DESIGNING INSTITUTIONS AND INCENTIVES IN HOSPITALS: AN ORGANIZATION ECONOMICS METHODOLOGY*

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Working Paper 0339

*This paper constituted part of my Ph.D. dissertation at MIT. I am grateful to my committee members from MIT and Harvard, Bengt Holmström, Karen Polenske and David Cutler for their excellent guidance. In preparing this work, I benefited from discussions with Susan Athey, William Cleverley, Lucy Goodhart, Pere Ibern, Jamie Robinson, Nancy Kane, Alex Preker, Nancy Rose, Meredith Rosenthal, Anwar Shah, and Steve Webb. I also wish to thank participants in the MIT Industrial Organizations Seminar for their helpful comments. This work would not have been possible without the support of Ministers of Health Sleiman Franjieh, Marwan Hamadé, and Karam Karam in Lebanon, the current Director of Hôpital Dahr El-Bachek, Dr. Roger Hamouche, the past Directors Drs. Abboud and Chalouhi, the Director General of the Ministry of Health Dr. Walid Ammar, as well as the former hospital board members Maitre Béchara Hatem, Dr. Ramez Awad, Dr. Michel Matta, Mr. Tony Manasseh, Mr. Nicolas Sassin, Eng. Georges Sfeir, and Mr. Joe Saleh. For this research, I very much appreciated being awarded the Ford Foundation/LCPS Middle East Research Competition grant. Email: feid@alum.mit.edu. ** Florence Eid, Ph.D, is an Assistant Professor in the Olayan School of Business at the American University of Beirut, where she teaches finance and economics. She holds a doctorate in Organization Economics from the Massachusetts Institute of Technology.

Abstract

Recent seminal developments in organization economics, namely the decision rights approach, offer an opportunity to shed new light on an old question, the design of effective institutions. Drawing on conclusions about how and why firm organizational boundaries change, the decision rights approach is used in this paper as an analytical lens to develop a new method for assessing institutional and incentive design in restructured hospitals. The paper explains the decision rights approach and shows how the Decision Rights Framework developed from it, is a way of mapping of incentive structures to allow a comparative assessment of institutional design, an understudied area, as most work on hospitals has focused on assessing equity vs. efficiency tradeoffs. The new method is illustrated drawing on one example from a case study of an innovative self-corporatized hospital in Lebanon that was at the vanguard of hospital restructuring legislation adopted for system-wide reforms. A country with a strong private sector tradition, Lebanon was fertile territory for analyzing how high-powered incentive schemes emerge from a public sector setting in a manner similar to the evolution of a firm in reaction to market forces. Among the findings is that key to "good" design is the identification of requisite incentives and the matching up of incentives with goals through decision rights allocations. The appropriate organizational form is then a logical result. Keywords: *organization economics, hospital, health sector reform, hospital finance, incentives, institutional design, "corporatization", Lebanon, decision rights, and public sector efficiency.*

مُلخص

إن التطورات الأساسية الحديثة في اقتصاديات المنظمات، تحديدًا نج حقوق اتخاذ القرارات توفر فرصة لإلقاء الضوء من جديد على سؤال قديم، وهو تخطيط مؤسسات فعالة. من خلال استنباط الاستنتاجات حول كيف ولماذا تتغير الحدود التنظيمية للشركة، يتم استخدام نج حقوق اتخاذ القرارات في هذا البحث كعدسة تحليلية لتطوير أسلوب جديد لتقييم التخطيط المؤسسي وتخطيط الحوافز في المستشفيات التي تم إعادة هيكلتها. يشرح البحث نج حقوق اتخاذ القرارات، مع توضيح كيف تم تطوير إطار حقوق اتخاذ القرارات منه، وهي طريقة لتخطيط ُبنى الحوافز للسماح بتقييم مقارن للتخطيط المؤسسي، منطقة بديلة، حيث ركز أغلب العمل في المستشفيات على تقييم الإنصاف مقابل استبدالات الفعالية. تم توضيح الأسلوب الجديد من خلال عرض مثال لدراسة حالة لمستشفى تم تأسيسها ذاتيًا في لبنان، والتي كانت في طليعة من قاموا بتشريع إعادة هيكلة المستشفيات، التي تم تبنيها ضمن عمليات إصلاح النظام واسعة النطاق. ُتعد لبنان، وهي بلد ذات باع قوي في القطاع الخاص، منطقة خصبة لتحليل كيف أن مخططات الحوافز ذات النفوذ العالية تنشأ من محيط القطاع العام، بشكل يماثل نشوء مؤسسة استجابة لقوى السوق. من ضمن النتائج التي تم كشفها بواسطة هذا النهج هو أن العنصر الأساسي للتخطيط "الجيد" هو تحديد الحوافز المطلوبة، وملائمة الحوافز مع الأهداف من خلال تخصيصات حقوق اتخاذ القرارات. بالتالي يكون الناتج المنطقي لذلك هو نموذج تنظيمي ملائم.

