



Governance and behavior in non-profits: analysis of Uruguayan health care organizations.¹

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Abstract

Literature on non-traditional firms has focused on behavioral differences with for-profit firms. Less attention has been given to the variations in behavior among non-traditional firms. This paper examines differences across three types of Uruguayan non-profit health care organizations. This paper draws on a unique dataset of Uruguayan health care organizations during the period 1982-1990, as well as interviews with doctors working in the three types of nonprofits during Spring 2010. We use a simple OLS regression to identify differences in average behavior, and differences in reaction to a regulatory change. The paper shows that structure of stake holding and governance significantly affect behavior, even where many behaviors are highly regulated. These findings highlight the importance of specifying governance structure when predicting behavior of non-traditional firms. Empirical tests of behavioral differences between traditional and non-traditional firms will be more meaningful if the governance structure of non-traditional firms is common and specified. A limitation of our study is our inability to control for the timing of degeneration of producer cooperatives. This would be one element of governance structure to consider in future data collection. These findings highlight the need to avoid drawing broad policy conclusions from the behavior of a specific sub-set of non-traditional firms. This paper highlights the importance of carefully specifying stakeholder and governance structure when predicting behavior of non-traditional firms. It is of interest to anyone using a sample of non-traditional firms to test general hypotheses about their behavior.

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Structured Abstract:

Purpose

Literature on non-traditional firms has focused on behavioral differences with for-profit firms. Less attention has been given to the variations in behavior among non-traditional firms. This paper examines differences across three types of Uruguayan non-profit health care organizations.

Design/methodology/approach

This paper draws on a unique dataset of Uruguayan health care organizations during the period 1982-1990, as well as interviews with doctors working in the three types of non-profits during Spring 2010. We use a simple OLS regression to identify differences in average behavior, and differences in reaction to a regulatory change.

Findings

The paper shows that structure of stake holding and governance significantly affect behavior, even where many behaviors are highly regulated.

Research limitations/implications

These findings highlight the importance of specifying governance structure when predicting behavior of non-traditional firms. Empirical tests of behavioral differences between traditional and non-traditional firms will be more meaningful if the governance structure of non-traditional firms is common and specified. A limitation of our study is our inability to control for the timing of degeneration of producer cooperatives. This would be one element of governance structure to consider in future data collection.

Practical implications

These findings highlight the need to avoid drawing broad policy conclusions from the behavior of a specific sub-set of non-traditional firms.

Originality/value

This paper highlights the importance of carefully specifying stakeholder and governance structure when predicting behavior of non-traditional firms. It is of interest to anyone using a sample of non-traditional firms to test general hypotheses about their behavior.

1) Introduction

Much of the literature on the behavior of non-traditional firms (non-profits and cooperatives) has focused on predicted differences with traditional, for-profit firms. Less attention has been paid to variations in behavior among different types of non-traditional firms, resulting from the structure of stake holding or ways that stakeholders participate in governance. This omission may lead to unfounded conclusions about behavioral or performance differences between traditional and non-traditional firms.

For example, in a 1992 study of the impact of property rights on efficiency, Fizel and Nunnikhoven use cross-sectional data to compare for-profit and non-profit nursing homes without specifying non-profit type. They conclude that for-profits are more efficient than non-profits in general--relative performance is not linked to a particular form (or forms) of non-profit. In a 1993 study, L. L. Peters performs a meta-analysis of performance of for- and non-profit electric companies. While he notes the importance of possible variation in performance by type of non-profit, the nature of the previous work forces him to consider municipal and cooperative firms together as “non-profits.” Peters finds no significant difference in performance between for- and non-profit firms.

In recent years, more attention has begun to be paid to the question of how non-profit form affects behavior. Avner Ben-Ner and Benedetto Gui (2003) provide a careful typology of organization type, focusing on variation by residual claimancy and control, and discuss behavioral implications of the differences. Mehdi Farsi and Massimio Filippi (2004) empirically examine differences in performance between publically- and privately-owned non-profit nursing homes in Switzerland.

In this paper, we extend this literature. We examine the behavior of three types of Uruguayan private, non-profit health care organizations and test for behavioral differences across the three types. We examine both differences in overall patterns of

spending by the organizations and differences in the response of the organizations to an exogenous shock—a brief liberalization of government controls on membership fees.

