

Measurement, Incentive, and Policy Issues for Performance Budgeting

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Introduction

Over the past two decades, most developed countries have moved the focus of management from inputs or processes into results through the diffusion of new public management¹ (NPM). With regard to the budget process, NPM has revived the concept of performance budgeting, in which performance (non-financial and financial) information is used in the budget process, although the term “performance budgeting” has many definitions and diverse approaches. According to a survey conducted by the Organization for Economic Cooperation and Development (OECD), 79 percent of the respondents stated that performance results were used in the budget process (Curristine, 2005).

It is evident that the approaches of performance budgeting vary from being merely a presentation in budget information to direct linkage between performance measures and budget allocations. It is difficult to identify the causal relation between results (outcomes) and inputs (resources); therefore, many countries adopt a middle approach that is performance-informed or indirect performance budgeting (Joyce, 2003). The Program Assessment Rating Tool (PART) in the US, which aims to provide a consistent approach for the integration of the budget and performance, also employs the concept of performance informed budgeting.

However, as Pollitt (2001) insisted, the effort toward the integration of performance and financial management has been marked by a history of failures. In addition, performance management, including performance budgeting, is considered as a renewal of efforts to make the budget process more informed through the use of performance information; in other words, it is a theory of political cycles driven by public opinion (Kelly, 2005), while, in part, it is also the evolution process of budget systems from control to management (Schick, 1966). In practice, the US Government Accountability Office (GAO) examined the implementation of PART and found that although it has enhanced the focus on performance, most PART recommendations are focused on improving outcome measures and data collections; moreover, there is limited evidence of the influence on outcome-based results (GAO, 2005). This is partly caused by the US federal system which composes of dual integrations of performance plans with budgets and accounts (GAO, 2002): US Federal Government is now seeking to linkage performance plans with budgets, and performance plans with accounts respectively, not integrate performance plans, budgets and accounts or financial reporting.

It is noteworthy that in any political and administrative system, performance budgeting hardly works well unless the actual performance is fed into the planning and budget processes. In addition, it is necessary to use the evaluation results to improve outcomes, efficiency, and quality of services; this can be achieved by allowing the management sufficient autonomy and flexibility in exchange of strengthening the accountability for the results (OECD, 1995; Mathesen, 2002). In practical terms, autonomy is considered as a necessary condition to motivate managers to improve their performance by rewarding them for accomplishing the goals or the expected results. Robinson (2003) indicates that allocative-efficiency considerations call for a strong ex post link between results and budgets, apart from the ex ante link between budgets and expected/planned results. However, the actual results show that at best, there has been weak link between budgets and performance, irrespective of whether they are ex ante or ex post (GAO, 2002; OECD, 2005). For example, Willoughby (2004) indicates that the use of performance information by the US State governments does not focus on arriving at an effective strategy for changing the current spending levels; at the same time, performance measurement supports improved communication, increasing awareness about results, and improving the quality of service. Also it is inconclusive, as Verhoest et al. (2004) reviewed empirical studies, whether enhancing autonomy leads to improving performance of public organizations.

On the other hand, NPM has advanced to introduce accrual based accounting into the public sector. Although the concept of performance budgeting does not automatically lead to accrual accounting in financial management (Kruijf, 2005), the autonomy in operations and result orientation driven by NPM require information on resources for obtaining the results. In adopting NPM, accrual accounting focuses on economic resources, which consist of financial and non-financial assets such as cash and deposits. Therefore, accrual accounting is more appropriate than the cash based system, whose measurement focus is cash. In practice, many countries are now adopting or plan to introduce accrual based accounting and some nations already use accrual based budgeting.