1. Introduction:

This paper draws on recent developments in organization economics, namely the decision rights approach, to develop a new method for assessing institutional and incentive design in restructured hospitals. It explains the approach and the analytical framework developed from it, illustrated with as example drawn from a case study of an innovative, self-corporatized hospital in Lebanon that was at the vanguard of hospital restructuring legislation adopted for system-wide reforms. A country with a strong private sector tradition, Lebanon was fertile territory for a study of how high-powered incentive schemes emerge from a public sector setting. The full study is available as Eid (2001a). This paper is limited to a discussion of the analytical method developed and illustrations of how it can be applied to analyze institutional design.

2. The Policy Problem

"Corporatization" is a hybrid organizational form that grants hospitals varying degrees of financial and managerial autonomy, through a corporate board, but retains public sector ownership of the hospitals. Lying mid-way along a continuum of hospital organizational boundaries, ranging from budgetary units to privatization, corporatization has become an increasingly common reform in response to changes in medical technology, know-how, and cost. Today, numerous industrialized and developing countries are experimenting separating funding from provision functions, with the aim of improving efficiency. These changes have resulted in two prominent trends worldwide, horizontal integration and vertical disintegration including corporatization (Cutler 2000; Robinson 1996, 1999).[1]

While providing private sector-like incentives is desirable, the hybrid nature of corporatization makes the design of appropriate institutions difficult. By institutional design, I mean the determination of the formal and informal "rules" that define the behavior of agents in an organization. "Rules" include the assignment of rights for decision-making (or decision rights) over various aspects of management and policy – i.e. determination of spheres of authority in general.[2] As an example of the challenges of design, the debate on hospital conversions has mostly centered on the tradeoff between equity and efficiency when comparing public with private provision of services. However, conversion outcomes provide evidence that more important than this dichotomy is the identification of requisite incentives, and the matching up of incentives with goals, given non-contractable quality considerations (Cutler & Horwitz 1998). The appropriate institutional design and organizational form are then a logical result.

Two conventional facts explain the insufficient attention to decision rights at the design stage. The first is that most hospital reforms, especially public hospital reforms, are undertaken top-down as part of macro-sector reform programs that attempt to apply a common institutional design across the board. Donor agency-financed reform programs, though not the only source, are especially problematic in this way. National legislation that applies one model across the board is equally problematic because it rarely allows for important local idiosyncrasies such as demand patterns. The second fact is more relevant to private sector hospitals, where form sometimes precedes function when restructuring is undertaken by hospitals that adopt models from other hospitals.

[1] A range of hospital governance models has accompanied these changes over the past 30 years. See Eid (2001a), Eid (2001b) and Shortell (1989).

[2] I discuss the technical details of decision rights further along in the paper.

In analyzing the relative appropriateness of organizational forms, the problem is largely one of tools: institutional design theories and methods are few and underdeveloped.[3] As an example, consider the problem of decision rights allocations, which is conceptually at the core of institutional design, but remains relatively unexplored in applied research. When decision rights are decentralized, an important trade-off is made between centralization and coordination. Centralization makes coordination easier, but dampens incentives for performance; while decentralization creates more powerful incentives, but makes coordination more difficult. Reaping the benefits of decentralization depends on whether incentives of the principal and the agent are properly aligned; otherwise, the agent will maximize his/her objective function and not necessarily that of the principal. "Optimal" decision rights allocations in the health sector, for example, are those that align incentives both within the hospital, and between the hospital and the MOH. Appropriate risk sharing and adequacy of the power of incentives, given intended outcomes, are key to resolving the coordination problem when decision rights are decentralized.[4]

These conceptual conclusions have been corroborated by empirical challenges identified in work done on corporatization in recent years (see, e.g. Govindaraj & Chawla 1996). Empirically, they translate into questions such as: "What rules should be set to determine the degree of autonomy hospitals have vs. the Ministry of Health?" In determining the rules of hospital governance, "How much independence from the board of directors should the hospital manager have?" Despite the centrality of these institutional design questions to performance, research and policy work to date have focused mostly on the implementation and evaluation of corporatized hospital performance. Virtually absent from the literature are discussions of the institutional design of implemented structures– i.e., the infrastructure that underlies capacity and, in turn, determines performance. What seems to be omitted is the fact that performance has two dimensions: (a) institutional design or the provision of requisite "rules and tools"; and (b) implementation of "rules and tools."