Uruguayan providers of primary health care services (outside the public sector which covers mainly the indigent, military families and other dependents of the state) are required by a 1981 law to organize as non-profits. They may choose among three types of organization: mutual benefit organizations (similar to consumer cooperatives), and two types of producer (doctors) cooperatives. While they differ in their stakeholder and governance structures, all three types of organization face a very tight regulatory environment. The state sets prices for organization membership and other fees and mandates the range of services offered. Salaries, working conditions, and hours of doctors and technical staff are centrally negotiated with unions of medical workers.

Because non-profits do not compete in the market for basic health care services with for-profit providers, this context provides a view of “pure” non-profit behavior, not influenced by competition with for-profits. At the same time, the strict regulatory environment should reduce variations in behavior across non-profits. If significant differences in behavior exist in this regulatory context, more significant differences might be expected between types of non-profits in more liberalized contexts.

We draw on a unique dataset of Uruguayan health care organizations over the period 1982-1990, the period immediately following the establishing of a mainly non-profit system for delivering private health care.³ While the survey covers a period two decades in the past, it illustrates cross-organizational differences in behavior. At the same time, the Uruguayan health care sector has undergone only very limited reform in the intervening period, leaving the structure of the three organizations, and the regulatory environment, basically unchanged in 2010, although there is significant

³ The database was provided by Gaston Labadie who studied Uruguayans’ choice among various types of health care organisations (Labadie, et. al, 1997). Labadie received the data from the Uruguayan Ministry of Health.

discussion about reform. Taking advantage of this continuity, we conducted interviews with 11 Uruguayan doctors working in the three types of non-profits during the spring of 2010, in order to understand organizational differences more clearly.

We show that there are significant differences in behavior across organizational forms, even in a context where many behaviors are highly regulated. These differences provide partial support for dominant models of nonprofit and cooperative behavior. For example, Union (producer) Cooperatives, which are predicted to maximize income per doctor, spend a larger share of total expenses on doctors' remuneration than other types of organizations, which appear to have different interests. However, some results contradict standard predictions: Mutuels which, as a form of consumer cooperative, are expected to minimize costs, do not raise membership fees less than other organizations during a period of price liberalization. Interview evidence suggests some explanations for this and other findings. We conclude that more attention should be paid to governance structure when making predictions about non-profit behavior.

2) Uruguayan Health Sector in the 1980s

Regulations established in 1981 require all private providers of basic health services to be non-profit organizations (Grau Perez and Lazarov, 1999). There is a long tradition, dating back to the mid-1800s, of non-profit provision of basic health care through Mutuels, mutual benefit organizations based on ethnic solidarity. These organizations already met the new requirements. Other, for-profit, health care providers were required to restructure into non-profits (Bertullo, Isola, Castro and Silveira, 2003), described in section 3) below. In rural areas, where few non-profits were organized through other channels, the rural doctors' union (*Federacion Medica del Interior*, or *FEMI*) began organizing a minimum of one non-profit provider per *departemento* (department, or county).

By 1984, 36.5% of Uruguayans received primary health care from a non-profit organization (Labadie, 1997), with the share rising to 47% by 1993 (Grau Perez, 1999). The remainder of the population (by 1993 consisting mainly low-income households without a formal-sector job and families of personnel of the armed forces and police)⁴ received basic health services from state organizations. Private, for-profit organizations continued to supply specialized (non-primary care) services.

Private, non-profit suppliers of primary care face significant regulation. The state sets a minimum number of affiliates (members serviced by the health care organization), mandates the package of coverage provided, and sets rates for affiliation (membership) and co-payment prices.

Regulating the scope of services, the state mandates that organizations supply basic, complete and egalitarian medical assistance in the areas of surgery, pediatrics, gynecology, general medicine, and preventive medicine, as well as other services such as emergency treatment. A health care organization may supply services directly or outsource them to other non-profit health organizations or to private clinics. In this case, the health care organization to which the affiliate belongs pays the providers.

