

# New Financial Management Systems in Corporatized National Universities: Innovation or Muddling Through? \*

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### Introduction

There is a move from cash to accrual accounting in the public sector. OECD and World Bank (2003) showed that more than half developed countries already adopted an accrual based accounting. In addition, FEE (2007) found that approximately 80 per cent of European public sector bodies (national government, government agencies, large region, small region government, and municipality) have implemented some form of accrual accounting. By contrast to the FEE's earlier paper (FEE, 2003), the trend toward an accrual basis of financial management has been steady progressed. Recently France introduced new accrual based accounting according to the Organic Law in 2006.

Despite of many theoretical merits and consistency with new public management (NPM), so far there are few countries in adopting an accrual based budgeting. Japanese government also has been moving toward the system in which accounting is on an accrual basis, while budgeting remains on a cash basis, i.e. a dual system approach. Like in other countries, accounting reform for government agencies and public bodies preceded national government and departments in adopting corporate accounting (GAAP). The independent administrative institutions (IAIs) and the national university corporations (NUCs) which are a type of semi-autonomous public

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bodies, firstly introduced an accrual accounting through double-entry bookkeeping as in the business sector respectively in 2001 and 2004, although the central government has prepared an accrual based financial reporting by adjusting the final accounts through a statistical method since 2000.

The financial management system for NUCs that is the subject of this paper, is innovative in eliminating the adjustments problem which might arise from the different bases of budgeting and accounting. In other words, when the revenues and expenditures in funding on a cash basis are balanced, under the system, the revenues and expenses in operation on an accrual basis are also balanced. Accordingly, it is significantly interesting for academicians and useful for practitioners about whether and to what extent the innovative system has resulted in expected effect on the financial management and decision making, in addition to accountability and comparability. However, IAs implement varied activities from operation to research and control. This might make some biases in evaluating the impact or influence by the system, because the outcomes might be influenced by the type of activities.

From this perspective, NUCs are appropriate in implementing the same kind of work that is teaching and research in higher education institutions. This article therefore reviews the previous theoretical and empirical studies on discussing the merits and shortcomings of accrual versus cash, dual versus consolidated system. Then the third section explains the innovative financial management system for NUCs including accounting standards. Also several theoretical hypotheses are proposed. The fourth section tests the hypotheses and examines whether or not intended outcomes are accomplished by adopting the new system. Finally some conclusions and policy implications are indicated.

## Literature Review

### *Accrual versus Cash*

The move toward accruals in the public sector has produced many discussions among scholars (Blondal, 2003; Carlin, 2006; Chan, 2003; Christiaens, 1999; Hepworth, 2003; Likierman, 2002; Lüder and Jones, 2003, Mathesen, 2002; Pallot, 2001; Paulsson, 2006a, 2006b) and practitioners including government institutions (GAO, 2000; Algenene Rekenkamer, 2004) around the world, even in the countries like Australia and the United Kingdom where full accrual based accounting and budgeting were already introduced.

As the proponents and opponents insist, both of the cash and accrual based

financial management have significant benefits and weaknesses in the public sector. The strength and weaknesses also are determined by the implementing costs and accompanying risks to the outcomes through using the system. In theory, as Paulsson (2006b) indicates, the discussions on proponents for or opponents against accruals can be summarized as follows.

Firstly, accruals system facilitates performance management and decision making through contrasting costs with quality of services. Second, accrual basis gives a much richer information such as costs comparable to other providers and includes information about assets and liabilities that cash based reporting does not provide. Third, the use of full economic costs might change organizational behavior more efficient resource management through incentive system for resource allocation such as capital charges. By contrast, opponents against accruals criticize that accrual based information is a much more complex and difficult to understand for non professionals. This feature may lead to misunderstandings and wrong decision makings of politicians. Also there are few accountants in the government sector, if any, in the public sector financial management using the business methods is seen as of lesser importance than legality and regularity. The context and environment of government sector is different from the private sector, as GASB (2006) recently addressed.