The above trends coupled with NPM are also observed in Japan. The semi-autonomous public bodies, which were hived off from the central government in 2001, adopt a package of NPM principles (Yamamoto, 2004). These organizations use performance budgeting and are given flexibility in their operations. Their financial reporting is based

on accrual accounting. As discussed earlier, to date, there are few studies on how ex post evaluation for performance has been employed in the succeeding budget process and to examine whether performance budgeting complemented with other management tools has promoted or encouraged an improvement in performance. Especially, it is uncertain whether or not incentive systems such as retaining surpluses as a reserve fund would motivate managers to earn greater income or decrease expenditures, and whether actual financial performance would affect the future budget processes. Thus, this paper investigates the implementation and outcomes of performance budgeting with regard to Japanese semi-autonomous public bodies. Before proceeding to the analysis, the outlines of semi autonomous bodies, or Independent Administrative Institutions (IAIs), are described in the second section. In the third section, by adopting a hybrid model of incrementalism and the principal-agent theory, several hypotheses are presented. In the fourth section, the model is analyzed using the panel data for 52 IAIs, and the hypotheses are examined. In the process of the analysis, it is examined whether the business accounting method would result in expected outcomes by contrast to traditional cash based information. Further, the analytical results are also discussed. Finally the conclusions and future research issues are presented in the fifth section.

Institutional Framework of IAIs

Governance

IAIs are independent public bodies that are legally separated from the central administration. Most IAIs used to be departments of ministries or former special public corporations (SPCs). Although the latter also comprise independent and semi-autonomous bodies, the governance system differs significantly from that of the IAIs. First, the operations of the IAIs follow a general rule, while the management of each SPC was controlled by a specific act. The responsible minister sets up medium-term (3 to 5 years) goals on finance, improvements in efficiency and quality of services. The IAIs then draft a medium-term plan designed to achieve these goals and submit this plan to the minister for approval. Within the terms of the plan, the IAIs have full discretion in managing the resources. In exchange for this, they are accountable for the results. The results are reviewed in two tiers by external members. In the first tier, an evaluation committee in each parent ministry monitors performance every year. In the second tier, the Commission on Evaluation of Policies and Evaluation of IAIs in the Ministry of Internal Affairs and Communications examines the evaluation results by these ministerial evaluation committees.

The commission, a meta-evaluation organ, may make some recommendations on the management issues including privatization or abolition of some activities of the IAIs in question. The chief executives of the IAIs are appointed by and are directly accountable to the competent ministers. These executives are required to possess a high level of knowledge and rich experience in the mandate of the IAIs and/or have relevant management skills. The executive members are appointed by the responsible minister. Their employment is a term contract, with a performance related pay system. On the other hand, the employees of the IAI are chosen by the chief executives, taking into account the conditions of the private sector and government employees.

Management

Not only are the IAIs allowed flexibility in financial management to a large extent, but they also adopt new business management tools. The IAIs receive two types of funding from the government, an operating grant and a subsidy for capital expenditures. For current activities, the operating grant, a kind of block grant, the amount of which equals the differences of the expected operating expenses and the expected earned income is used. In contrast with line item budgeting, there is no constraint on how the operating grant should be spent, provided the objectives are in accordance with the medium-term goals and plan. The grants may carry forward unspent balances to the following year. Moreover, the operating surplus may be retained as a special reserve fund, when the surplus results from saving costs or earning greater income than expected.

The shift from direct input control to indirect output control introduced a new management method into the IAIs to measure financial and non-financial results and an accrual accounting system to obtain financial results, while the budget process remains a cash basis as in the case of the central government. Similar to the double checking system in performance evaluation, financial statements are audited by accounting firms and inspectors in addition to the finances being examined by the audit office (Board of Audit).