3. The Empirical Motivation

The empirical portion of this paper draws on a natural experiment that offered an opportunity to analyze some elements of successful bottom-up institutional design. The case - an innovative and successful hospital in Lebanon, Hôpital Dahr El-Bachek (HDB) - is used to provide an in-depth analysis of a hospital that acquired its own autonomy quasi-legally beginning in 1989, and became touted as the "best" hospital in the public sector. HDB created an autonomous structure for itself through a private sector association (henceforth ALSM), whose executive committee members served as a *quasi* board for the hospital.[5] HDB's experiment with autonomy was watched and emulated by other hospitals over a period of seven years. In 1996, a law was passed to corporatize all public hospitals in the

[3] This paper adopts North's (1990) distinction between "institutions" and "organizations." Institutions are the formal and informal rules that shape interaction. They range from constitutions, to laws, to common practice, and to corporate culture (Kreps 1993). Organizations are groups of individuals, bound by some common purpose, to achieve a given set of objectives. They include political, economic, social, and educational bodies. In this paper, a hospital is an organization. The law and decrees governing the operation of the hospital are a set of institutions.

[4] A related paper (Eid 1999b) draws on lessons from the HDB case and agency theory to analyze system-wide problems in the legal structure of corporatization in the case of Lebanon.

[5] The Association Libanaise de Soutien Médico-Hospitalier (ASLM) was formed by a group of private sector professionals capable of volunteering time for non-profit work, and interested in helping out the public hospital in their area. According to legislation at the time, public hospitals were not allowed to charge for their services. The hospital, faced with demand, needed income to improve the quality and range of its services. The Ministry of Health was in no position to increase the size of its transfers to any public hospital. Patients were charged "contributions," collected in the name of the ALSM and reinvested in the hospital to improve its performance. The details of this interesting story are in Eid 2001a.

country by granting them boards of directors and financial and managerial autonomy. However, partly because of its quasi-legal status and partly for political reasons, very few design lessons from HDB informed the drafting of the 1996 legislation; and important opportunities to draw lessons from the successes and shortcomings of the HDB experiment were missed. In a policy note submitted to the Minister of Heath in Lebanon in 1998, I analyzed the Law on Public Hospital Autonomy (#544) and its initial set of Implementation Decrees, and recommended amendments. These were reflected in the drafting of the remaining decrees. Implementation difficulties, experienced by hospitals corporatized since 1996 and which I made to the Minister of Health, reveal numerous design problems in the new legal structure governing autonomous hospitals that corporate the policy recommendations. The experience poses the question of how a promising system could go wrong; the answer to which is the subject of other papers (Eid 2001a & 2001b). As suggested above, a large part of the answer has to do with the lack of a method at the design stage. Indeed, the literature on hospital restructuring worldwide is replete with examples of adverse results produced by inadequate institutional design (Harding & Preker 2003). I look at HDB's "demand-side" story to glean insights as to what a hospital would do if it were free to alter its own decision rights allocations in response to market forces, similar to what firms do. To do this, I explore a new analytical lens.

4. The Analytical Approach

The decision rights approach derives from a large body of literature on agency theory and transaction costs, which began to explore alternatives to the neoclassical, "technological" view of the firm as a production function (see, e.g., Chandler 1990). Among the important issues neoclassical economics is silent on, are incentive problems within the firm, the hierarchical decision-making, and authority structures that govern organizations as well as their boundaries. Over the past 20 years, agency theory has made important contributions to explaining incentive problems within organizations (Hart & Holmström 1987; Holmström 1994; Laffont & Tirole 1993). The transaction costs literature, starting with Coase's famous 1937 paper, has been developed by Williamson and others and has contributed the important distinction between a theoretical contract and a real, incomplete contract. Building on the idea of contractual incompleteness, the transaction costs approach resulted in explorations of the efficiency implications of renegotiation, asset specificities, and the hold-up problem (see e.g. Dewatripont 1989; Klein et al. 1978; Fudenberg & Tirole 1991; Meyerson & Satterthwaite 1983 and Joskow 1985).

The decision rights approach contributes an explanation of organizational change; namely, what happens when firms merge or de-integrate? Because of its focus on the micro-dimensions of organizational change, this approach has the potential of shedding new light on old questions about the public sector, such as why and when decentralization is desirable; and exactly what happens to incentives and performance when a public agency is decentralized? Crémer, Estache and Seabright (1995), Tommassi & Saiegh (1999), and Schwager (1999) are among the first explorers of this vein of the decision rights literature to understanding public sector organization. Eid's (1996) was written with the same objective.