### *Dual versus Consolidated*

The second and much disputable issue is related to whether or not accounting and budgeting have to use the same accrual based principles, even though the transformation into accruals is good. The proponents to adopt the same or consolidated system argue that unless budgeting is based on the same accrual principles, the accrual accounting information does not have impact on decision making in resource management. They also indicate that a dual or separating system causes the matching problem between accrual and cash based measures that would lead to wrong decisions for non accountants.

However, the opponents against the same principles or proponent for a dual system argue that performance based management linking performance to budgeting that uses the information about costs and performance indicators on outputs or outcomes of the public service is not feasible in practice, because the budget is not only inherently political but significant part of public services are difficult to define the outputs and outcomes in quantitative terms. Besides, as GAO (2000) indicated, accrual budgeting has some risk for the legislature to lose the control against the executive office in addition to the complex and costly system.

The financial management system for NUCs has advantage in coping with the above problems, although it is considered a dual system. Remaining cash based budgeting, the system aims at improving efficiency giving NUCs to reserve a profit which is measured in accrual based accounting system. Furthermore by using some innovative methods the system intends to resolve the matching problem. Substantially accrual based accounting while some modified will harmonizes with cash based budgeting.

## **Corporatization and Financial Management**

### ***Corporatization of National Universities***

Japanese national universities were transformed into national university corporations (NUCs) in 2004. Each national university is a juridical public body separated from the central government, although the former position was just a branch of the Ministry of Education. The transition was implemented through the National University Corporation Act which was the enactment of the report entitled “New Vision for National University Corporations”. The report indicates three reforming ideas: identifying the missions and goals of universities, defining the responsibility and giving much autonomy in management through adopting business management tools, and introducing a competitive mechanism among universities in addition to respecting more needs of students and business world. Evidently, these principles have broadly appeared as the new public management (NPM) or new managerialism on higher education reform in other developed countries (Teixeira et al., 2004; OECD, 2004) whose focuses are on result and customer-oriented, market mechanism, and devolution or decentralization (Hood, 1991; Pollitt, 1993).

As Yamamoto (2004a) mentioned, corporatization of national universities has a greater element of public sector reform, while the Ministry of Education has called it an education reform (Toyama, 2004). In fact, the basic regulatory framework for the independent administrative institutions (IAIs), which are semi-autonomous public bodies implementing public services (Yamamoto, 2004b), applies to NUCs. The incorporation has dramatically changed the governance and management system of national universities. First, NUCs are at present placed at an arrangement of multiple-principals and agent relationship (Bernhaeim and Whinston, 1986), by contrast to the hierarchical or simple principal-agent model (Holmstrom, 1979) within the ministry. Second, much flexibility in management is given to NUCs in exchange of strengthening accountability for the results through the medium-term plan, which is

approved by the Education Minister. NUCs are required to set the targets on enhancing the quality of teaching and research, improving the operations and their efficiency. The performance is evaluated by the Evaluation Committee for NUCs every year. Third, NUCs have full discretionary power in management and operations given the medium-term plan.

### *Financial Management for NUCs*

The framework of financial management for national universities, as mentioned before, is basically applied to IAIs. Therefore, each NUC receives two types of funding: operating grants for current expenditures and subsidy for capital expenditures. The former grant is calculated by operating expenses minus revenues like tuition fees, although competitive funds such as research contracts are excluded from the revenues. Accordingly, total operating revenues are composed of operating grants, tuition fees, research contracts and other income. By contrast to line item budgeting which was adopted in the previous system under the National School Special Account Act, NUCs are given full discretion in their use of the operating grant. The unspent grant is able to carry forward to the following fiscal year. Further, when the NUC's balance is net surplus in the profit and loss statement, the surplus which will be approved by the responsible minister can be retained as a specific reserve. The latter is fully compensated for the capital expenditures (subsidiary rate is 100 %). The use of the subsidy is more constrained. It cannot be used for current expenditure and cost savings of the subsidy may not be retained. Also since the total amounts of the subsidies depend on the fiscal condition, in addition, there is no any defined formula on funding for capital expenditure like in operating grants, it is uncertain for NUCs to finance necessary money at an appropriate time. The difference in flexibility is caused by the funding source: operating grants from taxes, while subsidies mainly from national bonds.

