

University of Groningen

De invloed van externe budgetparameters op de interne budgettering van academische ziekenhuizen

Crom, B.

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:
2005

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Crom, B. (2005). *De invloed van externe budgetparameters op de interne budgettering van academische ziekenhuizen: verklaringen voor verschillen in budgetteringssystemen en hun effecten*. [, Rijksuniversiteit Groningen]. s.n.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Summary

Summary

The structure of the research

Which factors influence the application of external budget parameters in the internal budgeting process of academic hospitals¹ and what are the effects of the use of internal budgets? That is the principal question of this study. External budget parameters are parameters that determine the size of the total hospital budget. According to the defrayal system of the function-related budgeting method (FB), which was in force during the previous years (and to an important extent still is, see below), these parameters are fixed by the government. With respect to the (variable) part of the budget aimed at production they consist of weighed admissions, nursing days, day care, weighed first visits to the polyclinic and specific treatments concerning the regular (routine-based) care as well as the so-called top clinical (highly specialised) treatments. The degree to which these parameters (volume and price) play a role in determining the size of internal budgets at various organisational levels (divisions, departments) is indicated in this study as the degree of **coupling** (between the external and internal budget).

Providing answers to the abovementioned question, this study aims at examining whether the relations assumed in the business science literature among budgeting systems, objectives, contextual variables and the use of budgets do in fact exist. Especially with regard to the relation between context and system, attention is especially paid to the possible occurrence of two types of “mistakes” made by not-for-profit organisations (freely quoted from Hofstede, 1981, p. 206 and further): 1) no use is made of a figure-based budgetary system in a situation to which it is applicable, 2) a figure-based budgetary system is applied in a situation to which it is not applicable. A figure-based budgetary system is defined as a system by which budgets are determined on the basis of volumes multiplied by prices, with the abovementioned parameters as volume indicators. Another important aim of this study, resulting from the principal objective, is to support both the management of academic hospitals in particular and that of hospitals in general: which role could external budget parameters (volume and price) play in determining the size of internal budgets at various organisational levels (divisions, departments)? This question is especially important against the background of the radical changes in the external budgeting of hospitals that have taken place since January 1, 2005. Gradually introduced, from that moment on, diagnosis-treatment-combinations (in Dutch, diagnose-behandelings-combinaties or DBCs) will gain more influence on the external budget and will eventually replace the aforementioned FB parameters. Because DBCs are related to budgeting processes and budgeting systems are important instruments for conducting management and exercising control, the question arises what their influence and effects will be on the internal budgeting systems applied in academic hospitals. Since at the outset of the study the DBCs have been related to the future defrayal of care, the research has, as far as the degree of coupling is concerned, become more and more focused on the operative budget parameters, while the DBCs are mainly restricted to the inventory of propositions and expectations.

Summary

In order to find answers to the abovementioned principal question a theoretical framework has been developed, whereby the contingency theory has been taken as point of departure. Connections are assumed among internal budget systems (distinguished on the basis of degree of coupling), the influence of objectives and other (contingency) factors on the design of those systems, the way internal budgets are used (= the degree to which the budget provider sticks to the realisation of the plan as agreed upon) and their effects. Further, the framework includes the influence of other forms of management control on the design and the use of internal budget systems, which is based on the assumption that different systems can complement or substitute each other. With respect to the abovementioned mistakes a prominent place is given in this study to the contingency factor 'technology' and its influence on the internal budget system within academic hospitals. The question has been posed to what extent the degree of task uncertainty of a specialty lends itself to be either included into or excluded from the budget by a higher management level using a figure-based budget system. The degree of task uncertainty is determined on the basis of the number of exceptions regarding tasks and to what extent they can be analysed. The expected connection among these and other concepts of the theoretical framework has resulted in the formulation of various assumptions that have been examined for their tenability.