The decision rights approach assumes that all contractual arrangements are by definition incomplete because it is impossible to account, *ex ante*, for every possible contingency. Given contractual incompleteness, "residual control right" allocations are critical.[6] A basic

[6] 'Residual control rights' over an asset are defined by Hart (1995) as "the right to decide all usages of the asset in any way not inconsistent with a prior contract, custom, or law possession of residual control rights is taken virtually to be the definition of ownership in contrast to the more standard definition of ownership, whereby an owner possesses the residual income from an asset rather than its residual control rights" (pp.30). Residual

premise of the decision rights approach is that organizations work well when they allocate the authority to make decisions to the agents who are best informed to make them. Incentives also have to be correctly aligned between principals and agents; otherwise, those with the information can make decisions that are in their interest, but not necessarily in the interest of the organizations. Key to aligning incentives is the pairing of control rights with claimant rights -- the entitlement to receive any net income that a given asset (or firm) produces. Typically, the asset owner is entitled to the income that remains from revenues after all expenses, debts, and other contractual obligations have been paid off. This net income is the "residual return" (Milgrom & Roberts 1992). If the residual claimant also has residual control, then he/she will be led to make efficient decisions just for maximizing his/her own returns. When decision rights are paired in this way, decision rights allocations are said to be "optimal" for maintaining and increasing the value of the asset of the organization in question.[7] Changes in organizational boundaries, say from centralization to decentralization, are accompanied by changes in formal and informal rules that allocate control rights. These allocations, in turn, distribute power within organizations, and affect the agents' incentives to perform and innovate.

Efficient allocation of decision rights, therefore efficient institutional designs, also calls for the creation of decision right complementarities (Hart 1996). To illustrate the notion of complementarities, take two types of assets, a-1 and a-2 (located in firms 1 and 2 respectively). These assets are strictly complementary either if access to a-1 alone has no effect on the manager of firm 1's marginal return from investment (i.e., if he needs a-2 as well), or if access to a-2 alone has no effect on the manager of firm 2's marginal return from investment (i.e., he needs a-1). Assets a-1 and a-2 are independent if access to a-2 will not increase firm 1 manager's marginal return from investment if he already has access to a-1; and if access to a-1 will not increase firm 2 manager's marginal return if he already has access to a-2. The notion of complementarities is important both as a mathematical result and as a conceptual construct. This paper contributes an illustration of the latter.

I use the notion of complementarities to point to "constellations of decision rights" that lead to better performance if they are allocated to the same agent, than if they are allocated to different agents. For example, decision rights that render a hospital manager responsible for productivity are better complemented with decision rights that allow the manager to appropriately hire, reward, and fire people. While such a design might sound logical or trivial, the surprise is that more often than not in public hospital organization the institutional structure fails to deliver such an outcome; and in private sector settings, it delivers it insufficiently. These are examples of similar non-complementarities.

These findings from contract theory and the decision rights approach are corroborated by a class of models in organization and information economics that have explored the implications of a range of agency problems, power, authority in firms, and organizational boundaries. Four main conclusions central to this body of literature are relevant to the analysis of hospital corporatization. These are:

1. Decision rights complementarities are a core element of efficient institutional design (Hart 1996).
2. Residual claimant and control rights, especially in the presence of non-contract able products (such as quality), and pairing generate optimal allocations (Milgrom & Roberts 1992, Hart 1996).

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control rights are also referred to as 'decision rights' by Holmström (1995), Milgrom and Roberts (1992), and Kreps (1992). The latter shorter term is used more frequently in this paper.

[7] For a discussion of the relevance of this approach to health economics, see Harding & Preker (2003).

3. The willingness to take on risk (such as innovation by managers) is made possible through high returns, and hence high-powered incentive schemes. Low-powered incentive schemes are not likely to result in high performance. Autonomy (or firm de-integration) entails risk and high powered incentives, sometimes in the form of claimant status (Holmström 1979; Holmström & Milgrom 1990).
4. Risk can temper decisions and act as a budget constraint (Holmström 1979).

On the other hand, the conventional wisdom on the public sector, tells us that:

- Decision rights non-complementarities are highly prevalent, largely due to centralization.
- Agents generally have no claimant status; and where they exist, control rights and claimant rights are often unpaired.
- Incentive schemes tend to be low powered and result in equally low levels of performance and little willingness to innovate.
- As a result of the above points, low/minimal risk is assumed by public sector agents, resulting in soft budget constraints.

5. The Decision Rights Framework (DRF)

In this section, I present the Decision Rights Framework (DRF) and discuss how I developed it in consultation with hospital managers, health consultants, and health economics researchers. The DRF is designed to map and track the allocation of decision rights in the four main areas of hospital finance and management: i) Finance; ii) Human Resource Management; iii) Procurement; and iv) Service Delivery. Table 1takes the area of Finance as an example.

I started out by identifying the principal decision responsibilities in the area of hospital finance and listed them as categories where decision rights are assigned. These occupy the left-hand side column of the DRM. On the horizontal axis, the top row lists the potential holders of each of the decision rights included in the framework. The parameters on these axes will naturally vary depending on the context. For example, in the case of HDB, these were the ALSM (*qua* board), the hospital director, the MOH department in charge of public hospitals, and "other" (for instances when decision rights were held by a fourth party such as the Order of Nuns in charge of nursing services at the hospital or the Medical Committee within the hospital).

