

第9章

Case Studies of Internal Budgeting in Japanese National Universities: A Potential Data Source for Comparative Study with Other Countries

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1. Overview of Resource Allocation Models in Japanese National Universities Corporations

1.1. Conceptual Reconciliation of Resource Allocation Models between Japan and Other Countries

The term “Resource Allocation Model (RAM)” or its Japanese translation “shigen-haibun” is rather technical and is not commonly used in Japanese higher education institutions. The concept of RAMs in other countries such as the UK is undoubtedly much wider than the meaning of “yosan” (budgeting) in Japan, covering not only financial resources but also other economic resources such as human resources, physical assets and so forth. An especially important aspect of RAMs in other countries concerns the devolution of various responsibilities to organisational subunits. For instance, RAMs in the UK have historically been decentralised as a countermeasure to the negative consequences associated with the predominant system of centralised line-item budgeting. Based on such experiences, RAMs in the UK have evolved from simply mechanisms for compliance and control of expenditures to more multifunctional management tools such as performance responsibility budgeting, revenue responsibility budgeting and value responsibility budgeting (Massy 1996, 31-37). In short, more decentralised budgeting systems employ more internal revenue streams from the central authority to subunits. However, it is also a fact that “decentralisation” is not unilaterally valuable, and that “centralisation” has its own strategic implications (Jarzabkowski 2002, 6-8). Therefore, these two approaches are theoretical polarities; in reality, most universities operate somewhere between the two.

In the case of Japanese national university corporations (NUCs), line-item budgeting was abolished upon their incorporation in 2004. This dramatically decentralised at once the “yosan” system of fundamental resources provided by the central government to NUCs. However, it is likely that most NUCs’ internal “yosan” systems are still devoted to controlling their subunits’ expenditure limits and have not yet become multifunctional management tools. As shown later in this article, all three Japanese NUCs sampled reported that their internal “yosan” systems are “centralised”, a fact which supports the notion that most Japanese NUCs have not yet devolved their various central responsibilities to their subunits.

To pursue the comparative study of internal budgeting between Japan and other

countries, we must keep in mind that RAMs in overseas universities are more diversified in terms of the degree of centralisation/decentralisation than “yosan” systems are in Japanese NUCs.

1.2. Characteristics of Japanese NUCs’ RAMs after Incorporation

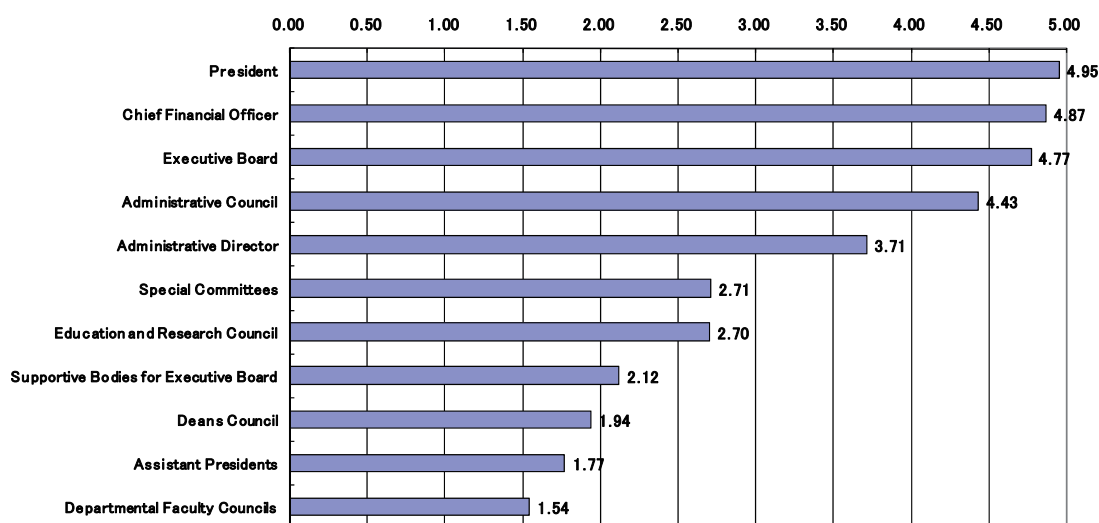
A survey on the changes made by NUCs in relation to organisation and operation, finance, human resource management and facility management as a result of their incorporation was conducted by the Center for National University Finance and Management (CNUFM) in February 2006. In this section, we review the results of the responses obtained from the Chief Finance Officers (CFOs) from 85 of the 87 NUCs to questions about several characteristics of NUCs’ internal “yosan” systems, and discuss the general trends regarding these systems after incorporation (CNUFM 2007, 228-258, 329-332).