The objective of the research is to explain a complex phenomenon within a specific organisational context with the help of existing theory, and to discover new variables and connections. The most suitable method to conduct this type of research is field research whereby information is gathered through conducting interviews with those involved in actual practice and document analysis. The field research has been conducted in two phases. In a first phase a 'complete' field research conducted at all the eight academic hospitals has been pursued to establish the role these organisations give to external budget parameters when determining internal budgets. The overview resulting from this research concentrates on the budgeting of divisions by the Board of Directors (BoD) from the point of view that the external budget is determined at hospital level and that the means are granted top-down to divisions. In the second phase of the research, a more profound analysis of the research themes has been made by conducting a case-study within one hospital. Since the research themes can also be identified at department level (for example, the influence of task uncertainty), the focus of this study is on the budgeting of departments by divisions. A hospital has been selected in which a large degree of coupling is applied in the budgeting of divisions by the BoD, in order to make coupling possible as a relevant budgeting method in the budgeting of departments by divisions. Within this hospital two divisions have been considered which budget their departments in very different ways: one division applies a large degree of coupling, along the lines of the Board of Directors, and the other does not apply any coupling at all. Within each center two departments have been selected which were expected to differ in terms of the nature of their production and the resulting differences in task uncertainty. This has led to the selection of the Ophthalmology department (expectation task certain) and the Neurology department (expectation task *uncertain*) of center A and the Orthopaedics (expectation

Summary

task certain) and Cardiology (expectation task uncertain) departments of division B. Within each center the relations indicated by the theoretical framework have been examined.

The research findings

a. Systems of internal budgeting

When determining the internal budgets for the divisions the BoDs of the eight hospitals have to make various choices regarding the application of external budget parameters (the degree of coupling). Further, the budgeting of departments by divisions also involves various choices with respect to the role which external budget parameters play in determining the size of budgets. All of the hospitals, including the two divisions studied within the hospital of the case-study, start from a system of historical input budgeting: the size of last year's budget forms the starting point from which a particular mutation is induced. It appears that when inducing budget mutations differences in coupling occur. In this context the academic hospitals and the divisions in the case-study make use of three systems:

- I.** Full input budgeting. No coupling is applied; there is a historical input budget. Budget mutations are based on mutations with respect to the activities and the production means required.
- II.** A combination of input budgeting (historical budget) and, as far as fixing budget mutations is concerned, output budgeting. Budget mutations are calculated on the basis of volume mutations in the regular production parameters and the top clinical treatments multiplied by internal prices.
- III.** This system is equal to II, with the exception that, rather than internal prices, (fixed percentages of) external tariffs (among which 100%) are applied as a price basis of budget mutations.

Applying DBCs in the external budget process will lead to a larger degree of coupling, and as far as the price basis is concerned, to a degree of coupling which is more refined. In determining the internal budgets the external budget parameters will play a more prominent figure-based role than the current parameters. This influence will not be limited to the budget mutations, but will concern the whole budget. In determining the price basis, in this case the height of the internal remuneration, the externally acquired remuneration (revenues) will serve as the basis of the internal price fixing. This results in the application of the following systems:

- IV.** Full output and process budgeting based on internal prices.
- V.** Full output and process budgeting based on (fixed percentages of) external tariffs (among which 100%).

Summary

b. The influence of task uncertainty on the internal budgeting system

Neither within the academic hospitals nor in the divisions of the case-study hospital does task uncertainty appear to have an influence on the internal budgeting system. The assumption that the degree of coupling will be small in case of a large degree of task uncertainty, while a high degree of coupling will occur in case of little task uncertainty is not valid. Divisions within academic hospitals can be considered as small hospitals, and at that level of abstraction it is difficult to indicate the degree of task uncertainty. This does not apply to the departments that are budgeted by the divisions in the case-study hospital. However, both the Boards of divisions A and B apply the same system when fixing the budgets of departments. As opposed to what was assumed earlier, in three of the departments examined the degree of task uncertainty is small. Further, with respect to the Neurology department no unambiguous view of the degree of task uncertainty has been obtained. This lack of distinction implies that task uncertainty cannot offer an explanation for differences in applied budgeting systems either. The fact that task uncertainty does not play a role in this choice is also reflected by the arguments that explain why coupling is either applied or not (see points c and d below).