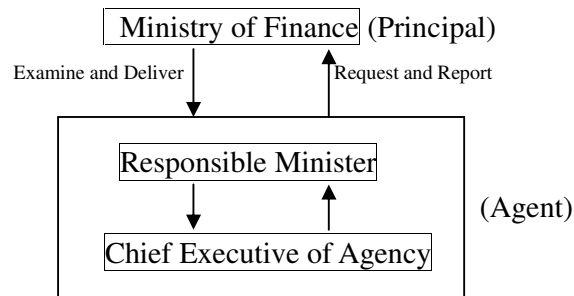
Model and Hypotheses

Model

Since performance budgeting uses performance information in the budgetary process, the main players in the case of IAIs are the Ministry of Finance (MOF), responsible Ministry and IAIs. The MOF examines the budget requests from the ministries

including the IAIs and prepares a draft of the budget. The chief executive of an IAI is directly accountable to the competent minister. Accordingly, the chief executive submits the budget request for the operating grant to the minister, who examines and prepares the budget request of the IAI by adding the subsidy for capital expenditures to the MOF. The competent minister has a mandate to determine the level of subsidies by contrast to the operating grants, which are basically calculated by a formula of objective measures. In the budget formation process, it may be considered that the principal is the MOF and the agent is the spending ministry including the IAI (see Figure 1).

Figure 1.



Note: The Evaluation Committees and Board of Audit are not considered.

The MOF has a preference for cutting the budget requests and balancing the budget, while the spending ministries have a preference for increasing the budgets (Niskanen, 1971). In the case of performance budgeting with flexible management, the MOF seeks to minimize government spending for IAIs through using the policy instruments to promote efficiency and feed ex post information into the budgeting, although to some extent considering the outcomes of the IAIs' activities.

On the other hand, in addition to the need to improve performance, the IAIs or the responsible ministries need to have larger spending budgets for other purposes; however, this is subject to government approval of the same, which is necessary for them to secure operating grants and subsidies for capital expenditures from the government. In fact, the standard formula of operating grants (budgets) is specified as follows:

$$A(t)=[P(t-1)+R(t-1)] \gamma + \varepsilon(t) - E(t) \lambda \quad (1)$$

where the operating grant at time t is denoted by $A(t)$. $P(t)$ and $R(t)$ denote personnel costs and operational costs other than personnel costs at time t , respectively; $E(t)$, the

earned income at time t ; $\varepsilon(t)$, specific elements at time t ; and γ and λ , the parameters or coefficients for efficiency and income respectively.

At a glance, the operating grants are automatically deducted on an annual basis, and these grants decrease with an increase in the income earned by the IAIs. However, the MOF can use $\varepsilon(t)$, which reflects the past (more precisely, two years ago) performance, as a feed-back element because the budgeting for time t is implemented in time $t-1$ when the actual performance in time $t-2$ could be specified or evaluated. If the performance of an IAI is excellent, the element will be positive and if the performance is poor, the element will be negative. Accordingly, the utility of the MOF (U) is specified as follows:

$$U(\text{MOF}) = -U_1[A(t)+C(t)] + \alpha U_2(P(t)) \quad (2)$$

where $C(t)$ is the subsidy of capital expenditures, $P(t)$ is the planned performance measures, the actual performance at time $t-2$, $P'(t-2)$ can be identified at t , $P(t)$ equals $f[P'(t-2)]$, and α is the coefficient (a positive weighted parameter of performance against resources).

On the other hand, the utility of the IAI (V) is described as

$$V(\text{IAI}) = V_1[A(t)+C(t)+E(t)+\varepsilon(t)+\Delta Y(t)] + \beta V_2[P(t)+\Delta P(t)] - V_3[D(t)] \quad (3)$$

Here, $\Delta Y(t)$ is the difference between the actual resources and planned resources at time t ; in other words, it is composed of more revenues and less expenditures than those allocated in the original budget; $\Delta P(t)$ is the difference between the actual performance and planned or expected performance at time t ; $D(t)$, the cost function of effort at time t ; and β is the positive weighted coefficient.