Firstly, 87.6% of NUCs responded that their internal “yosan” system was largely or partly modified after incorporation, and 60% reported they had scheduled further modifications to their current system. Thus, incorporation with its associated abolition of line-item budgeting provided significant impetus towards the revision of the universities’ RAMs.

Secondly, this survey confirmed the characteristics of the NUCs’ current internal “yosan” systems and their future plans, in terms of the degree of incrementalism and zero-basis. It was found that 58.5% of NUCs formulated their annual “yosan” with an incremental approach based on previous year’s figures, while 37.8% partly adapted a zero-based approach and only 3.7% fully use zero-based budgeting. However, 72.2% of NUCs responded they would adopt zero-based budgeting partly or fully in the future, indicating a clear move from incrementalism towards zero-basis.

Thirdly, the survey examined which committees, boards or individuals were responsible, and to what extent, for the NUCs’ annual “yosan”. Chart 1 shows the scores for responsibility of each, with 5 being the maximum score.

Chart 1. Responsibility for Annual “Yosan”



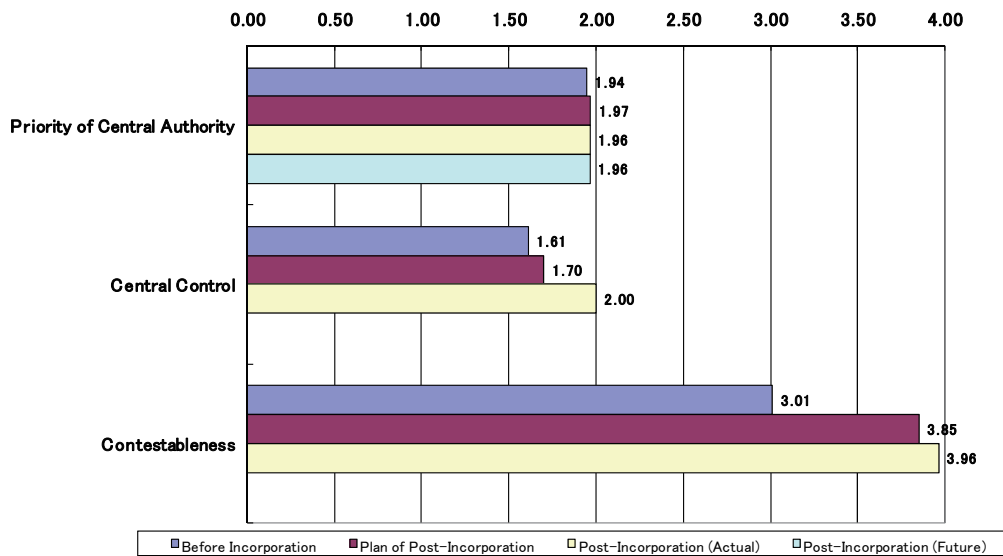
Source: CNUFM (2007, 257)

Under the National University Corporation Act, the NUCs’ organisational governance structure is uniform, and while the president is the decision-maker of a NUC’s annual “yosan”, he/she can decide it only through consultation with the executive board. In addition, the administrative council is responsible for discussing the president’s budget plan. Therefore, it is not surprising that these three bodies score higher than 4 in Chart 1. One notable finding is that the CFO, who is not explicitly responsible for budget under the Act, is deemed to hold the second most important position for formulating the NUCs’ annual “yosan”. Therefore, in subsequent studies of Japanese sample universities, we must bear in mind the likelihood that the three bodies stipulated in the Act are ostensibly responsible for budget formulation, but that the CFO has substantial influence over the decision taken.

Fourthly, this survey asked several questions in connection with the degree of centralisation/decentralisation of the internal “yosan” system. Three results are of some importance: the priority of the central authority’s budget (maximum of 3 points), the degree of central control over the expenditures of organisational subunits (maximum of 3 points), and the degree of contestability over the allocation of the research and education budget (maximum of 5 points). As shown in Chart 2, the NUCs generally intend to allocate their subunits’ budget in a more contestable manner than before, but they also have greater central control over their subunits’ expenditures. The central authority’s budget, therefore, has been and will continue to be an unchangeable priority. The observations above can be interpreted as follows. Since their incorporation, NUCs have received a block grant from the central government which is not earmarked for specific line-items. Therefore, the authority for control over its expenditure has devolved from the central government to the NUCs themselves. The reason for the

strengthening of central control after incorporation is to be found in this devolution. Additionally, NUCs have been able to allocate their internal budget to their subunits more freely and intend to use this discretion to the full. Making allocation more contestable is one of the possible measures they can adopt.