A point of special interest in this study is to what extent budgeting systems are applied in situations suited for these systems. Task certain specialties lend themselves for figure-based budgeting systems. Although this statement may lead to the conclusion that in division B one encounters a type I mistake (= a figure-based budgeting system is not applied in a situation to which it is applicable), the situation is also characterized by a lack of information: costs are not registered per care product. In this way the application of a figure-based system, such as for example, output budgeting, is impeded. This is why one cannot simply speak of a type I mistake, in spite of the fact that there are potential possibilities to use systems such as output budgeting. The budgeting of departments in division A does involve the use of a figure-based system, namely coupling. Therefore, with respect to the task certain Ophthalmology department one cannot speak of a type I or II mistake. One could say though, that an unsuitable figure-based system is applied in a situation that requires a method based on figures. The Neurology department applies a figure-based system from which can be concluded, for the same reasons, that it is not the proper figure-based system. In addition, when considering the diffuse picture of the degree of task uncertainty, the question remains whether a figure-based system is in fact the most desirable choice for this department.

By providing a clearer insight into the nature, composition and costs of health care, DBCs can further increase the degree of task certainty of specialties. Under condition that DBCs offer an adequate representation of the care provided in an academic hospital and its costs, the potency of figure-based systems as tools for internal budgeting largely increases. In this respect, the degree of task uncertainty is even more reduced (or rather: the degree of task certainty is increased) by the care profiles on which the DBCs are based and the necessity to operate according to these profiles. This is because this necessity is increased by the larger financial risks resulting from the introduction of DBCs in the external budgeting process. One risk is formed by the number of types of DBCs which the budget holder has to deal with. This also determines the degree of task uncertainty and the

Summary

attainability of applying a particular budgeting system, which in the future may explain the differences in budgeting systems within hospital organisations.

c. The influence of objectives on the internal budgeting system

In the research a goal-means relation is assumed between objectives and budgeting systems. At the chosen level of abstraction the objectives of internal budgeting, as they are distinguished in the research, do not appear to be sufficiently discriminative to explain the differences in the degree of coupling applied in the academic hospitals. This is because the objectives are highly uniform. The assumption that a larger degree of coupling will be applied if the hospital's objectives are highly consistent with those of the government is not valid: all academic hospitals have objectives which are consistent with those of the government; however, they do differ in the degree to which they apply coupling. It is generally recognised that the FB-defrayal system is not the proper method. This is because the lack of differentiation in the parameters with respect to the differences in care (weight), incomplete tariff fixing, and deviations in the height of tariffs (remunerations) with respect to health care costs. A further formulation of objectives (for example, views regarding management and control and proper remunerations) and the assessment of the suitability of the budgeting system to attain those objectives under certain conditions, appear to offer a foundation to explain the differences in system choice. Supporting the organisational development in the light of integral management and creating a pragmatic, transparent and simple budgeting system appear to be important arguments for the application of coupling or the continuation of a coupling system (system III). The avoidance of discussions about the internal distribution of means (rather than the avoidance of discussions about the policies to be conducted) also seems to play a role. It appears that, as objectives, the facilitation of care content control and the avoidance of undesirable financial incentives play an important role in the decision not to apply coupling (system I). As we will learn when discussing medical ethics as an influencing (contingency) factor, in some situations (as in division A) it is not the objectives that determine the internal budgeting system, but the internal budgeting system itself is regarded as a fact of life, being a factor that influences the possibilities to realise the objectives of internal budgeting.

Solvency considerations, the opportunities to conduct a central policy as well as the degree to which costs are imputed to divisions which have been budgeted, influence the height of the coupling percentage applied (= the percentage of the external remuneration granted internally). In determining this percentage the degree to which these remunerations fit in with the (average) costs of the care production plays a role in some hospitals, while in others it is not relevant. Making remunerations and costs fit is also at the basis of the decision to apply a budgeting system in which budget mutations are based on volume mutations in the product parameters multiplied by an internally-calculated fixed tariff (system II). The application of DBCs in the external budgeting process will lead to a larger degree of coupling, because DBCs are considered as a more appropriate means to realise the objectives of internal budgeting than FB-parameters are. Since the application of DBCs may presumably result in a coupling which includes the whole

Summary

budget (rather than merely the budget mutations), the price basis will, due to this full coupling, also be influenced by adjustments for volume variances on fixed costs deemed desirable.