IAIs have discretion on choosing the effort level, provided the autonomy complemented with the incentive system and there is an asymmetry in information that the principal, MOF, is unable to observe the agents' effort². Consequently, IAIs can enhance the utility (V) by increasing their revenues in cash basis, having net surplus or improving performance at time t , unless the marginal cost is considerably higher. The effect appears as $\Delta Y(t)$ and $\Delta P(t)$ in equation (3). These effort will be encouraged by the flexibility in management, because unspent operating grants are able to be carried forward into the next year and net surplus at the year end can be retained as a reserve for specific purposes. This is in contrast to the former line-item input oriented budget

system in which at the end of the budget year, inappropriate expenditures often are spent to use up all the appropriations, because unspent budgets might be considered a budget surplus or over estimation that would lead to a cut in spending in the following year. In addition, the IAIs would be able to obtain larger resources as a reward for past good performance at time $t-2$, $\varepsilon(t)$. Although IAIs seek to obtain larger resources, their strategy in using resources involves the adoption of two approaches. One is to maximize the effort level or outputs, given that the resources are fully consumed. The other is to maximize the cost performance, that is, to manage resources in order to accomplish the pre-determined targets in the most efficient manner. The former case will lead to no cost savings, while the latter case will lead to cost reduction as compared to the planned strategy. While it is uncertain that these incentive and feedback effects would change the budget behavior, as Wildavsky (1964) indicated, the annual budget change is usually incremental and marginal. Therefore, budget resources in time t will significantly depend on the budget of the previous year at time $t-1$.

These arguments lead to the following hypotheses:

<Incentive>

Hypothesis 1a (H1a): The incentive system will encourage the IAIs to earn more income in their management.

Hypothesis 1b (H1b): The incentive system will promote an increase in the production of the operating income or net surplus in their financial management.

Hypothesis 1c (H1c): Whether or not the incentive system will produce a cut in expenditures will depend on the strategic approach of the IAIs.

Hypothesis 1d (H1d): Unspent operating grants will not produce a cut in the budgets of operating grants in the succeeding years.

<Incrementalism>

Hypothesis 2 (H2): The budget of the IAIs, with regard to total expenditures, operating expenditures, or government expenditures in the form of grants and subsidies from the government will depend on the budget in the previous year.

<Feedback>

Hypothesis 3 (H3): The financial and non-financial performance two years before will be fed into the budget in the current year. In other words, good (poor) performance evaluation will lead to an increase (decrease) in the budget.

Data Collection and Measures

In order to test our hypotheses, we collected data on all the 52 IAIs³ that operated in 2005 since their establishment in 2001. The data were collected from three published sources: annual plans for the IAIs, audited financial statements and their accounts, and performance evaluation reports by the evaluation committees in charge. The financial data cover the annual plans from 2001 to 2005 and the financial statements from 2001 to 2003. Also ex post performance data cover the evaluations for performance from the period 2001 to 2003. Our theoretical arguments and hypotheses focus on the impact of the incentive system and the feedback of past performance into budgeting. Therefore, the first group of variables is defined on the basis of the following: the differences between the actual and planned financial performance in terms of the earned income through exchange transactions, operating surplus or income, operating expenditures, and total expenditures. The division of the expenditures into two parts is caused by the funding system that is composed of operating grants and subsidies for capital expenditures. Since the funding and budgeting are based on a cash basis, the amounts significantly differ with the level of capital expenditures that are not delivered every year.

The second group is dependent variables on budgeting. For IAIs, as discussed before, the budgeting is focused on the total expenditures approved by the competent minister in terms of maximizing resources for their activities. However, considering the character of capital expenditures and the fixed costs of personnel expenses, the focus may alternatively be on the level of operating expenditures, excluding personnel costs for their operations and administrations. On the other hand, for MOF, the focus in the budgeting is on the operating grants and subsidies of capital expenditures which are government spending in the general account. The subsidies are however not recurrent spending, therefore, in order to test the feedback effect of evaluation to budgeting, the dependent variable is limited to operating grants.