Chart 2. Centralisation/Decentralisation of Annual “Yosan”



Source: CNUFM (2007, 246-248)

Lastly, it is important to mention one of the predecessors of RAMs used by the NUCs. In 1964, the new National Schools Special Account Act came into effect, under which the national universities’ personnel expenses, other operational expenses and capital expenses were budgeted from the new special account. For the budgeting of the other operational expenses, this special account adopted a kind of formula-based allocation and the expenses were determined by a certain unit price per student and per teacher multiplied by the numbers of students and teachers. This formula funding process continued for the remaining 36 years of the 20th century. According to the survey of 2006, 51.9% of NUCs still utilised some form of this unit price system for formulating their internal “yosan”, so, essentially half of the NUCs adopt some kind of inherited formulaic RAM based on the number(s) of students and/or teachers.

2. RAMs Used by the Sample NUCs

Before presenting the details and analysis of the RAMs used by the three sample NUCs, in this section we will briefly examine the characteristics of their RAMs based on their responses to our questionnaire (Table 1). Hereafter, the three sample NUCs will be referred to as Japan-A (a top research-led NUC), Japan-B (a traditional research-oriented NUC) and Japan-C (a relatively low-level active research NUC).

Table 1. Responses from Sample NUCs

Question	Type of NUC		
	Top Research Led (Japan-A)	Traditional Research Oriented (Japan-B)	Relatively Low-Level Active Research (Japan-C)
1 Basic Characteristics	Centralised	Centralised	Centralised
2 Budgeting Process	Central Decision First	Central Decision First	Central Decision First
3 Allocation	Incremental & Zero-Based	Incremental	Incremental
4 Responsibility	Executive Board	CFO	Executive Board
5-1 Core Teaching Cost	Formula	Formula	Formula
5-2 Basis of Formula	Students(HC) & Teachers	Students(HC)	Students(FTE)
6-1 Core Research Cost	Formula	Formula & Negotiation	Formula
6-2 Basis of Formula	Teachers(FTE)	Teachers(HC) & Applications for External Funds	Teachers(HC)
7 Performance Basis	External Funds	External Funds & Fulfillment of Postgraduate Capacity	External Funds
8 Discretionary Funding	President & Deans	President & Deans	President & Deans
9 Review of RAM	Annual	Annual	Annual
10 Annual Surplus	Partly Carried Forward	Written Off	Written Off
11 Annual Deficits	Fully Carried Forward	Written Off	Written Off
12 Residences & Catering	Yes (included)	No (excluded)	No (excluded)
13 Purpose of RAM	Budgeting & Strategic Planning	Budgeting & Cost Control	Budgeting
14 Allocation	Departments	Departments	Departments
15 Overhead Costs	Top-Slicing	Top-Slicing	Top-Slicing
16 Basis of Top-Slicing	Annual Budgeting Policy	Necessary Amount Based on Previous Year's Costs	Necessary Amount Based on Previous Year's Costs
17 Administrative Costs of Dept.	Not Allocated	Based on Dept. Request	Not Allocated
18 Dept. Charge of Capital	Yes	Yes	Yes
19 Negotiation Downwards	No	No	Yes

Note: HC stands for Head Count; FTE for Full-Time Equivalent.

Firstly, many features common to the three NUCs can be confirmed. The basic characteristic of the RAMs used is that they are centralised. The annual “yosan” process starts midway through each year (they first set aside their central overhead costs). The budgeting approach is basically incremental, and they allocate the core teaching and research costs by formulaic methods based on the numbers of students and teachers. The budget portion related to subunits’ performance is basically allocated in proportion to each subunit’s earnings from external funds. They review the RAMs on an annual basis. These common characteristics match with the overall characteristics of the NUCs’

RAMs mentioned earlier: they have strengthened their central control over the “yosan” and inherited the traditional formulaic methods based on student and teacher numbers despite their incorporation. However, they intend to make their allocation methods more contestable, based in general on the subunits’ earnings from external funds.