d. The influence of contingency factors (different when compared to task uncertainty) on the internal budgeting system

In academic hospital changes in the contingency factor external environment, in this case increased financial risks (resulting from changes in the defrayal system, for instance the introduction of DBCs), in combination with the necessity to control them, lead to a larger degree of coupling, a stronger focus on the realisation of the budget as arranged (use), and the emphasis to hold on to objectives with respect to financial management and control. In case of financial constrains it is harder to maintain a flexible allocation of budget mutations: the pressure to apply coupling then increases. However, this only holds good for a certain maximum percentage. As external revenues (remunerations) are passed on more thoroughly to divisions and departments, the necessity will increase to apply a percentage lower than 100%, in order to create scope for policymaking and/or enforce the hospital's position with regard to solvency.

The contingency factor 'organisational size' also appears to play an influential role in the budgeting system, be it that this role differs from what is assumed by the contingency theory. Size in the sense of the number of budget holders hinders the reaching of consensus about changes in the budgeting system, which forces the budget provider to preserve the budgeting system as it exists. The size of the budget holder in the sense of the number of different care products produced by him stimulates the application of coupling based on the argument that differences between costs and remunerations of individual care products counterbalance each other.

Besides financial risks and size the following factors appear to play a role in the choice of an internal budgeting system or maintaining it:

- The solvency of the hospital or its divisions. If the hospital (or its division) has an adequate reserve or a reserve that can be complemented easily, there is less necessity to transfer financial risks to budget holders by means of coupling.
- Insight into the revenues generated on the part of the budget holder, for this could lead to claiming behaviour which translates itself into the need for coupling.
- (The lack of) information about care products and their cost prices in relation to the revenues. If external budget parameters and the connected tariffs are an adequate reflection of the production as well as the costs, coupling will, from the perspective of costs compensation, lead to feasible budgets. If there is a lack of adequate information about care products and cost prices, budgets cannot easily be brought up for discussion. This could then lead to no application of coupling (a historically developed situation in which no coupling was applied will continue) as well as the decision to apply coupling: for want of anything better, budgets are granted on the basis of the earner principle.

Summary

- The scale of imbalances between the costs of health care and the remunerations in the external budget. If they are small or are counterbalanced within the budget holder's total budget (or if the budget provider assumes this), coupling will lead to a fairly cost-effective budget. If there are large imbalances (or the suspicion is there), no coupling will be pursued in order to prevent that these financial stimuli lead to unwanted care production.
- Medical ethics in connection with the meaning of the budget as an acquired right. The research shows that within a medical professional organisation budgets are perceived as acquired rights, which are strongly associated with ethical issues. The economic power of disposition ascribed to the budget represents the specific amount of care that can be offered to the patients of a particular medical specialty. Undermining budgets implies undermining this care potency, which is in conflict with the oath administered by medical practitioners. This sense of right is enforced by the figure-based character of coupling: it can be determined objectively what the department (and thus the patient) is entitled to. As a consequence, a system of coupling is maintained, for changes in the budgeting system can have implications for the size of the budgets as well as the rights to means acquired over the years and, therefore, for patient care.
- The mutual dependence of budget holders. Along the lines of the aforementioned, this dependency appears to influence the degree to which departments allow each other to be allocated means, which has consequences for the continuation of the budgeting systems applied by the divisions in the case-study hospital. In division B the departments are more strongly connected in care chains than is the case in division A. This does not mean that mutual solidarity and allowing one another to receive means is inspired by altruism. Personal interest, or rather the interest of one's own patients, plays a significant role, for these patients also make use of services of other departments within the division. With respect to care content, the departments in division A do not share a great deal, and they have little mutual dependence, so the interests of another department are not directly linked to their own (patients) interests, which have to be especially guarded within their own department.
- The management philosophy and the personal views (ethics) of the budget provider. It appears that coupling enables the budget provider of division A of the case-study to realise a management philosophy that is characterised by an emphasis on integral management responsibility at department level, whereby financial considerations and those regarding care content are integrated as much as possible. In this respect, the department head is responsible for both costs and revenues. In division B, as regards costs, department heads are directly called to account via department budgets; however, revenues are accounted for via the budgets concerning production volumes. Splitting revenues and costs is a choice made in full awareness by the budget provider and is based on his ethics. He wants to avoid that at department level professionals are led by (un)favourable financial margins rather than by considerations based on policy content. Therefore, the budget provider takes especially care of guarding the division's revenues as a whole and monitors department heads with respect to their production, so that they generate a sufficient amount of revenues to achieve an exploitation that is balanced at division level.