Owing to the character of national universities, NUCs enjoy more flexibility in financial management by contrast to IAIs. Firstly, NUCs may borrow money directly from the private sector and issue bonds, although in case of IAIs they are exceptionally allowed. Secondly, each university has discretion to determine the tuition fees under the condition that the upper limit is a ten percent increase in the standard rate set by the Ministry of Education, It is noteworthy that operating grants are not decreased, because the formula uses the standard rate in calculating tuition fees, as far as the fees are within the upper limit and the standard rate.

In exchange of higher flexibility and autonomy in management, the accountability

for results and linkage between funding and performance are more strengthened than those of IAs. It is presumed that the mid-term performance of each national university would be considered in resource allocation of operating grants for the next mid-term plans. This is partly explained by the nature of same higher education institutions: performance for teaching and research might be comparable among national universities.

NUCs adopt an accrual based accounting by using double-entry bookkeeping in addition to cash based traditional accounts, while recently central and local governments have prepared accrual based financial reporting through adjusting cash into accrual basis in the end of fiscal year. Besides, every year NUCs shall submit the annual plan composed of budget, projected operating and cash flow statements: the latter two statements correspond to planned profit and loss statement and planned cash flow statement respectively. Further, they prepare financial statements consisting of balance sheets, profit and loss statement, cash flow statement, and operating cost statement. Consequently the financial management system for NUCs is considered a dual system in which budgeting is cash basis and accounting is accrual basis.

The requirement on financial control is multi-fold, other than external financial audit, internal audit and government auditor (the Board of Audit) also examine the financial reporting in addition to performance audits.

### *Accounting System*

As reviewed in previous section, dual system has some shortcomings. However, NUCs have several innovative instruments in accounting to cope with the problems while maintaining the merits of accrual concept.

In order to resolve the inconsistency between accrual and cash based performance in operations, in which financial performance might be measured in net surplus in accrual basis, while net deficit in cash basis, and vice versa, the following specific (different from corporate accounting) accounting treatments are introduced. Firstly, when tuition fees for the year are received, they are recognized as a current liability, then as the time progresses, the current liability is converted into revenue or income. Endowments and donations for specific purposes are similarly treated. If the money is accepted, it is recognized as a current liability. When they are expected for the specific purposes, the expenses are transformed into income. Secondly, the depreciation of fixed assets which are financed through the subsidies of capital expenditures and invested from the government at the establishment, are excluded from the profit and loss statement. Alternatively the cost of depreciation is deducted from the capital reserve

in the balance sheets. The particular accounting policy is explained, according to the Accounting Standards for National University Corporation, by the semi-autonomous status in which the government is the founder of NUCs, as a result, is responsible to finance or invest for the infrastructure (land and buildings) of universities. In other words, NUCS are not responsible to capital investments, although they are given discretion in operational management. On the other hand, when NUCs take fixed assets through the operating grants, tuition fees or endowments and donations, the liability is converted into deferred operating grants. Then the deferred grants are released to the Profit and Loss Statement over the useful life of the asset, accompanying with the depreciation cost for the period. Thus costs and revenues are balanced, and there is no impact on net income in accrual basis. This is caused by the aim of performance evaluation in profit and loss statement: if standard corporate accounting practices are adopted, given other conditions are identical there would be appeared in net profit in the acquisition period, while net deficit in using period after acquisition.

Owing to a dual system, funding is based on cash basis. This causes another accounting technique in order to keep the balance of profit and loss statement. In contrast to GAAP for retirement benefits, the standards do not allow to recognize an allowance for retirements of staff (correctly, employees holding the status of staff in national universities who were civil servants in the incorporated time). The retirement benefits will be delivered in part of the operating grants for the fiscal year when the retirements are expected.

Further, in compliance with the accounting standards, segment reporting is required for all national universities. The standards stipulate that NUCs shall disclose or publish the operating revenue, operating income and total assets by the segment. National university is usually composed of several faculties, institutions, and approximately the half holds the affiliated hospitals. The complex structure asks each national university to prepare the segment information in a common form to ensure transparency and accountability. However, for a reasonable period, the regulation is limited to disclose the hospital segment information.