In the case of HDB, forty-two structured interviews were carried out using the DRM.[8] Each lasted three hours on average, and began with an explanation of the approach and with definitions of "decision rights" and "decision rights allocations" to ensure that interviewees had a uniform understanding of both the method and the questions. Two criteria were used to determine who held a decision right:

a. The director holds the decision right over a given area: in this case, he could make changes, either without informing the ALSM at all, or by informing them only after changes had been made.
b. ALSM holds the decision right: in this case, they would make decisions during ALSM meetings; and the director could not proceed in implementing anything related to the decision without having received the result of the discussion by the ALSM.

[8] I conducted a total of 25 interviews with HDB middle managers, the former and current director, and doctors and nurses currently or previously connected with HDB. I conducted another 20 interviews with MOH central administration staff from the Procurement, Public Hospitals, Medical Care, Accounting, and Directorate General divisions/departments. Twenty-four interviews were carried out with ALSM members, eleven of them using the DRM and averaging three hours in duration. The remaining interviews were open-ended. Finally, I interviewed the former and current Ministers of Health and a total of 4 of their advisors.

Typically, the director was party to all discussions as *ex officio* member of the ALSM, so he was considered to have been a co-holder of most rights, some more strongly than others depending on how much influence he had over final decisions made and whether he abided by decisions taken. He was the sole-holder of most decision rights internal to the management of the hospital.

In addition to a static mapping, the DRF allows the tracking of the evolution of decision rights allocations over time. Each of the boxes in the decision rights map was divided into three rows representing the periods 1991-1992, 1993-1995, and 1996-1997, respectively. The analysis by period was important because decision rights were developed in reaction to market forces, like the evolving of a firm; and the process involved creation, negotiation, contestation, and dilution of decision rights before an "equilibrium" was reached. Not surprisingly, the decision rights map (institutional design) did not look the same in 1991 as it did in 1997. To determine the degree of influence each of the actors in the columns (ALSM, HDB Director, MOH, Other) had over the decision right and ultimately who held the decision right, one, two, or three pluses were placed in the row. For example, if the interviewee believed that the director co-held the decision right with the ALSM over a certain matter with equal influence; I wrote two pluses on each side for that particular period. If the interviewee felt that the director was a fairly weak co-holder, and the ALSM had more influence over a given issue (i.e., the ALSM could proceed with the decision even if the director disagreed), I wrote one plus in the box for the director, and two or three pluses in the box for the ALSM, or vice versa.

Interestingly, for 95% of decisions rights analyzed, all interviewees were in agreement over who the principal holders were, and how the right evolved over the 7-year period. Where there were contradictions in answers, I conducted two sorts of follow-up interviews. One with other members of the ALSM who disagreed on either the decision rights allocation or its evolution, and one with an HDB staff member who interacted with the ALSM and the Director on the issue at hand. For example, if the contradiction arose with respect to an area of finance, I interviewed the HDB accountant to explain the difference – a method called "triangulation" (Yin, 1994). I sought to understand whether the contradiction was due to a data-gathering failure or to the idiosyncrasies of personalities and differential perceptions and experiences on the part of interviewees. In all such cases, I was able to refine the manner in which the data were collected by re-posing the question, by posing it differently, or by attributing the contradiction to personality and temperament. Supplementing the decision rights method were: i) open-ended interviews, mostly carried out prior to the structured interviews using the DRF; and ii) analysis of 143 sets of minutes of meetings, a treasurer's ledger, purchase orders, files of receipts, audits, annual reports, financial statements, personnel rosters, employee absence data, as well as national legislation and various reports written by HDB and World Bank staff on HDB and on other public hospitals. During this fieldwork, I benefited from permission to take part in weekly meetings of the MOH Task Force on Public Hospitals as a participant observer.[9] I was also given permission to accompany the MOH Ratings Commission to inspect public and private hospitals and assess their standards, HDB included.

6. Mapping Pre-corporatization Decision Rights

I first used the DRF to identify the pre-corporatization (centralized) decision rights that governed all public hospitals in the country until 1996, for the four main areas of hospital management and finance: a) Finance; b) Human Resource Management; c) Procurement; and; d) Service Delivery. The mapping identified who the holders and co-holders of decision

[9] See Pomper (1991) for a review of the benefits and constraints of participant observation as a qualitative research method.

rights were and determined the implications of the institutional design on the operation of public hospitals in Lebanon. This analysis showed that administrative units above the level of public hospitals held most decision rights; and that the latter had little leeway to adapt to, or respond to changes in local demand for public health delivery.

For example, in the area of finance, the holder of decision rights over all matters related to public hospitals was the Ministry of Finance, in particular the Treasury Department and the Budget Office. These decision rights were allocated through two principal institutions that govern all public government agencies, including hospitals: the Public Accounting Law and the annually promulgated Budget Law[10]. They determine: a) expenditures ranging from allocation to disbursement in all areas of hospital management and finance; and b) revenue management, including taxation and other extractive instruments and collection of outstanding and owed public fiscal obligations.