The system is organized as pre-paid insurance. The state collects a percentage of employees' wages (from both employers and employees) and pays a membership fee (the "quota") to the health care provider chosen by the individual. If an employee's contributions do not cover the quota, the state pays the difference, subsidizing health care to the less well-paid. Those affiliates who are not formal sector employees but wish to affiliate to private non-profit providers must pay the full amount of the state-set quota

⁴ Additional public services are offered through the hospital of the *Banco de Seguros del Estado* (State Insurance Company) for certain health issues, such as individuals seriously burned, and the *Fondo Nacional de Recursos* (National Resource Fund), a decentralized publicly funded-organization that funds high-cost, complex medical treatments, often through private providers.

directly to the medical institution. Health care providers have the right to reject affiliates with poor health records, who will then be serviced by public providers.

Quotas, the main source of revenue for health care providers, were liberalized to a cap in 1983, and then liberalized completely in July, 1984. A rapid increase in the price of membership led to a re-imposition of state-set membership fees in October, 1985, however, which was still in place in 1990. Copayments, the second largest component of health organization revenue, include additional payments for medicines, office visits, and other services. Like membership fees, these were briefly liberalized in 1984 and re-regulated in 1985. The remaining income of non-profit health organizations comes from providing services to affiliates of other organizations (outsourced services).

Since coverage and prices are regulated, competition among non-profit organizations for affiliates (and thus revenue) is restricted to things like quality of attention to customers. Competition is further limited by a requirement that individuals affiliate to a health care organization located in their own department. Competition is stronger in Montevideo, where in all years of the study there were more than 20 health care non-profits to choose from. In the majority of departments outside Montevideo (10 of 18), only one non-profit provider existed during the entire period under study. In the remaining eight departments, two had three or more providers in every year from 1983-1990, while the other six had two providers in 1-3 of the years.

Salaries in non-profit health organizations are determined through tri-partite negotiations between unions, representatives of the non-profits, and the state. Collective agreements apply to all health organizations in which union members are employed. Doctors need not work more than 26 hours a month for any organization, allowing doctors to work in more than one organization. Doctors in fact work in as many as 5 or

6 organizations—often a mix of public organizations, private for-profits, and non-profits.

The fact that doctors in different types of organization negotiate their salaries through the same unions apparently leaves little possibility for pay to vary across organizations.⁵ However, interview evidence suggests that individual organizations are permitted to vary salaries by about 20% from the negotiated rate (Interview 8, 2010). In addition to their salaries, doctors are paid a type of piece rate—an additional sum for each “medical act” that doctors perform. Additional variation in doctor pay may thus emerge across organizations, as these choose the number and type of medical acts performed and define medical acts, the definition of which appears to vary across organizations (Interviews 3, 7, 8, 2010). In 1991, payment for medical acts made up about 35% of total remuneration for doctors in Montevideo, and about 30% for doctors in the interior (PAHO, 2007).

Finally, doctors may increase their incomes by shifting work—by keeping medical acts “in-house” instead of outsourcing them, or by outsourcing specific procedures from a non-profit where they work but do not have access to the equipment necessary for the procedure, to another health organization where they also work, where they do have access to the machinery, or to a private for-profit clinic, which they might own (Interviews 2, 7, 9, 11, 2010). Other interview data suggest, however, that in most cases, the decision to outsource services is made by the Technical Director and is based on relative costs of in-house or outsourced services (Interview 9, 2010).

Overall, throughout this period the behavior of Uruguayan health care organizations was highly constrained. They had only brief opportunities to vary the prices they

⁵ As will be discussed further below, doctors in Montevideo (regardless of the type of organization they work in) are organized by a different union than doctors in other provinces and, facing a much larger supply of doctors in Montevideo, members of this union typically get somewhat lower salaries than members of the union which organizes doctors outside Montevideo.

charged for their services, little control over the package of services offered to affiliates, and limited ability to influence remunerations to doctors. Of course, organizations retained more control of some variables, including costs linked to organizational efficiencies and bargaining with suppliers, *quality* of the services to affiliates (wait times, doctor quality), and the working conditions of staff. Perhaps surprisingly, investments were not regulated, although they did require state approval.

3) Types of Organization

In this section we draw on previous analyses of Uruguayan health organizations as well as interviews with stakeholders to describe the three types of Uruguayan non-profit health care organizations. Eleven interviews (see Appendix for details) were carried out with doctors, Technical Directors, and Board Members during spring 2010. Since we cannot be sure that the information from the interviews accurately describes condition during the period 1982-1990, we simply highlight ways that interviews suggest differences from the established understanding of organizational structure.

