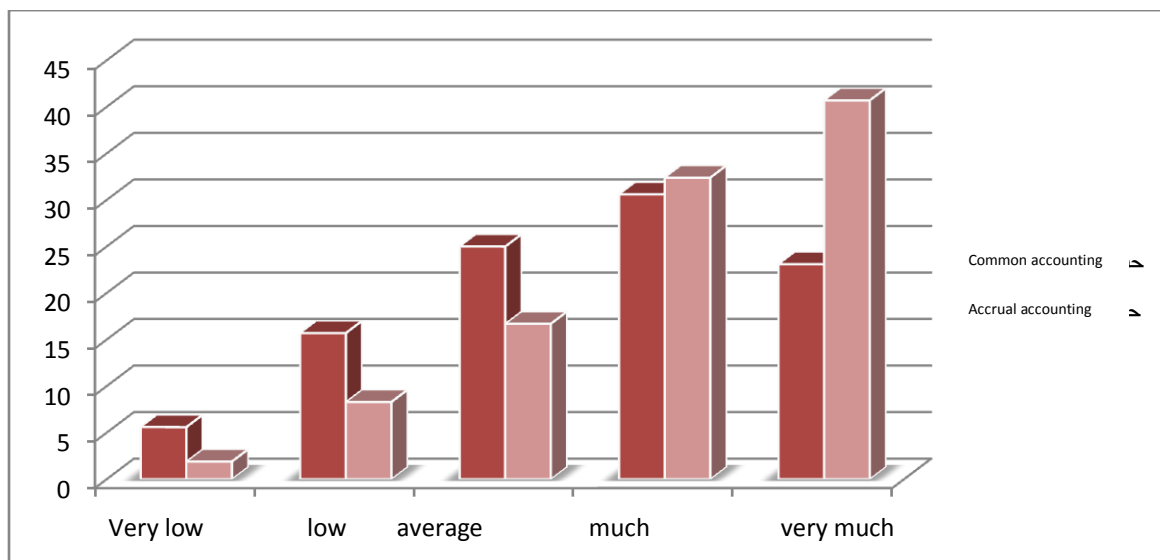
According to Table 3, the mean of influence of accrual accounting system on improving productivity of the activities of organizations in ranges 0 to 100 is about 85 while the mean of influence of common accounting system on productivity of organizations is 73.5. Thus, in terms of study sample, the impact of accrual basis on improving productivity of organizations activities is higher than the impact of common basis.

Based on the investigated standard deviation regarding common basis is more than accrual basis. The agreement of the study sample regarding the good impact of accrual basis is more but their views regarding common basis is dispersed.

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**Table 3: Frequency distribution of influencing of productivity from accounting bases based on the view of respondents**

The influence amount on productivity of organizational activities								Accounting basis
SD	Mean (scale 0 to 100)	Very much	Much	Average	Low	Very low		
17.65	73.51	25	33	27	17	6	F	Common
		23.1	30.6	25	15.7	5.6	%	
11.42	84.86	44	35	18	9	2	F	Accrual
		40.7	32.4	16.7	8.3	1.9	%	



**Chart 2: Bar distribution of the frequency of productivity affecting by accounting bases based on the respondents view**

In this section, the inference findings of study are along with the hypotheses test. In other words, the generalization of results to all respondents in study population is evaluated.

As the influence on accountability and influence on productivity are evaluated by Likert scale, the scale values are interval. As the questionnaire of experts view is evaluated regarding the effect of two accounting bases in governmental organizations, to test the study hypotheses, pair wise mean comparison or dependent t-test are used. To evaluate the condition of influence of two accounting bases on each of indices of improving accountability and productivity in governmental organizations or comparison of accounting bases regarding accountability and productivity indices in organization, non-parametric Wilcoxon test is applied and under the test of main hypotheses, we can investigate the difference of the impact of accounting bases on each of required indices based on the views of respondents by mentioned test.

First hypothesis test: There is a significant difference between influence on improving accountability in governmental organizations based on full accrual and adjusted cash accounting bases.

**Table 4: The result of pair wise comparison of accountability based on accounting bases according to the views of study population**

Significance Sig.	Degree of freedom	t	Pairwise intervals Standard error	SD	Mean	Pairwise impact
0.000	107	24.54	1.187	5.61	-7.44	



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Based on the results of Table 4, t-value is 24.54 and its significance level is 0.000 and H<sub>0</sub> regarding the lack of difference between two accounting bases in accountability improvement is rejected and main hypothesis regarding the significant difference is supported. It can be said that according to all study population, accrual accounting system compared to common system has high impact on accountability of past governmental organizations. According to the experts view, this difference value is 7.44 in scale 0 to 100. In other words, according to the experts as the study population of this study, using accrual accounting system as 7.44% has high role in improving accountability of executive systems of Azarbayijan Gharbi province. Thus, using accrual basis is better.