To sum up, the corporate accounting policies are to harmonize the accrual based accounting with cash based funding by introducing the innovative techniques that net profit or surplus in accrual basis will be zero if NUC implements teaching and research activities in accordance with its plan. In other words, the financial performance based on the standards which are considered a modified accrual accounting is identical to that in cash basis, that is, net surplus or deficit in the account comparable to the

budget: the differences between cash and accrual accounting are exactly cancelled out. The profit and loss statement even though the style is accrual virtually is changed into operating statement in cash. In substance, to what extent the NUC has consumed resources in an accrual and economic term will be shown in the Operating Cost Statement (see Figure 1).

Figure 1. Operating Cost Statement

I	Operating Costs	
	(1) Expenses in Profit and Loss Statement	xxx
	(2) Income through university activities	△ <u>xxx</u>
	Operating Costs	xxx
II	Depreciation Costs excluded in Operating and Loss Statement	xxx
III	Expected Increase Retirement Benefits not making an allowance	xxx
IV	Opportunity Costs	xxx
V	Payment to the Treasury	△ <u>xxx</u>
VI	Net Operating Costs	<u>xxx</u>

Of course, balance sheets also improve the transparency and accountability to the public, because before corporatization there was no consolidated information on assets and liabilities. The most important financial reporting is however the Profit and Loss Statement. As mentioned earlier, the costs and revenues which are not responsible to the NUCs, are excluded in the statement to evaluate the financial performance in terms of accountable management. Since the profit is caused by more effort such as cost savings or earning income than the plan balancing revenues with costs, it might be an indicator of financial performance in the year. Also an incentive system which allows NUC to reserve a profit for the specific purposes works in using the data on the Profit and Loss Statement. In terms of measuring the right performance for a period, accrual based accounting is superior to cash based accounting, because of eliminating the influence by accounts receivable or payable. In this perspective, the accounting data in accrual basis are linked to funding: profit information is considered an interface between accounting and budgeting.

Consequently it is interpreted that financial statements as the instrument contribute to the following aims. Balance sheets make the financial conditions more transparent; profit and loss statement provides the information on financial performance; operating cost statement gives full economic cost to policy maker; cash flows statement shows cash flows by activity.



## **Analysis and Discussions on the Innovative Method**

### *Theory and Hypotheses*

The innovative accounting system intends to realize the merits of accruals and cash: improving accountability and efficiency through accrual based accounting, while keeping the traditional cash based budgeting to control the public money as a whole. NUCs are obliged to introduce accrual based financial management system in addition to former traditional system. In practice, accrual system would produce more appropriate financial performance than cash based system. The accounting standards for NUCs which adopt a modified accrual accounting principles, could eliminate the time influence on net surplus or deficit by payments or receipts in cash, although traditional cash based system recognize expenditure and revenue at the time of cash payment and receipt. It is presumed that the projected revenues will be equal to the projected costs in accrual basis, when funding or budgeting is determined in balancing revenues with expenditures in cash.

However, in case of national universities holding hospitals, the medical cost of the total costs shall be compensated from the medical insurance system which includes the treatments in university hospitals. The capital expenditures for university hospitals are usually financed by debt or loan, not subsidy from the government. This means that the activities of university hospital other than teaching and research have to be managed independently from the government like a private corporation. Accordingly, the NUC depreciates the hospital buildings and facilities and the costs are stated in the profit and loss statement by contrast to the general principles for NUCs. In other words, operating revenues for the NUC having hospital are not always balanced with operating expenses in accrual basis whether on planned or accrual, since the funding or budgeting is on the cash basis. The redemption (principal and interest paid on debt) in cash is not identical to the depreciation cost because of differences in the loan period and the useful life. In the planning stage, there might be net profit or net loss in accrual basis, even though projected revenues are balanced with projected expenditures in cash. In fact, the revenues and expenditures on budgeting for 2004 in cash basis were balanced for all national universities (87 NUCs), however, 35 universities had a net profit, 8 universities a net loss, 44 universities without hospitals balanced in accrual based operating plan. Similarly, while in 2005, the budgets for 81 universities of 87 NUCs were balanced, 44 universities stated zero profit in accrual based operating plan.