As far as public hospitals were concerned, the co-holders of decision rights over finance within the MOH were the Department of Medical Care and the Procurement Department. According to the letter of the law, the Department of Medical Care received proposed budgets from public hospitals, aligned and incorporated them within its own budget, and submitted them to the Procurement Department. The Procurement Department then made further adjustments to proposed budgets, based on allocations in previous years, and forwarded them on to the Accounting Department for final incorporation into the sectoral budget proposal. The law did not provide for instances where budgets proposed by public hospitals were not found acceptable by the Department of Medical Care (DMC); since, in practice, there was no negotiation between these two parties over the budget under the old system. The fact that no formal mechanism was defined in the law for agreement on a final budget between the DMC and the hospital left the final decision up to the discretion of the DMC and to the Procurement Department – equal co-holders of this decision right. In practice, some hospitals, along with other MOH units, had the capacity and discipline to submit budget proposals while others did not. As a result, the system did not ensure careful consideration of real changes in demand for hospital services. Figure 1 depicts the budget preparation process of public hospitals under the old system.

Further information obtained through the DRF indicated that the system operated in an even more centralized manner than what was stipulated by law. More often than not, partly because of emergency and crisis-management exigencies during the war and a gradual loss of public sector capacity for planning, sectoral expenditure ceilings were pre-set by the Ministry of Finance without close consideration of need in each sector. In the case of the MOH, for instance, once the Minister's office received the budget figures for the sector, an *ex post* allocation of expenditures was made to the various budgetary units in the sector, including hospitals.

The process was not only irregular and granted few decision rights to public hospitals, but also tended to grant a constrained set of decision rights over finance to the MOH itself (Figure 2).

The situation was not much different in the three other areas of hospital management. Table 2 summarizes the centralized decision rights allocations that prevailed in the MOH at the time when HDB launched its corporatization experiment. Under each of the four areas of hospital finance and management discussed above, the table details the principal set of relevant decision rights and identifies their holders. The column "Not Held" refers to areas where the decision right did not exist altogether.

[10] The Public Accounting Law is defined by Decree #14969 (1963). Section #2 of this decree specifies the procedures for the preparation of the annual Budget Law.

7. Mapping Post-corporatization Rights

What emerges from applying the DRF to HDB is that this entrepreneurial hospital created two mechanisms that helped it improve its operation over time: (1) a new institutional design; and (2) a new system of management. On the institutional side, two categories of decision rights emerged:

- "Rights created" were those that the (centralized) public sector institutional design did not provide for, such as the right to charge fees for services. The creation of rights in this area allowed HDB budgetary flexibility and developing an independent revenue base.
- "Rights appropriated" were those that existed in the institutional design; but because the original (centralized) allocation placed constraints on the provision of stronger incentives and on the improvement of overall performance, they were acquired by HDB from a higher level of the administration. An example was the right to hire, fire, and promote staff – functions that HDB decentralized to its level from the central administration.

The new system of management that HDB developed for itself included: i) a formal fee schedule, so that fees for services were charged to patients but not arbitrarily set; and ii) an incentive compensation plan that offered remuneration close to private sector rates.

In all four areas of hospital management and finance, rights that were "created" when the HDB experiment was launched were exercised alongside existing MOH rights; i.e., they supplemented them. None of the newly created rights were meant to overrule old rights – one of the secrets of the ALSM's success in accommodating the *de jure* structure. "Rights appropriated" are those that HDB *de facto* transferred down to its own level, despite their being *de jure* and held by central administrations of the public sector such as the MOH, the MOF and the Civil Service Board, as discussed in section 4.2. Table 3 summarizes HDB's decision rights allocation in the area of finance.

8. Explaining HDB's Decision Rights Complementarities

In matters related to finance, by far the most important decision right HDB created was the right to collect fees for health services delivered (included in Table 4.1 under "solicitation of outside funds").[11] HDB complemented this right with other rights that required annual *ex post* audits, created expenditure rules over allocation of fee revenue, and set formal fee schedules for services with clear fee exemption policies and a fee collection system. Exercised together, these rights allowed HDB to surmount a most difficult challenge of public sector management: (a) the creation of accountability and a system of controls that did not quell innovation, and (b) a hard budget constraint that did not undermine financial flexibility. These elements were key to the gradual improvement of HDB. Revenue was combined with controls and procedures resulting in improvements that no other public hospital in the country was able to match (as evidenced by patient demand patterns and market signals).