Considering the hypotheses, H1a, H1b, and H1c, there needs no independent variable. However, in order to test H1d, H2, and H3, the following independent variables are specified. First, to test H1d, unspent operating grants are defined as the current liability of operating grants which is the residual part of the grants recognized as revenues⁴ in the balance sheet. Second, in order to test H2 and H3, the independent variables are the previous budget, earned income, operating surplus or net income, total expenditures in the case of a budget of total expenditures, operating expenditures excluding personnel

costs, and evaluation results. Here, all the evaluation committees have rated the performance of the IAIs on three levels, namely, outstanding, fully satisfied, and not satisfied. Accordingly, we operationalize these ratings through using 5-point Likert scale (outstanding=5, fully satisfied=3, not satisfied=1). With the exception of the evaluation results, these variables are collected from the annual plans, accounts, and financial statements. The previous budget is as discussed earlier the budget at time t-2, because the budgeting for time t is done in time t-1 when the most recent actual and budget amounts are at time t-2. Therefore, the previous budget is also regarded as a control variable.

Analysis and Results

Table 1 reports the differences between actual and planned or budgetary financial performance. As shown in the table, on average, the differences in the earned income and net operating surplus are positive from 2001 to 2003. In fact, of the total number of samples (156=52 IAIs x 3 year), just 13 from the earned income category and 15 from the net operating surplus were negative in which the actual financial performance was lower than the planned one. In contrast, with regard to the differences in expenditures, on average, the total expenditures are positive, which the actual expenditures were higher than the planned, while operating expenditures have a negative difference in average. However, in the case of operating expenditures, the difference is just -0.95 percent, which is the smallest, as against the planned expenditures (see Table 1). Thus, it could be rather said that the impact on cost savings was marginal in cash basis. In addition, total expenditures include capital expenditures, which are mainly financed through subsidies. Further, the subsidies are partly appropriated in the revised budget. As a result, the differences in the total expenditures have a larger fluctuation than those of the operating expenditures. It is also noteworthy that the levels of subsidies are determined by the responsible minister, not the IAIs.

Table 1. Differences between actual and planned financial performance (¥million)

Fiscal Year	Δ EI	Δ OS	Δ OE	Δ EX
2001	92.2	178.9	-201.6	-735.0
2002	170.6	203.5	-14.3	291.0
2003	702.6	157.2	79.0	1519.1
Total	159.1	183.3	-33.9	358.3
Expected Sign	+	+	?	?
Δ /TP	0.1806	0.0311	-0.0095	0.0463

Note: EI=Earned Income, OS=Operating Surplus, OE=Operating Expenditures, EX=Expenditures, TP=Total Financial Performance in EI, OS, OE, and EX.

Table 2 shows the results of the regression analysis performed to test H1d, H2, and H3. First, Model 1 tests the hypotheses in terms of the budgets for total expenditures (the dependent variable). As predicted in the arguments, the coefficients for the budget at time t-1 (before one year) and the difference in the operating surplus at time t-2 are significantly positive. Also it shows that the differences or budget variances in total expenditures and earned income at time t-2 have a significant negative effect on the budget of the total expenditures at time t. However, the coefficient of the performance evaluation results at time t-2 is insignificant. Accordingly the hypotheses are generally supported, with the exception of the impacts of increasing earned income and performance evaluation. The findings indicate that the budgeting for total expenditures is based on incrementalism; in addition, there is a slight positive effect in increasing budgeting (the coefficient is 1.061). Furthermore, the budget increases with an increase in the savings of spending as well as in income, are saved and income, while neither effort at increasing income nor a good performance in the evaluation have a positive impact on the budgeting.