These constraints to the innovative method suggest that the difference between

actual and projected financial performance is more appropriate measure on an accrual basis in case of universities having hospitals than that of financial performance measured in the financial statements. On the other hand, in the universities without hospitals the difference basically is identical to the actual financial performance owing to the balanced budget (projected profit equals to zero). The method also might lead to misunderstanding about the figures of the university financial position and performance because non-professionals probably judge the performance just watching a profit measure like investors in business companies.

Therefore we can indicate the following hypotheses.

*H1a: Non-professionals are inclined to evaluate the financial performance according to the net income (surplus or deficit) information in the financial statements.*

*H1b: Financial performance indicators and their variances in accrual basis are smaller than those in cash basis.*

*H2: The differences between projected and actual financial indicators in accrual basis and their variances are less than those in cash basis.*

The universities holding hospitals can increase the medical revenues while reducing medical costs by contrast to the universities without hospitals. Accordingly we can assume that:

*H3: The financial performance of the universities having hospitals in an accrual basis and their variances are larger than those of the universities without hospitals.*

Likewise, the difference between cash payments on debts and interest and depreciation costs causes the bias on the net profit or loss for the financial performance due to the dual system in which funding is on cash basis and accounting is on full accrual basis (identical to GAAP). The dual system inevitably would result in projected or actual net loss in accrual basis, if the depreciation costs are significantly larger than the principal and interest payments. In this case, even though financial performance would be improved by comparison with the projected or planned, the national universities are not allowed to make a reserve for special purposes. In addition, the Ministry of Education set a rule on approving the reserve: the limit is the part of profit

corroborated in cash. This leads to the following hypotheses.

*H4: The incentive to make a profit for the universities having hospitals would be lower than those without hospitals.*

On the other hand, after the corporatization each national university could improve the skills in new financial management and adapt to the system through learning. The accrual data are also available to the Ministry of Education. Accordingly the Ministry has prepared a series of indicators for monitoring the financial performance of national universities. The indicators so far are considered some information for financial analysis rather than information for evaluation of performance. Although the indicators are not explicit performance measures, they would affect the accounting behavior of national universities to improve the financial measures or ratios. Consequently we can indicate the following hypotheses.

*H5: With the experience in accrual based reporting, the variances of financial measures for national universities become smaller.*

*H6: The indicators set by the Ministry of Education would induce national universities to consider them as the standards or criteria of performance.*

### **Data and Methods**

National universities have to publish all annual plans and reports whose financially related matters shall be audited by accounting firms. Therefore we can collect necessary data of FY 2004 and 2005 for analysis. In order to test the hypotheses, we use the financial indicators as shown in Table 1 and the newspaper articles.

Table 1. Financial Indicators for Analysis

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Measures for Financial Performance
OI=operating income (in accrual) or surplus (in cash)
ED=expenditures (in cash) or expenses (in accrual)
$\Delta$ OI=actual operating income or surplus minus projected operating income or surplus
Profit (in accrual basis)
Reserve for Specific Purposes
Financial Ratios set by the Ministry of Education
Staff Costs/ Operating Costs

General Operating Costs/ Operating Costs  
 External Revenues or Competitive Funds/ Operating Costs  
 Teaching Costs (excluding staff costs)/Operating Costs  
 Teaching Costs/Student Number=Unit Cost  
 Medical Costs/ Hospital Revenues

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### ***Relation between Accrual and Cash***

Firstly, the articles about national university accounts on quality newspapers were reviewed to test the hypothesis 1a (H1a). Since the accounting standards for NUCs are too complex for even the accountants familiar with GAAP to understand the concept and method, there is some risk that the writer also misunderstands the published data on finance of the universities. The top article on 20<sup>th</sup> August in 2005 in an economic newspaper (Nihon Keizai Shinbun) appeared on the title of “National Universities stated at Surplus of 110 billion yen”, though the surpluses or deficits do not necessary mean the actual financial performance. The same title of profit and loss statement made the staff writer to misunderstand the figure of the universities, owing to the different financial management system from the private sector. This is vouched for the complement article that national universities are advantageous in finance by contrast to the financial situation of private universities in which 30 per cent are in a deficit condition. Many readers probably understood that national universities had worked well despite a budget cutting by the government. Therefore H1a is generally supported.