On the other hand, there are some interesting differences among the three NUCs. Japan-A adopts a zero-based budgeting partly, and allows its budget centres to carry forward their annual surplus partly and deficits fully. Thus, Japan-A’s budgeting can be considered relatively more decentralised than the other two sample NUCs. Japan-B has some unique points with respect to its research costs formula which includes some performance-related elements and its performance basis which includes the fulfillment of postgraduate capacity. Moreover, only Japan-B allocates its departmental administration costs to budget centres. These aspects of Japan-B’s RAM indicate some devolution of responsibility to its subunits. Therefore, we may define Japan-A as adopting some “discretion-based” decentralisation and Japan-B adopting “responsibility-based” decentralisation. These definitions seem to be supported by the aims of their RAMs as Japan-A has a strategic planning purpose—which can be translated to mission-oriented departmental discretion), whereas Japan-B has a cost control purpose (which can be translated to departmental costs control responsibility). Japan-C adopts a fully centralised RAM typical of those used by NUCs.

We will close this section with mention of the following two findings. Firstly, only Japan-B responded that the CFO was the most responsible organisation/individual to handle its budgeting; the other two named the executive board. Thus, Japan-B responded by stating the actual most substantially influential body (the CFO) in its budgeting process, whereas Japan-A and Japan-C responded according to the provisions laid down by the National University Corporation Act. Japan-A and Japan-C do, however, have a most substantially influential body operating aside from the executive board as stipulated in the Act. Secondly, in the conceptual reconciliation of RAMs between Japan and other countries like the UK, none of the three universities reported the allocation of revenue responsibility to their subunits and as such, they were not able to respond to the questions concerning their revenue allocations.

3. Details of Each NUC’s RAM

In this section, we introduce the RAM of each of the Japanese NUCs in detail, with particular focus on the annual budget process and formulaic mechanisms adopted.

3.1. Japan-A – a Top Research-Led University

The following information was collected by an interview survey of administrative staff of Japan-A’s financial department.

3.1.1. Japan-A's Annual Budget Process

Japan-A has roughly the following four streams in its annual budget formulation for teaching and research functions.

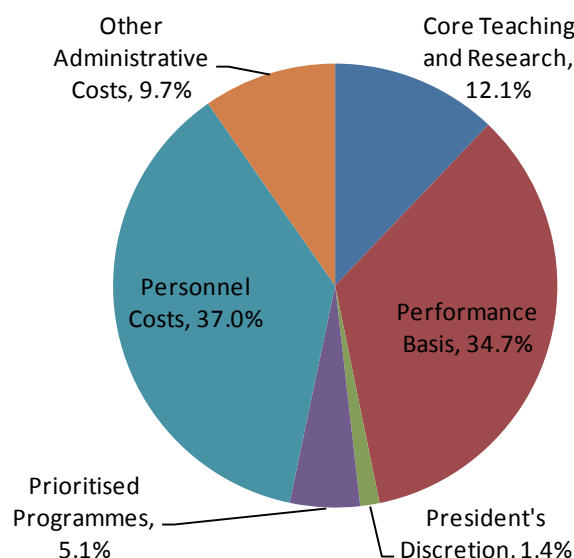
- a) Core Teaching and Research Costs Allocation: This is calculated mechanically by the financial department using formulae. There is no negotiation between the centre and departments.
- b) Performance-Based Allocation: A certain percentage (generally 30%) of external funds received from both the public and private sectors are received once by the centre as the overhead. This overhead pool is then redistributed, with 35% allocated for departmental rewards and the remaining 65% for the central administration. The calculation is rather mechanical.
- c) President's Discretionary Allocation: This is an internal competitive fund. Each department submits proposals to the president, who then decides which proposals to accept.
- d) Prioritised Programmes Allocation: Japan-A has established seven prioritised programmes as follows: (1) safety issues, (2) issues involving externals to be resolved, (3) problems related to its overall campus, (4) emergency issues related to education, (5) promotion of the university to students, industry and society, (6) emergency issues related to research and (7) improvement of the education and research environment. This allocation employs a negotiation process between the centre and departments.

Regarding the prioritised programmes, each department has a special division comprising both academic and administrative staff for formulating a new departmental budget requests. Requests are submitted to the financial department.