Second, in Model 2, we test the hypotheses in the case of the operating budgets. As in Model 1, the coefficient for the previous budgets is significantly positive; however, in contrast with the case of total expenditure, the impact on the budget amounts decreases marginally (the coefficient is 0.980). Moreover, there is a significant association with budget variations in operating expenditures and earned income, while the impact is negative in the former and positive in the latter. In other words, as expected in the

hypotheses, the efforts at cost savings or increasing income have led to an increase in the budgets for operating expenditures. However, there is no significant relationship with the operating surplus or performance evaluation results while the coefficient for the operating surplus is positive as predicted and significant at $p < 0.10$. Therefore, the hypotheses are generally supported, with the exception of the impacts of operating surplus and performance evaluation.

Third, Model 3 analyzes the impact of feedback, incrementalism and flexibility in operating grants. By contrast to Models 1 and 2, unspent operating grants as a current liability are added to the independent variables to examine how the flexibility of carrying forward would affect the budgeting of the succeeding years. In other words, it is examined whether or not unspent budgets might result in cutting the budget for the following year. The results show that there is no significant association with the liability: flexibility in financial management so far does not lead to a decrease in budgeting. The impacts of past budgeting for operating grants, budget variations in the total expenditures, the operating surplus, and the evaluation results are similar to those in Model 1. All the signs of these coefficients other than the evaluation results are the same and significant, although the coefficient for the evaluation result is insignificant. In addition, the sign of the coefficient for earned income is opposite to that in Model 1: an increase in the budget variation in earned income corresponds to a larger budget for the succeeding year. Consequently, the hypotheses in Model 3 are supported, with the exception of the evaluation results. Among the independent variables, both the operating surplus and the unspent grants are measures in an accrual basis, while the other measures are defined in either cash basis or in non-financial terms. Although the budgets in the IAs are prepared in cash basis, it is noteworthy that accrual information has been used in the budget process; more precisely, accrual information has been fed into the budgeting.

Table 2. Regression Analyses

Variable	Model 1	Model 2	Model 3
	Total Expenditures	Operating Expenditures	Operating Grants
TE(t-1)	1.061(43.06)**		
OE(t-1)		0.980(101.97)**	
OG(t-1)			0.979(155.39)**
Δ TE(t-2)	-0.146(3.88)**		-0.005(1.23)
Δ OE(t-2)		-0.238(4.66)**	
Δ EI(t-2)	-1.712(13.52)**	0.727(44.94)**	0.091(2.06)*
Δ OS(t-2)	2.090(3.49)**	0.193(1.77)	0.263(3.81)**
LOG(t-2)			-0.019(0.26)
ER(t-2)	-734.64(1.35)	-137.62(1.72)	-17.67(0.48)
Constant	3142.47	654.51	94.68
F	915.30**	10878.18**	58345.39**
R ²	0.968	0.997	0.999
Adjusted R ²	0.967	0.997	0.999

Note: LOG=liability of operating grants, that is the grants carried forward to the following year,

ER=evaluation results by the committee (max=5, min=1)

**p<0.01, *p<0.05, t-values are in parentheses.

Discussion

The results provide generally support the incentive effects on financial management. In addition, the feedback of past performance into the budgeting was basically recognized, although the performance evaluation results have no impact on the succeeding budget. The reason for this might be explained by the nature of medium-term goals, and evaluation committees in the responsible ministries. Although the act describes the medium-term goals shall be set up by the competent minister, the actual process of setting the goals has been implemented by the IAIs preparing the drafted goals. Thus, there is no goal to be impossible to accomplish, in addition, even though quantitative goals are set, they are easily attained by ordinary effort. In practice, the average rating for the performance evaluation is 4.90, which is close to the highest ranking (5.0). Moreover, while members of the committee are appointed by the responsible minister, it is normal for the bureaucrats to choose the candidates and for the minister to simply approve of them. This practice leads to a situation in which the committee discusses the drafted evaluation results prepared by bureaucrats, and consequently, the draft is marginally changed into the final results. This is because the majority of the members

are expected to support the draft, even if some members oppose it. At present, an overseeing committee, the Council for Policy Evaluation and Evaluating Independent Administrative Institutions, merely expresses its opinions on the IAIs' operations or makes recommendations for improving the performance, rather than rating the performance like the evaluation committees. This two tier evaluation system coupled with the separation of mandates - into the Ministry of Finance in budgeting, and the Ministry of Internal Affairs and Communications in evaluation - within the central government weakens the link between evaluation and budgeting.