In order to test the hypothesis 1b (H1b), the means and standard deviations (S.D.) of financial measures defined as OI/ED in accrual and cash basis are compared. As shown in Table 2, the means and S.D. of the financial ratio for 2004 and 2005 in accrual basis are smaller than those in cash basis. Therefore H1 is supported. Similarly, by comparing the accrual financial measures between universities with and without hospitals, we can examine the hypothesis 3 (H3). Both in 2004 and 2005, the means of OI/ED with hospital are larger than those without hospital. On the other hand, the S.D. of the universities having hospitals in 2005 is larger than that of universities without hospitals, however, in 2004 the figure was reverse. Accordingly H3 is partly supported.

On the other hand, using the data on two years since the corporatization, we have tested the hypothesis 5 (H5). The comparison of the financial measures on 2004 and 2005, as indicated in Table1, the mean and S.D. of OI/ED in 2005 are less than those in 2004. Hence, H5 is supported.

Table 2. Indicators for Financial Performance in Cash and Accrual Basis

Variable	2004				2005			
	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.
[OI/ED] <sub>a</sub>	4.180	3.300	-4.046	23.557	2.876	1.998	-1.721	10.851
[OI/ED] <sub>c</sub>	4.713	4.779	-1.717	24.593	4.946	3.400	-0.580	17.647
[OI] <sub>c</sub> /[OI] <sub>a</sub>	1.384	1.787	-0.705	10.415	2.987	5.250	-7.553	41.230
[OI/ED] <sub>ah</sub>	5.252	2.805	-4.046	11.264	3.302	2.172	-1.721	8.781
[OI/ED] <sub>anh</sub>	3.187	3.411	0.632	23.557	2.461	1.793	0.286	10.859
[OI/ED] <sub>ch</sub>	4.828	3.816	0.380	18.103	3.652	2.833	-0.580	17.647
[OI/ED] <sub>cnh</sub>	4.606	5.528	-1.717	24.593	6.210	3.433	1.052	15.702
[OI] <sub>ch</sub> /[OI] <sub>ah</sub>	1.076	1.446	-0.905	8.629	1.421	3.164	-7.553	16.000
[OI] <sub>cnh</sub> /[OI] <sub>anh</sub>	1.679	2.017	-0.585	10.415	4.518	6.322	0.554	41.230

\*a: accrual, c: cash, ah: accrual in case of university having hospital, anh: accrual basis in case of university not having hospital, ch: cash in case of university having hospital, cnh: cash in case of university not having hospital.

### *Relation between Budgeting and Accounting*

As mentioned earlier, NUCs have to prepare the annual plan and publish the financial reporting for accountability and their own management control. We compare the differences between projected and actual financial performance or budgeting and accounting in accrual and cash basis. Table 3 shows the differences in  $\Delta$  OI/ED for 2004 and 2005. In the both years, the mean and S.D. of  $\Delta$  OI/ED in accrual basis are smaller than those in cash. Consequently H2 is supported.

When we compare the difference based measures in  $\Delta$  OI/ED between 2004 and 2005, as in actual based measures of OI/ED, S.D. in 2005 is smaller than that in 2004. Hence from the perspective of performance evaluation, H5 is equally supported.

Table 3. Indicators for Difference between Planning and Actual Results

Variable	2004				2005			
	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.
[ $\Delta$ OI/ED] <sub>a</sub>	3.444	2.952	-7.911	23.557	2.170	2.381	-4.167	9.530
[ $\Delta$ OI/ED] <sub>c</sub>	4.713	4.779	-1.717	24.593	4.893	3.394	-0.580	17.647
[ $\Delta$ OI/ED] <sub>ah</sub>	3.951	1.528	-0.093	18.162	2.331	2.414	-4.167	9.530
[ $\Delta$ OI/ED] <sub>anh</sub>	2.970	3.770	-7.911	23.557	2.012	2.338	-2.194	10.851
[ $\Delta$ OI/ED] <sub>ch</sub>	4.828	3.816	0.380	18.103	3.662	2.815	-0.580	17.647
[ $\Delta$ OI/ED] <sub>cnh</sub>	4.606	5.528	-1.717	24.593	6.096	3.479	1.052	15.702