The financial department then formulates the annual budget plan, which includes core teaching and research costs, the performance-based fund, a review of the departmental requests for prioritised programmes and so forth, in collaboration with a chief executive in management who is currently an academic. Largely through discussion between the financial department and the chief executive in management the budget plan is finalised. Their budget plan is next discussed by an executive panel composed of selective members of the executive board and, finally, a revised budget plan is authorised by the executive board (and subsequently confirmed by the administrative council).

The composition of Japan-A's annual budget for 2008 is shown in Chart 3.

Chart 3. Annual Budget 2008 of Japan-A



3.1.2. Japan-A's Budgeting Mechanisms

As stated earlier, Japan-A employs its own formulae for calculating the core teaching and research budget. Basically, Japan-A continues to adopt the unit price-based calculation used before its incorporation. There are two parts in this calculation.

The first is on a unit price per teacher basis. Unit prices differ in accordance with teachers' classes. For instance, about ¥1.8 million is allocated per professor, about ¥1.1 million per associate professor and ¥294,000 per assistant professor.

The second is on a unit price per student basis. There are various unit prices, including undergraduate teaching costs (¥24,000 per student), postgraduate teaching and research costs (Master's courses: ¥64,000 per student and Doctor's courses: ¥76,000 per student), research assistant costs (¥50,000 per person) and so forth.

However, as shown in Chart 3, the share of the core teaching and research costs in the annual budget amounts to only 12.1%, compared to the 34.7% share of the performance-based budget, which is the redistribution of overhead from external funds. This means that Japan-A has strong earning power from external sources and, therefore, maintains and enhances its education and research quality by this competitiveness.

3.1.3. Japan-A's Annual Budget Policy

Although the main financial source from the central government to NUCs has been continuously reduced by 1% per year since incorporation, Japan-A has not yet reduced any of its unit prices for calculating its core teaching and research costs, and has absorbed the shortfalls by reducing the central administrative costs.

Additionally, Japan-A has been able to secure a fair amount of budget for its prioritised

programmes (there was no such kind of budget before incorporation), meaning Japan-A has been able to formulate its budget more strategically than before.

3.2. Japan-B – A Traditional Research-Oriented University

The following information was collected by interview survey of the administrative staff of Japan-B's financial department.

3.2.1. Japan-B's Annual Budget Process

Japan-B has roughly the following three streams in its annual budget formulation for teaching and research functions.

- a) Core Teaching Costs Allocation: This is calculated mechanically in the financial department using a formula based on unit price multiplied by number of students. There is no negotiation between the centre and departments. This allocation is adopted by the undergraduate departments.
- b) Core Research Costs Allocation: This is calculated by a formula and certain negotiations between the centre and departments. There are four parts to this allocation: (1) unit price multiplied by number of teachers, (2) certain proportion of external funds earned, (3) fulfillment of capacity and (4) adjustments for avoiding sudden large shortfalls. (1) to (3) are calculated mechanically while (4) is decided through negotiation. This allocation is adopted by its postgraduate schools.
- c) Prioritised and Strategic Programmes Allocation: Japan-B has established four prioritised and strategic areas as follows: (1) education, (2) research, (3) social contribution and (4) facilities improvement. This allocation is decided based on contestability.

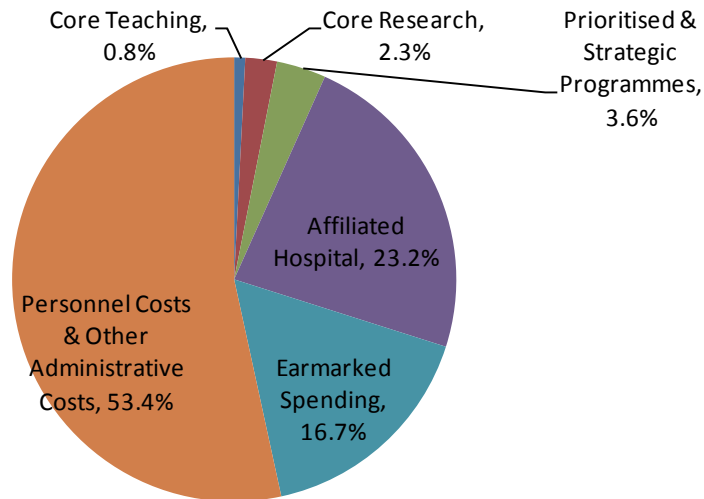
Regarding the core research costs, the research management division firstly formulates a budget plan based on three above-mentioned streams; especially, this division takes into account each postgraduate school's previous year's actual budget and plan to avoid any sudden shortfalls. Adjustments to the budget plan are then negotiated between the centre and departments in two councils: the general operation council which is composed of the president, vice-presidents, administrative directors and internal auditors, and the council of Doctor course directors which is composed of only academics. These two councils make necessary revisions to the original budget plan and the revised version is then ultimately decided by the education and research council.