Interestingly, the ALSM's concern with accountability and desire for control was derived from its quasi-legal status. The ALSM was legally incorporated and non-profit; however, its relationship with the hospital was quasi-legal, especially in requiring patients to contribute to the cost of care (see Eid 2001a for details). Furthermore, the whole experience was perceived by many to be illegal, because of suspicions of under-the-table payments at other hospitals as well as instances of graft. Combined, these factors led ALSM members to be very conscious of the consequences of their decisions; and their desire to innovate was tempered by the risks associated with innovation. For members of the ALSM because they were all established and

[11] Also included in this category are cash grants, gifts, and in-kind contributions secured by ALSM members and the HDB director through their personal and professional contacts – very much along the lines of the traditional "community notable" type board.

visible professionals, this risk was as much reputational as it was financial; and it functioned as a constraint on HDB activities, budgetary decisions included. As such, they created a decision right at the level of the board requiring an annual independent audit. Because hospitals do not assume the full risks of their investment decisions, among the most difficult challenges in designing corporatization today are perennial budget deficits causing technical inefficiencies, increase in sectoral expenditures, and issues of effectiveness. Finally, HDB's system of controls, through the finance decision rights, allowed the hospital enough maneuvering power, in most areas, to complement financial autonomy with agility and flexibility. The records show a reasonable balance of clearance or *ex post* ratification of financial decisions made by the director versus discussions of investments and procurement decisions that were made shortly afterwards.

9. Conclusions about HDB Based on the Decision Rights Method

In summary, the mapping of HDB's decision rights and their evolution, reveals how this "bottom up" design includes some prominent features that are absent from the "top down" design under Law #544. The "bottom up" features are in line with conclusions in the literature on "good" private sector performance. They amount to (a) decision rights complementarities; (b) high powered incentives; and (c) risk transfer.

Two examples illustrate some of what the HDB experiment achieved:

1. The first example shows that a combination of (a) and (b) resulted in hard budget constraints, when most public and corporatized hospitals experience perennial budget deficits. Public hospitals account for an average of 65% of MOH expenditures in developing countries. At HDB, the decision right to raise revenue through user fees was complemented with a number of other decision rights that created a system of accountability. Combined, these decision rights served to keep spending patterns within HDB's means.
2. The second example was the provision of high-powered incentives to improve staff performance in the hospital and deliver better quality service at low fees affordable to patients. Among the most interesting of HDB's decision rights allocations was the pairing of claimant and control rights resulting in high powered incentives for employees, most notably the director. In the private sector, although uncommon in the public sector, this amounts to the manager owning part of the firm. The most successful examples of corporatization, as in the case of Catalunia, Spain (Salas, 1996) have experimented with compensation schemes and performance benchmarks for the hospital manager.

In contrast, the following examples illustrate how the lack of attention to the implications of decision rights allocations under Law #544 yielded an institutional design inferior to that of HDB once all public hospitals were corporatized.

1. In the area of finance, the most obvious lacuna today is the lack of a decision right related to an independent audit.
2. Decision rights, in the form of veto power over hospital "autonomous" revenue, are allocated to the central administration, creating a significant disincentive to performance. The Ministries of Health and Finance have veto power over 16 out of 20 decision rights assigned to the hospital board.
3. In the area of finance, the setting of corporatized hospital fee schedules, which, under Law #544 are all centrally determined by the Ministries of Health and Finance, leaves no room to reflect real and/or local costs.

4. Decision rights related to fee collection and administrative matters are set by decree for all hospitals in the country creating unclear, weak, and contradictory systems of accountability at the level of hospitals.
5. Similar decision rights misallocations exist in the remaining areas of hospital management. The most problematic is the lack of any system of incentive compensation for all hospital staff; and all employment and contracting policies are once again set by the MOH, as they had been under the pre-corporatization institutional design.
6. Applying the DRF to Law #544 reveals these inconsistencies and an empirical check has confirmed them. The system is replete with inefficiencies and organizational complexities yielding results inferior in many ways to the HDB entrepreneurial innovation (Eid 2000a, 2000b).

10. Conclusions

This paper has shown how the decision rights approach can be developed into a tool for mapping institutional design in an organization, such as a public hospital. It has shown how, in hybrid cases such as corporatization, a careful mapping of decision rights ex ante can avoid some of the ex post pitfalls frequently encountered. The innovative case of HDB was an opportunity to analyze the evolution of decision rights in the public sector, in reaction to market forces, and to shed light on the challenge of designing market-driven legislation.

The paper also generally illustrates how decision rights mappings can be used to analyze static (existing) allocations of decision rights in organizations. Using the framework to further benchmark old against new (restructured) decision rights allows for a dynamic analysis of the evolution of institutional design, an understudied area in both organization economics and organizational behavior.