### *Intended and Unintended Outcomes*

We have indicated that the incentive instrument to make a reserve from the profit might have a different impact by university type. The universities having hospitals have a risk to be unable to make a full reserve owing to the character of funding and accounting standards. Table 4 shows the percentage of profit by university type and fiscal year that the Ministry of Education approved as a reserve for specific purposes in compliance with the medium-term plan. Compared to the universities without hospitals, the percentages of reserve to profit are much lower than those of the universities with hospitals. Accordingly H4 is supported. On the other hand, Table 5 compares the financial ratios for 2004 and 2005. Since the ratios are set by the Ministry of Education as reference information, the difference might be a measure of the influence. We can see that all financial ratios have been improved towards the good performance which the Ministry of Education implicitly states. Therefore, H6 is also supported.

Table 4. Relations between Profits and Reserves

FY	Profit (A)	Reserve for Specific Purposes (B)	B/A
<b>2004 (Total=89)</b>	<b>110,170 (¥millions)</b>	<b>52,585 (¥millions)</b>	<b>47.73%</b>
With hospital (N=43)	99,825	44,604	44.68
Without hospital (N=46)	10,345	7,981	77.14
<b>2005(Total=87)</b>	<b>71,213</b>	<b>41,439</b>	<b>58.19</b>
With hospital (N=43)	62,835	33,855	53.87
Without hospital (N=44)	8,378	7,584	90.52

Note: Three NUCs were merged into a new NUC in FY 2005, therefore, in the end of FY 2005 the total number is 87.

Table 5. Average Financial Ratios

Variable	2004(A)	2005(B)	(B) - (A)
Staff Costs/Operating Costs(OC)	59.7%	58.1%	- 1.5%
General Operating Costs/OC	3.9%	3.7%	- 0.2%
(Research Contracts+Endowments)/OC	6.6%	7.6%	1.0%
Teaching Costs/OC	4.8%	5.2%	0.4%
Teaching Costs/Students Number	¥171,000	¥187,000	¥16,000
Medical Costs/Hospital Revenues	68.6%	68.4%	- 0.2%

## Conclusion

To what extent accruals have the relative merits against cash is an important issue in the public financial management reform. In this paper, the ideas and reality of an innovative dual system were analyzed for Japanese semi-autonomous public bodies, NUCs. The system intends to realize the benefits of accrual basis remaining cash based budgeting. In the innovative system, the matching problem between accrual and cash based data and how to link performance on an accrual basis to funding or budgeting on a cash basis could be resolved by changing full accrual based accounting (GAAP) into modified cash based system in substance.

The empirical study showed that some advantages of accrual principle were realized in giving more useful and less biased information. However, a kind of self financing activities in the university hospitals conflict with subsidized teaching and research activities which are inherent in national universities. Since the medical costs other than teaching and research shall be recovered by the medical revenues like other public and private hospitals, full costs including depreciations of buildings are stated in the profit and loss statement. Accordingly, the projected balancing in the operating plan which is on an accrual basis is not formed at the outset in case of national universities having hospitals. This means that the profit and loss statement does not measure the financial performance compared to the annual plan under the medium-term plan. In fact, a newspaper reported that all NUCs except one stated a net profit in the first year after corporatization, although net profit or net loss is not a right measure for the annual financial performance. In the annual plan, some universities could be projected at a net profit and others at a net loss. The limitation also deteriorated the incentive mechanism to reserve a profit, because the reservation is approved when making a profit in the profit and loss statement. It is more difficult to make a profit for the universities that net loss is expected than those having a projected net profit. Also we indicated that financial indicators set by the government had played a controlling role on university financial management, although they are defined as reference information. The finding show a risk that the universities might seek to increase the indicators in scarifying other factors, despite of biased information in which there is no consideration for the scale effects and prerequisite conditions are not met.

Consequently in order to bring out the full benefits of the innovative system, it is suggested that separating account for the university hospital shall be established in addition to the account for university and schools, while it is not easy because of the

close interrelation between medical school and university hospital. Further research is needed in studying on the relationships between financial management system and organizational behavior: to what extent and how accrual and cash based system would change the attitudes and behavior towards efficient resource management and compliance with regulations.

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