Further, it was found that in the case of operating grants, the flexibility in being able to carry them forward has a neutral influence on the budgeting: unspent operating grants so far have not caused a reduction in the budget for operating grants, while in a traditional input and line-item control, unspent appropriations are considered wasteful money that would produce a cutting item in the budgeting. On the other hand, as mentioned by system designer Dr. Fujita (1999), IAIs in Japan aim at downsizing the public sector. From this perspective, the coefficients for operating grants and operating expenditures in the previous year are 0.979 and 0.980 respectively, which means a negative incrementalism in budgeting. Therefore, although it might show the successful results, in the case of total expenditures the coefficient is 1.061, which means a positive incrementalism, or, an increase in the budget. These mixed results are largely caused by the bureaucratic reasoning that the reductions in operating grants or operating expenditures are offset by increasing the transfer from the competent ministry through contract research and other means. In fact, the total expenditures in the budget base have increased from 2001 to 2005. Accordingly, the primary objectives of rightsizing the IAIs have not yet been achieved.

Conclusion

By adopting a hybrid model of incrementalism and the principal-agent theory, this article has sought to investigate the extent to which ex post evaluation results could be fed into the budgeting process in the case of Japanese semi-autonomous public bodies. It also aimed to investigate whether or not a devolution scheme accompanied with flexibility in operations and strengthening accountability for results could encourage managers to improve efficiency or maximize the net surplus by using accrual information introduced into the semi-autonomous bodies.

The empirical findings show that in terms of financial performance, ex post evaluation has been reflected in the succeeding budget process, while non-financial information has not been fed into the budget process. In addition, in general, the incentive system has been effective for enhancing the earned income or net surplus in an accrual basis. However, budget formation can be largely explained by the previous year's budget and ex post performance information is not significantly associated with the succeeding budget, despite the two tiered evaluation system that aims at providing direct feedback to budgeting (Yamamoto, 2006). In other words, incrementalism plays a dominant role in determining the budget, although to some extent, financial information has also been fed into the budget process. Accordingly, in this case, it might be said that financial performance has been used in the budget process; in other words, this can be referred to as presentational performance budgeting in non-financial terms.

This mixed support for the hypotheses is mainly caused by the politics in the budget process in addition to the technical issues involved in performance measurement. The functions of the IAIs vary across organizations, and therefore, it is difficult to compare their performance on common measures such as a cost-benefit ratio, even performance could be measured in quantitative terms. Politicians are more interested in the allocation of public money based on policy priority that mirrors political will, rather than the outcomes of the policy.

Future research however will be needed in refining data processing, in terms of analytical horizon and unit. In this article, we used a pooled time-series data and opted to lag the dependent variable in all the regressions to eliminate problems of serial correlation (Beck and Katz, 2004). Despite this, there remains a problem of heteroscedasticity (Stimson, 1985). In addition, the Koizumi Administration has recently changed its focus from the system and organizational reforms to achieving the primary balance through cutting the public spending and partly increasing taxes, in recovering economic performance. The policy change will strengthen the linkage between the performance and the budget, especially in the case of poor performance for IAIs, the operating grants might be severely decreased. Further, as mentioned earlier, although this paper has analyzed the impact of evaluation on the budget process in terms of an organization, the IAIs, the feedback effect could be found in a policy area or program, other than organization as a whole.