Regarding the prioritised and strategic programmes, each department submits its proposals to the vice-president in charge of one of the four areas (e.g., if a department prepares a proposal for an educational project, it must submit the proposal to the vice-president in education). Vice-presidents evaluate and select the proposals, and recommend their selections to the general operation council. Largely, the general

operation council makes the final decisions on this budget, but the executive council nominally authorises it.

The composition of Japan-B's annual budget 2008 is shown in Chart 4.

Chart 4. Annual Budget 2008 of Japan-B



3.2.2. Japan-B's Budgeting Mechanisms

Regarding the core teaching costs, Japan-B's formula on a unit price per student basis is very similar to that of Japan-A. Japan-B categorises ten price groups, comprised of undergraduate courses in (1) humanities and social sciences, (2) natural sciences and (3) medicine, Master's courses in (4) humanities and social sciences, (5) education (training of new elementary and secondary school teachers), (6) natural sciences and (7) medicine, and Doctor's courses in (8) humanities and social sciences, (9) natural sciences and (10) medicine. The unit price ranges from ¥9,900 per student for (1) to ¥96,650 for (10).

The formula employed for calculating the core research costs is more complicated than for Japan-A. There are 4 parts to this formula. The first is the simplest: a unique unit price (about ¥400,000) multiplied by number of teachers. The second is certain percentages of external funds earned (12% of grants-in-aid for scientific research and 6% of other external funds). The third is the fulfillment of capacity, which is unit price (Master's course: ¥30,000 and Doctor's course: ¥40,000) multiplied by two years moving averaged numbers of students starting at the postgraduate schools. The fourth is the adjustments decided through negotiations, as described in the previous section. In short, Japan-B figures out ways and means to motivate the departments to improve their performance by adopting this formula.

Besides the above, a certain percentage (generally 30%) of external funds from both the public and private sectors are received once by the centre as the overhead and this overhead pool is then redistributed as 50% for departmental rewards and the remaining 50% for the central administration. The difference from the case of Japan-A is that Japan-B does not provide this amount to departments as a certain portion of restricted overhead but as an unrestricted fund. Thus, departments can use this redistributed fund at their own discretion.

3.2.3. Japan-B's Annual Budget Policy

Just as for Japan-A, Japan-B tries to keep its unit prices for calculating its core research costs in order to maintain the quality and the competitiveness of its research activities. Therefore, Japan-B has been coping with the annual 1% reduction rule by reducing its central administrative costs.

Similarly to Japan-A, Japan-B has managed to secure some considerable amount of budget for its prioritised and strategic programmes. This budgetary strategy was created after its incorporation.

3.3. Japan-C – A Relatively Low-Level Active Research University

The following information was collected by interview survey of the administrative staff in Japan-C's financial department.

3.3.1. Japan-C's Annual Budget Process

Japan-C has roughly the following four streams in its annual budget formulation for teaching and research functions.

- a) Core Teaching Costs Allocation: This is the sum of two calculations: one is a formulaic calculation based on each department's point share, the other is a fixed amount based on the previous year's actual amount.
- b) Core Research Costs Allocation: This is the same as the calculation for the core teaching costs.
- c) Teaching and Research Supporting Costs: This is a fixed amount based on the previous year's actual amount.
- d) Strategic Allocations: Japan-C has established five strategic allocation measures as follows: (1) president's discretionary allocation, (2) deans' discretionary allocation, (3) allocation for the improvement of education, (4) educational environment improvement and (5) allocation for the promotion of research. This allocation is, in general, decided based on contestability.