**Table 5: The result of Wilcoxon test in terms of the difference of the impact of accounting bases on accountability indices**

Wilcoxon test		Mean of ranks		Accountability improvement indices
Sig.	Z	Common >accrual	Common <accrual	
0.000	12.54	2.45	84.54	Defining services cost
0.845	0.21	55.02	54.71	The extraction of accurate and timely information (easy access)
0.000	3.87	28.54	39.44	Comparison of real income and costs
0.241	0.84	49.89	51.62	The comparison of financial statements
0.000	4.36	29.02	42.65	The evaluation of performance of managers and obligation to accountability
0.000	4.89	42.80	63.08	Easy keeping the account and reporting fixed assets

As shown in Table 4, t-value is 24.54 and its significance level is 0.000 and H<sub>0</sub> regarding the lack of difference between two accounting bases in accountability improvement is rejected and main hypothesis regarding significant difference is supported. Thus, according to all study population, accrual accounting system compared to common system has high impact on accountability of governmental organizations and this difference according to experts is 7.44 ranging 0 to 100. In other words, according to the experts as the study population, using accrual accounting system as 7.44% has high role in improving accountability of executive organizations of Azarbayijan Gharbi province. Thus, using accrual basis is good. According to the results of Table 5, the investigation of the comparison of accounting bases on accountability bases shows that according to the respondents, in four indices “defining services cost” and “comparison of income and real costs” and “evaluation of performance of managers and obligation to accountability” and “easy retaining of account and reporting of fixed assets” significance value of Wilcoxon test is 0.000 and the main hypothesis regarding the difference of the impact of accounting bases on these four indices is supported. Also, the investigation of the ranks mean shows that in all these items, accrual accounting system has high ranks and accrual accounting basis has high impact on these four indices to improve accountability. Also, the investigation of the difference of ranks mean shows that the highest difference of influence of accrual and common bases is regarding the “defining services cost” index and in next stage, the highest difference is regarding “easy retaining account and reporting of fixed assets” and “evaluation of the performance of managers and obligation to accountability” and in the next stage, the influence of accrual method on index “comparison of actual income and costs” is high. These results show that Wilcoxon test is not significant regarding two indices “Extraction of accurate and timely information (easy access) and “comparison of the financial statements” and H<sub>0</sub> is supported. Thus, common and accrual accounting bases have similar influence on “extraction capability of accurate and timely information (easy access) and “capability of comparison of financial statements” and they are not different in these items.

Second hypothesis test: There is a significant difference between influence on improving productivity of governmental organization activities based on full accrual accounting and adjusted cash bases.

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**Table 6: The result of pairwise comparison test or productivity based on accounting bases according to study population**

Significance Sig.	Degree of freedom	t	Paired interval Standard error	SD	Mean	Paired impact
0.000	107	36.21	1.787	6.23	-11.35	

**Table 7: The result of Wilcoxon test in terms of the difference of the impact of accounting bases on accountability bases**

Wilcoxon test Sig.	Z	Mean of ranks Common accrual	> Common accrual	<	The indices of improving productivity of organizational activities
0.000	14.57	3.28	89.47		The capability of reports as prediction and planning bases
0.000	3.24	48.85	64.2		Determining index for evaluation of managers performance
0.005	2.91	56.54	63.08		Achieving the goals of financial and calculation rules
0.000	4.94	34.67	67.85		Continual using of governmental property
0.021	2.05	37.85	48.32		Avoiding financial sources wastage
0.000	4.84	27.62	42.50		Optimal use of organization sources

Based on the results of Table 6, t value is 36.21 and its significance level is 0.000 and H<sub>0</sub> regarding the lack of difference between accounting bases in improving productivity level is rejected and the main hypothesis regarding the significant difference is supported. According to most of study population, full accrual accounting system compared to common system (adjusted cash) has more effect on productivity of governmental organization activities. This difference is equal to 11.35 in terms of experts ranging zero to 100.

Thus, using accrual basis is good. The investigation of the comparison of accounting bases on productivity indices in terms of the view of experts in accordance to Table 7 shows that significance value of Wilcoxon test of all indices is less than acceptable value 0.05 and H<sub>0</sub> is rejected in all cases and H<sub>1</sub> regarding the difference in influence of accounting bases on productivity indices of organizational activities is supported.

In other words, according to the study population, in all productivity indices of organizational activities, accrual accounting basis is effective and plays better role compared to common accounting basis. The difference of its impact on one by one of productivity indices is higher than the impact of common accounting basis. The investigation of the mean of superiority of accrual accounting basis and the superiority of common basis of each of indices shows that according to the respondent experts of study population, the index “the capability of reports as prediction and planning basis” is mostly affected by accrual method.

In common method, this capability is very low. The difference of the impact of accounting bases on this index is much more than other productivity indices. In the next stage, the highest difference of impact is regarding “continuity of using governmental property”. It means that in accrual method, this index dedicates much score from the view of experts. Then, the difference of the impact of accounting bases on two indices “determining index for evaluation of managers performance” and “optimal use of organizational sources” is higher than other indices and finally two indices “avoiding financial sources wasting” and “optimal use of organizational sources”, respectively have the least difference to use two bases of accrual and common accounting. According to experts, the accrual accounting basis compared to common basis affects more the improvement of these two indices.

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### RESULTS AND DISCUSSION

The results of study showed that accrual accounting system in improving accountability and productivity of organizations activities is effective. It is claimed that in accrual accounting basis, it is mostly emphasized on effectiveness and the performance results and managers are responsible for full costing of operation. Also, accrual accounting basis can better reflects long-term obligations and total financial condition. In addition, it can be said the selection of accrual accounting basis in public sector leads to the increase of government accountability to its clients, better financial management of public services managers and comparison of management performance in various fields. These important changes are based on the change of attitude of public sector accounting from cash flow changes to the events leading to cash flow changes. Compared to common governmental accounting system (adjusted cash) in executive systems, using accrual accounting basis increases high accountability and transparency in presenting more performance and productivity of the activities of these systems. This is shown fully in Tables 2-7. The full accrual basis is one of the necessary steps being taken by governmental organizations regarding financial transparency. This basis as a necessity helps the clarity of organizations account and on other hand, it increases financial productivity of organization. Thus, we can consider the full accrual accounting basis in governmental offices and organizations as a big step to improve accountability to stockholders and appropriate fulfilling of their needs and high transparency in presenting public sector performance and this increases high productivity, efficiency and effectiveness of executive system activities of public sector

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