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Figure 1: The *de jure* Hospital Budget Preparation Process, Pre-corporatization

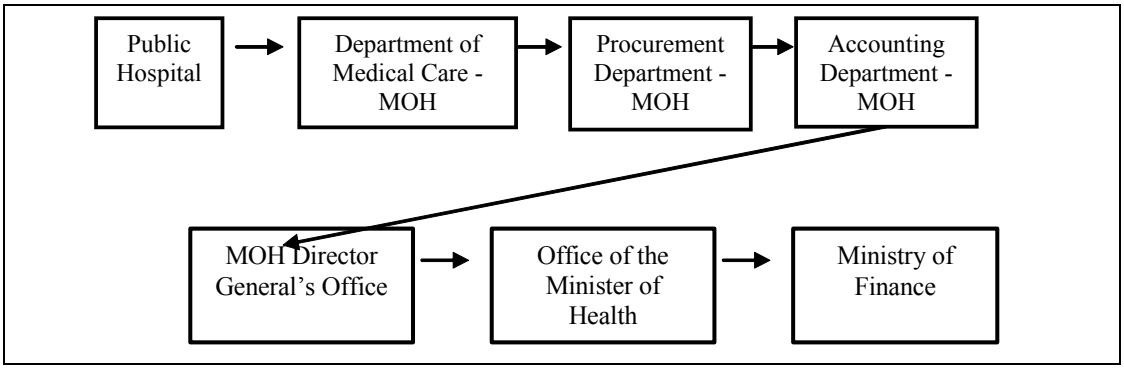

Figure 2: The Pre-corporatization *de facto* Hospital Budget Preparation Process

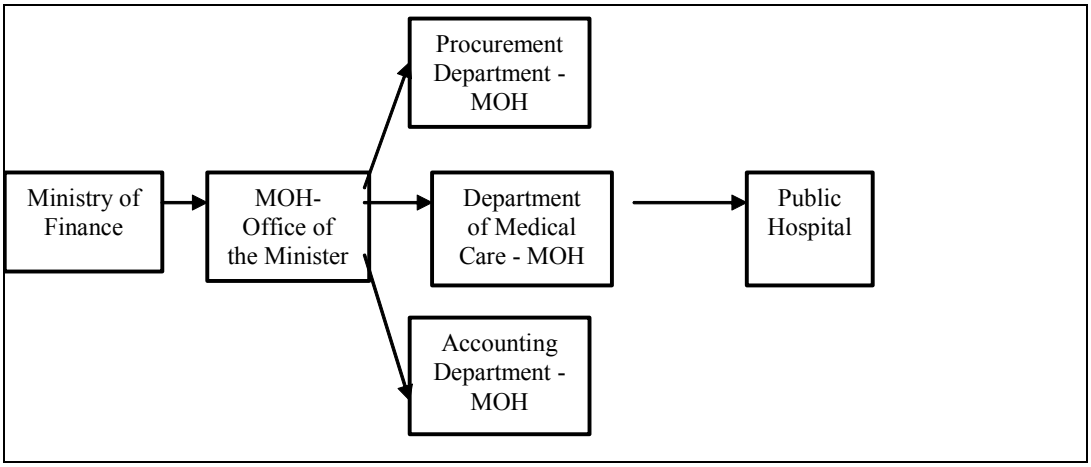

Table 1: Decision Rights Framework

Decision Right	Holder of Decision Right			
	ALSM	HDB Director	MOH	Other
Finance	χ	χ	χ	χ
Solicitation of Outside Funds	χ	χ	χ	χ
Allocation of Outside Funds	χ	χ	χ	χ
Fee Setting for Services	χ	χ	χ	χ
Exemption Policy	χ	χ	χ	χ
Fee Collection	χ	χ	χ	χ
Allocation of Fee Revenue	χ	χ	χ	χ

Table 2: Centralized Decision Rights Allocations Governing Public Hospitals (Pre-1996)

	Ministry of Finance	Civil Service Board	Ministry of Health	Public Hospitals	Not Held
Finance					
Solicitation of outside funds					χ
Allocation of outside funds					χ
Fee setting for services					χ
Exemption policy					χ
Fee collection			χ*	χ*	
Allocation of fee revenue					χ
Human Resource Management					
Hiring		χ			
Promotion		χ			
Discipline		χ			
Firing		χ			
Procurement					
Medical consumables			χ		
Other consumables			χ	χ	
Major medical equipment	χ		χ		
Other fixed equipment	χ		χ		
Service Delivery					
Range of services			χ	χ	
Quality control			χ	χ	
Community outreach					χ
Coordination with other hospitals					χ

Note: The presence of two χs in one row indicates that a decision right was co-held. *This decision right existed (and was co-held) but was generally not implemented.
Source: Author's construction based on Law #14969, Decrees #112, #8377, #325 and the discussion in Section 4.

Table 3: HDB's Decision Rights in Finance

Rights Created	Solicitation of outside funds Fee setting for services Exemption policy Fee collection Allocation of fee revenue
Rights Appropriated	None

Source: Author's construction based on results from the Decision Rights Analysis Framework (Appendix A).