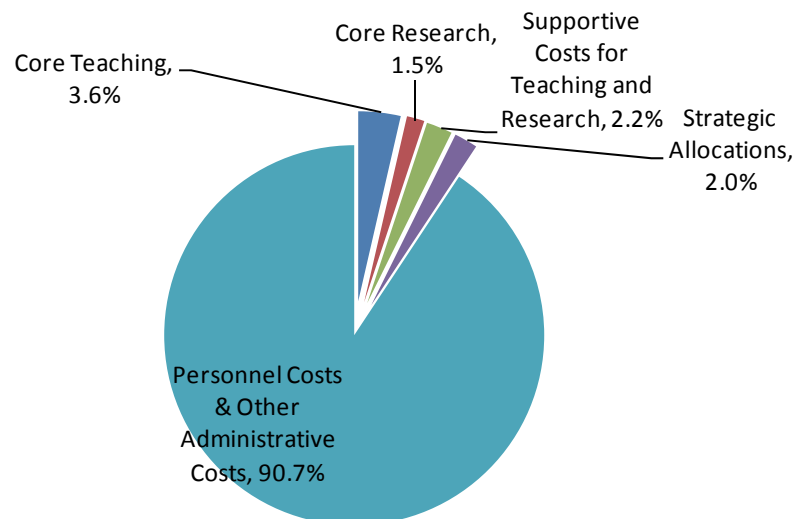
Regarding the annual budget formulation, Japan-C has no parts automatically calculated such as the core teaching and research costs of Japan-A and Japan-B. The

financial department of Japan-C formulates the budget plan by considering all the aspects, including last year's financial results for each department, departmental budget requests for new projects, the necessary amount for central administration, strategic allocations set-aside and remaining core teaching and research costs. The financial department then consults the following two councils about the initial budget plan: the examination council which is composed of the president, senior executives and special supportive staff for the president, and the supporting council which is composed of the president, senior executives and the internal auditors. These three organisations continuously discuss and improve the budget plan before officially finalising it. Through the internal financial committee's check, this budget plan is then sent to the administrative council. Largely, the administrative council decides the annual budget and sends it to the executive council which authorises it and reports it to the education and research council.

As confirmed from the above, Japan-C requires more negotiations for formulating its annual budget than Japan-A and Japan-B. The formulae employed to calculate the core teaching and research costs can not secure a certain necessary amount in order to maintain the quality of education and research within the budget process, but can allocate the continuously shrinking budget equally among its departments.

The composition of Japan-C's annual budget 2008 is shown in Chart 5.

Chart 5. Annual Budget 2008 of Japan-C



3.3.2. Japan-C's Budgeting Mechanisms

Regarding the core teaching costs, Japan-C's formula on a point share basis is very different from those of Japan-A and Japan-B. This formula stipulates certain points for

a student in a certain discipline. The detailed points are determined as shown in Table 2.

Table 2. Points per Student for Teaching Activities of Japan-C

Student Classification		Humanities & Social Sciences	Education (Training of New Teachers)	Natural Sciences
Undergraduate	Freshman	4	4	4
	Sophomore or later	4	5	6
Postgraduate	Master	47	79	83
	Doctor	-	-	95
Special Training		-	40	-

Each department calculates the sum of its points as Σ [number of each type of student * points for each type]. Each department's share is then calculated as its sum of points divided by total points of Japan-C or Σ [each department's sum]. The total amount of the core teaching costs is determined by a process of elimination of indispensable costs. Each department's core teaching budget is finally calculated by the total amount of core teaching costs multiplied by each department's share. As we can now confirm, this method's purpose is fully focused on how to allocate scarce resources equally among subunits, but is not focused on how to secure the necessary amount of resources to maintain the quality of teaching as in the cases of Japan-A and Japan-B. However, this calculation can determine only 1.3% out of 3.6% as the total core teaching costs shown in Chart 5. The remaining 2.3% is determined by another negotiation process.

Regarding the core research costs, Japan-C's formula on the point share basis is very different from those of Japan-A and Japan-B just as the core teaching costs. This formula stipulates certain points for a certain class of teacher, as shown in Table 3. The calculation process is the same as for the core teaching costs.

Table 3. Points per Teacher for Research Activities of Japan-C

Teacher Classification	Professor, Associate Professor, Lecturer	Assistant Professor
Master's Course	4	2
Doctor's Course	7	3.5
Regular Subjects	4.5	2.25
Served Concurrently for Dr's Course	3	1.5
Visiting for M's Course	3.5	1.75
Collaborative Dr's Course	2.1	1.05

As we confirmed before, this method's purpose is fully focused on how to allocate scarce

resources equally among subunits, rather than on how to secure the necessary amount of resources to maintain its research competitiveness as in the cases of Japan-A and Japan-B. According to the internal rules of Japan-C, the core research costs calculated by this formula must be distributed to individual teachers by each department.