Notes

1. Hood (1991) described the concept of NPM in its innovating stage. Moreover, Barzelay (2001) studied NPM in multiple disciplines.
2. The MOF is unable to identify the relationship between $Y(t)$ or $P(t)$ and $D(t)$. In more correctly, $\Delta Y/\Delta D$ and $\Delta P/\Delta D$ are unknown for the MOF.
3. The total number of IAIs was 57 when they were firstly established in 2001. However, by the end of FY 2005, 5 IAIs merged or were merged into other organizations. As a result, the data for this analysis are on 52 IAIs.
4. According to the accounting standards for IAIs, the operating grants are recognized as a current liability once received. Then, as the planned activities are implemented in accordance with the annual plan and the resources are consumed, the current liability turns into the revenues.

References

- Barzelay, M. (2001). *The New Public Management: Improving Research and Policy Dialogue*, University of California Press.
- Beck, N. and J.N. Katz (2004). "Time-Series-Cross-Section Issues: Dynamics, 2004" working paper.
- Curristine, T. (2005). "Performance Information in the Budget Process: Results of the OECD 2005 Questionnaire", *OECD Journal on Budgeting*, Vol.5, No.2, pp.87-131.
- Fujita, T. (1999). "National Universities and Independent Administrative Institutions", *JURIST*, No.1156, pp.109-122(in Japanese).
- GAO (2002). *Managing for Results: Agency Progress in Linking Performance Plans with Budgets and Financial Statements*, GAO-02-236.
- (2005). *Performance Budgeting: Efforts to Restructure Budgets to Better Align Resources with Performance*, GAO-05-117SP.
- Hood, C. (1991). "A Public Management for All Seasons?", *Public Administration*, Vol.69, No.1, pp.3-19.
- Joyce, P.G. (2003). *Linking Performance and Budgeting: Opportunities in the Federal Budget Process*, IBM Center for the Business of Government.
- Kelly, J.M. (2005). "A Century of Public Budgeting Reform: The "Key" Question", *Administration & Society*, Vol.37, No.1, pp.89-109.
- Kruijf, J.A.M. (2005). Effects of Accounting Frameworks on Control of Government Entities: An Assessment of the Usefulness of Accrual Budgeting and Accounting for Controlling Government Entities" paper prepared for the 10th CIGAR Conference.
- Mathesen, A. (2002). "Better Public Sector Governance: The Rationale for Budgeting

- and Accounting Reform in Western Nations”, *OECD Journal on Budgeting*, Vol.2, Supplement 1, pp.37-49.
- Niskanen, W. (1971). *Bureaucracy and Representative Government*, Aldine/Atherton.
- OECD (1995). *Governance in Transition*, OECD.
- (2005). “Using Performance Information for Managing and Budgeting”, GOV/PGC/SBO(2005)3, OECD.
- Pollitt, C. (2001). “Integrating Financial Management and Performance Management”, *OECD Journal on Budgeting*, Vol.1, No.1, pp.7-37.
- Robinson, M. (2003). “Tightening the Results/Funding Link in Performance Budgeting Systems”, Discussion Paper No.147, Queensland University of Technology.
- Schick, A. (1966). “The Road to PPB: The Stages of Budget Reform”, *Public Administration Review*, Vol.26, No.4, pp.243-258.
- Stimson, J. (1985). “Regression in Time and Space: A Statistical Essay”, *American Journal of Political Science*, Vol.29, No.4, pp.914-947.
- Verhoest, K., B. G. Peters, G. Bouckaert and B. Verschuere (2004). “ The Study of Organisational Autonomy: A Conceptual Review”, *Public Administration and Development*, Vol.24, No.2, pp.101-118.
- Wildavsky, A.(1964). *The Politics of the Budgetary Process*, Little, Brown and Co.
- Yamamoto, K. (2004). “Agencification in Japan: Renaming or revolution?” in C. Pollitt and C. Talbot (eds.). *Unbundled Government*, Routledge.
- (2006). “Performance of Semi-Autonomous Public Bodies: Linkage Between Autonomy and Performance in Japanese Agencies”, *Public Administration and Development*, Vol.26, No.1, pp.35-44.