Summary

- The nature of the medical specialties and the medical specialists employed in them. Division B in the case-study is characterised by ‘cutting’ professions aimed at surgical treatment. Here, action orientedness and quick decision-making is often demanded of the professionals engaged in this work. This attitude facilitates decision-making and altering budgeting systems, in spite of the fact that this can go together with intense discussions. Division A consists of a mixture of cutting and reflective professions. In the process of care providing the latter are often subject to a complex spectrum of factors on the basis of which decisions have to be taken. This reflective nature could also leave its mark on other decision-making processes.
- The hospital’s academic care profile. The more a hospital (division) derives its reason to exist from a profile based on top referential (top specialised) care and the research attached to it, the more the stimulation of regular and top clinical care by coupling and favourable external financial incentives becomes a threat. Hospitals aim at avoiding internally stimuli of this kind. Moreover, if a profile of this kind is the case, a relatively smaller part of the budget will be determined by the production parameters, because the hospital strongly relies on other (research) means. Therefore, its financial risk profile demands to a lesser extent the transference of risks to divisions or departments.

Through the application of DBCs the influence of certain factors will increase. Both the field research and the case-study show that DBCs in combination with the functioning of the market will cause the hospital’s financial risks in the external environment to increase. This will lead to an expected increase in the degree of coupling. Further, DBCs, which form part of the external environment, are qualitatively better instruments to typify and defray the costs of health care than FB-parameters are. This provision of better information about the costs of the care generated by DBCs within the hospital, makes it also possible to have these parameters play a significant role in the internal budgeting process, and in this case to enlarge the degree of coupling. In the case-study hospital this information forms a counterbalance to historically developed rights and power positions of medical specialties, as is illustrated by the fact that budget reallocations are not excluded. In addition, imbalances between remunerations and cost prices will presumably be decreased, thereby reducing the necessity to correct these imbalances by the decision not to apply coupling. Further, DBCs will result in a more profound insight of divisions and departments into the revenues generated, which enforces the claiming behaviour. With respect to the other factors no clear data on the consequences of DBCs have been gathered.

e. The use of the internal budgeting system

The use of budgets, in this case the degree to which is held on to the realisation of the budgets conformable to the standards on which the budget is based, is not influenced by the degree of task uncertainty or by differences in budgeting systems. Factors that do influence the use of budgets are the degree to which budgets are perceived as feasible by the budget provider, the financial necessity, and the intention not to disturb the process of

Summary

organisational development. The degree to which budget holders are capable of influencing costs and revenues (budgets) determines the extent to which they feel responsible for the budgets. The introduction of DBCs will presumably lead to a stronger focus on the realisation of budgets in the expectation that budgets will be more feasible (which leads to a more realistic calculation), that the degree of task uncertainty will decrease and that the financial necessity will increase.

f. The effects of the internal budgeting system

The study focusses on the specific effects of the use of the internal budgeting system as mentioned below:

- The realisation of budgeting objectives. The combination of a small degree of task uncertainty, a large degree of coupling, a strong focus on the realisation of the budget as well as budgetary pressure appear to lead to efficiency improvement and reflection on the necessity of medical treatments, which has a positive influence on the realisation of objectives set by the budgetary system with respect to financial control. If no coupling is applied and there is a small degree of task uncertainty, budget holders are not directly confronted with the consequences of changes in production on the revenues generated. In that case, efficiency, financial control and financial management are not stimulated. In an academic setting this will lead to a strong focus on the core task 'research', which, due to its relatively high costs and the loss of revenues on account of the core task 'patient care', coincides with a deterioration of the financial situation. Although it may be expected that DBCs have a favourable influence on the realisation of the objectives in the internal budgeting process by means of coupling, due to risks related to the possible defective typification of the DBC-based care provided in an academic hospital and the rising overhead costs of DBC-application, it is difficult to determine in advance the on-balance effects on the effectiveness and efficiency of the hospital organisation.
- The realisation of the hospital's core tasks. Coupling has a great deal of influence on all core tasks in both a direct and indirect way. This influence cannot simply be indicated as either positive or negative. Through the pressure of economy measures, coupling could, for the benefit of finances, lead to a decrease in the expenditure for educational tasks rather than losses in the revenues of a particular care production. A lesser amount of production can be favourable if the lesser-costs exceed the lesser-revenues. As a result a shifting will take place from patient care to research in particular. Production which is financially interesting is stimulated by coupling, without it being necessary that it has to contribute to the academic profile. However, a financially interesting production does contribute to this in an indirect way by generating the means for this purpose. The already mentioned efficiency profits can be invested in the realisation of extra core tasks. Through the financial stimulus to reconsider the necessity of medical treatments, coupling can lead to breaking existing habits, which is good with respect to the quality of the provision of care. If coupling is not applied, this could lead to a strong focus on research in particular; however, in certain cases it could also lead to less-production by other core tasks, which is

Summary

deemed undesirable. In the long term this will threaten the continuity of this particular division, especially because its financial foundation will be undermined as a result. Because the focus on efficiency improvement is small, the possibilities to realise extra core tasks (or cover shortages) are not fully addressed. The application of DBCs in the internal budgeting process can influence the realisation of core tasks both positively and negatively. This will particularly be determined by the extent to which DBCs give an adequate reflection of the care provided by the academic hospital and/or whether the hospital receives a cost-effective remuneration for this care provision. A stronger financial control could become necessary to maintain the various core tasks.

- The influence of management on hospital policies. Due to the decreasing possibilities to realise division and department policies and the fragmentation of means for the benefit of policy renewal, coupling has a negative influence on the degree to which management can determine hospital policies, especially when external remunerations are fully transferred internally. Further, coupling can lead to both revenue driven care control by budget holders which is at odds with the way in which care content is managed, and to alienation of organisational levels: divisions feel they have a stronger relation with the insurance companies that remunerate the provided care than with the BoD. On the one hand DBCs can strengthen the position of management as a result of the increased insight into care processes and their costs, on the other hand DBCs can weaken its position by the increase in claiming behaviour of organisational units. By the introduction of DBCs the division's or department's financial position may become weaker and as a result they may claim the revenues they have generated.
- The realisation of government objectives. If there is a large degree of coupling department heads will perceive that they have a more direct relation with the insurance companies that remunerate the provided care, who they intend to follow on a stricter basis with respect to financial issues, whereby the influence of management will diminish. The control exerted by (unbalanced) external remunerations over care production and other core tasks does not necessarily have to correspond with the direction of policy content pursued by the government and care insurer. However, fact is that communicating these stimuli by means of coupling facilitates the realisation of government objectives as regards financial control. The influence of DBCs on the realisation of government objectives cannot be determined univocally in view of the aforementioned comments regarding the typification of the care provided in an academic hospital, the risen overhead costs, the consequences with respect to effectiveness and efficiency, and the unclear influence on the core tasks 'research' and 'education'.
- The degree of revenue driven care control and its effects. Financial incentives appear to have a far-reaching influence on decisions regarding the care processes in academic hospitals. If coupling is applied, medical professionals are more obviously confronted with these incentives, and therefore they will have a stronger influence on the decision-making processes. This influence is not at the expense of the treatment of the individual patient. However, it does lead to reflection on the patient categories to be served and the treatment methods. With the aid of DBCs a costs-benefits

Summary

analysis can be made which is much more accurate thanks to the better information about the costs of care; however, on condition that the DBCs do in fact offer an adequate typification of the care provided by the academic hospital. If the latter is not the case, a false accuracy would emerge which could have undesirable effects on the care management. The question then arises whether hospitals would be better off with a system of FB-parameters, of which it is common knowledge that it does not typify care in an adequate way, and whose shortages can be consciously taken into account.