The above calculation can determine 1.2% out of 1.5% as the total core research costs shown in Chart 5, with the remaining 0.3% determined by another negotiation process. The rationale behind the point allocation system used for calculating the core teaching and research costs is unclear; no-one knew how they were initially determined.

Besides the above, a certain percentage (generally 30%) of external funds from both the public and private sectors are received once by the centre as the overhead, which is then redistributed as more than 60% for departmental rewards and the remaining for the central administration in the case of grants-in-aid for scientific research. In the case of commissioned or collaborative research, 80% of the previous year's actual receipt is automatically allocated to the departments. In the case of donations, 7% is received by the central administration as the overhead, of which 2% is allocated to departments and the rest is retained centrally. Japan-C has fewer resources than Japan-A and Japan-B and, therefore, this motivates departments to win external funds to offset their budgetary shortfall by regaining more from the overhead.

3.3.3. Japan-C's Annual Budget Policy

Completely different from Japan-A and Japan-B, Japan-C can not avoid reducing its core teaching and research costs in accordance with the efficiency rule of -1% per year. Therefore, Japan-C intends to allocate its budget shortfalls equally among the departments by using the formulae based on the point share. On the other hand, Japan-C has been increased its strategic allocations gradually after incorporation and now faces a difficult question: "concentration or equity, which is better?"

4. Comparative Analysis of Sample NUCs

Before conducting any future comparative study between Japan and other countries, a comparison of the three Japanese sample universities is necessary. We can categorise their RAMs into four models: (1) a formula-based or bureaucratic model, (2) a political decision-making or coalitional model, (3) an incremental model, or (4) a bottom-up model.

First of all, Japan-A uses formulae based on unit prices per student or teacher. At first glance, it would seem to be a sort of formula-based or bureaucratic model. However, we must carefully consider the key driver. Of course, Japan-A intends to allocate its resources equally among its subunits, but it is more focused on securing the past level of unit prices in order to maintain its research competitiveness. In addition, a large portion of the subunits' budget is performance based. On one hand, the formula-based or bureaucratic model has a very mechanical and static image, while on the other,

Japan-A's model is very dynamic and can be described as a viscous circle of securing necessary core research funds -> enhancing research competitiveness -> enhancing earning power of external funds -> increasing performance-based research funds -> enhancing research competitiveness and earning further power -> enabling it to keep necessary core research funds -> and right back to the beginning. Consequently, it is difficult to categorise Japan-A's RAM into one of the four categories, but it could be classed a formula-based model characterised by its intention towards dynamic growth of competitiveness. Japan-A can adopt this kind of RAM due to its rather abundant resources.

Secondly, Japan-B also uses formulae based on unit prices per student or teacher. Therefore, its RAM also seems to be a formula-based or bureaucratic model. However, Japan-B built several performance-related variables and a negotiable factor in their formulae, signifying that their RAM's characteristics are more multifunctional. For instance, it intentionally motivates departments to win more external funds and maintains certain budget amounts on a historical basis, but unintentionally reflects the political power balance among departments through its negotiable process. While Japan-B's RAM is very similar to that of Japan-A, it is, nonetheless, less dynamic and more reflective of the internal political balance of power and historical track record of each department's receipt of funds. It is also difficult to categorise Japan-B's RAM into one of the four categories, but it could be labelled a formula-based model fixated on historical track records. Japan-B can adopt this kind of RAM also because its resources are rather abundant.

Thirdly, Japan-C employs formulae based on departmental workload in the form of numerical points. Only Japan-C among the three universities reflects the government's efficiency rule in their core education and research costs, and they intend to allocate the consequent shortfalls equally among departments through the use of the formulae. Whereas Japan-A and Japan-B intend to maintain their unit prices at least the same level prior to their incorporation for calculating their necessary amounts, Japan-C first decides a pie through a negotiable process of elimination and then intends to divide it into equal pieces for the departments. Therefore, Japan-C's RAM can be characterised as a sort of formula-based or bureaucratic model with some factors of political decisions. Japan-C must adopt this kind of RAM since its resources are rather scarce.

Finally, it should be pointed out that all three universities intend to increase their prioritised or strategic budget allocation following incorporation. Japan-A and Japan-B can secure this kind of budget from their rather abundant resources alongside the core costs, while Japan-C has to squeeze the core costs and make a room within its scarce resources in order to secure such kind of budget. All three think their "yosan" should be more strategic, but each operates under different circumstances.

Acknowledgement

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