- Other effects. Coupling ensures the maintaining of budgetary rights as well the enforcement of these rights. As a result the coupling system enforces itself, which makes it difficult to change the system. Further, the strong financial incentives of coupling appear to influence the management of care and lead to moral dilemmas on the part of both managers and department heads. However, to ensure the hospital's long-term continuity, it is felt that the government and the insurance companies leave the hospital no other choice. It also appears that medical professionals will be more engaged in the functioning of the budgetary system as they experience more strongly a direct relation between their decisions and the financial consequences, which is especially the case with coupling. The application of DBCs in internal budgeting will strengthen this process and improve the budget holders' budgetary discipline. On the one hand, it leads to a larger awareness of responsibility regarding the hospital's means, while on the other hand this greater interference is at the expense of medical-professional activities and may lead to tensions with management and its staff.

g. The influence of other forms of management control on the internal budgeting system

Both in situations where coupling is applied and in situations where coupling is not applied, accounting controls, such as internal budgeting, play a significant role in the realisation of cost control by the budget holder, while personnel controls are in particular executed to exercise control with regard to content. If no coupling is applied, personnel controls will also play an important role in the contribution to financial control, namely in terms of the realisation of revenues. Department heads exert various forms of management control in order to realise the department budget in a situation in which the quality of the information provision is defective and the budget is tight.

Consequences for the theoretical framework and future research

The findings of this research have led to sharpening the theoretical framework. This has been necessary as regards the (contingency) factors, which have an influence on the objectives of internal budgeting and on the budgeting system. Various factors appear to have an influence on the choice of the budgeting system, which can be distinguished on the basis of the hospital's financial position, the availability of information, the quality of the external budget parameters in terms of the provision of feasible budgets (remunerations), nature and scale of the hospital activities and people-related characteristics. Further, the mutual coherence of these factors is complex. For example,

Summary

conditional relations can be distinguished, while specific factors can also take dominant forms (such as the financial position), as a result of which the influence of other factors diminishes. Therefore, this study underlines the significance of reflection on the contingency theory and the factors which play a role according to this theory. In this study existing assumptions with respect to the task uncertainty concept are brought up for discussion. With regard to the practice of new medical-specialist care, it appears that technologic developments and the correlated research and education lead to less rather than more task uncertainty. Moreover, task uncertainty is not only dependent on objective factors, but also on subjective ones. For example, through a specific way of conducting care provision, technologists (medical specialists) themselves can leave their marks on the degree of task uncertainty. In addition, and relating to the aforementioned, the role that task uncertainty can play also depends on the provision of information. Therefore, the potential and actual degree of task uncertainty can deviate from each other. It is assumed that task uncertainty can influence the budgetary system, however; this causality also appears to exist the other way round: the budgetary system appears to be able to influence the degree of task uncertainty if it forces one to act, on the basis of financial reasons, in a more task certain way. In addition to these findings future research is required into the factors that influence task uncertainty and the changing role of task uncertainty resulting from developments in information technology. In order to explain the use of budgets the research findings point to the significance of subjective factors (such as views on the feasibility of budgets) and their connection with the dynamic context (organisational change) in addition to factors already recognised, such as financial necessity and task uncertainty. Certain effects assumed in the theoretical framework appear to be confirmed, while others are not. In this stage, we will have to make do with the recommendation that broader and more profound studies on the effects will be necessary in the future. The application of various forms of control does not appear to be influenced by differences in task uncertainty as has been assumed (these differences have not been observed), but by the applied internal budgeting system and the quality of the information provision. Therefore, the theoretical framework requires adjustment with respect to this issue. In addition to the above mentioned thematic points of interest, future research could be aimed at replicating this study within other academic hospitals in order to enhance the validity of the findings in this study. It would also be interesting to find out whether the expectations with regard to the increase in coupling as the result of the introduction of DBCs proves to be true and to see which new insights are provided. Related research areas in which the coupling phenomenon could be investigated are general hospitals, other care institutions and other externally financed (semi) government institutions, such as universities and other educational institutes. A comparative study among various types of institutions could throw light on the influential factors by exploring their similarities and differences.

¹ As a result of the merger with the adjoining faculties of Medical Sciences or Medicine also called university medical centres (UMC).