In addition to the secondary sources and interview data, we also draw on survey data from the Uruguayan Ministry of Health. The data includes financial results, utilization levels, and related information for each of the approximately 50 private, non-profit organizations supplying primary health services over the period 1983-1986 and 1988-1990⁶ (pooled, cross-sectional data). Since many of the organizations did not exist over the entire period, the exact number of organizations varies from year to year, as reflected in Table 1 below. The data was collected retrospectively, through surveys of the non-profit organizations, in 1992.

The previous literature (Labadie, 1997; Solari, 1992) describes the three types of non-profit health organizations. Mutuals, described above, resemble consumer

⁶ The data is meant to be a complete series from 1982-1990. However, data for 1982 and 1987 are missing.

cooperatives since “consumers” (affiliates) elect other affiliates to the Board and exercise control over the organization. Doctors working in Mutuels are required to be affiliates of the Mutual (Interview 9, 2010). Doctors may be elected to the Board either in their capacity as affiliates, or as representatives of the staff. Other employees may also have seats on the Board (as staff), but all staff are minority members.

Interview evidence (Interviews 7, 11, 2010) suggests that governance of Mutuels may not always reflect broad affiliate interests. Board membership is often limited to a small group of insiders, sometimes organized around the families of founding members, who rotate through the Board periodically. Insiders may collude to present a limited number of lists (sometimes only one) at the time of elections, excluding other affiliates from power. Boards were also reportedly sometimes “captured” by businessmen-affiliates, interested in selling goods and services to the organization.

Other health organizations are organized as medical cooperatives, resembling producer cooperatives. These cooperatives can in turn be subdivided into two different types. Guild, or Union, Cooperatives are producer cooperatives organized under the auspices of doctors’ unions. These cooperatives operate independently of the unions in most respects. The Board of Directors is elected from among doctors who are members of the producer cooperative, by the other member-doctors. In this case, all doctors working in the cooperative are both members and workers.

There are two doctors’ unions, one serving doctors working in Montevideo (*Sindicato Médico del Uruguay*), and the other representing doctors working in other departments (*Federacion Medica del Interior*, or *FEMI*). The Montevideo union organizes only one Union Cooperative, *CASMU* (*Centro de Asistencia del Sindicato Medico del Uruguay*). *CASMU* is by far the largest health care organization in Uruguay. There is at least one Union Cooperative organized by *FEMI* in every

department outside Montevideo, organized by the union after the shift to the all non-profit national system in 1981. In some cases, there is more than one in a department. Serving more rural areas, these tend to be much smaller than CASMU.

The second type of medical producer cooperative, Doctors' Cooperatives, are created, and often funded, by doctor-members. Members of the Board are elected from among these doctor-members. In Doctors' Cooperatives, the member-doctors also hire other, non-member doctors (Labadie, 1997; Solari, 1992). These non-member doctors cannot be elected to the Board.⁷ Some are regular employees, for whom the organization pays social security contributions. But Doctors' Cooperatives also reported hiring contract workers. These contract workers may later be offered a chance to become a formal employee (or even a member of the producer cooperative).

While Mutuals are organized by health care consumers, around principles of ethnic or religious solidarity, and then hire doctors, Doctors' and Union Cooperatives are organized by doctors themselves. The choice to organize as a Union Cooperative, as opposed to a Doctors' Cooperative, appears to depend in part on when the organization was formed and, relatedly, on who initiated the organization.

FEMI took the lead in organizing at least one non-profit health care cooperative in each department after the passage of the 1981 law. This may have been an important service to union members, providing employment to Uruguayan doctors who faced a flooded labor market (PAHO, 2007) but had limited capital for start up costs and other organizational problems. FEMI also appears to offer some other advantages to its Union Cooperatives, such as the ability to "capture" members from other unions, subcontract work from public hospitals (where union members also work), and so on (Interview 4, 2010). Private, for-profit Doctors' Cooperatives, or group practices, may

⁷ Both types of producer cooperatives have rules which allow non-member doctors, workers and affiliates to be represented on the Board, but this possibility has not been exercised in practice.

have simply turned themselves into non-profit a Doctors' Cooperative at the time of the 1981 law, using capital already in hand. But in rural areas, pre-existing group practices could also work with their union (FEMI) to become a Union Cooperative (Interview 2, 2010). One factor in the choice of organizational form may have been the practice in Doctors' Cooperatives of hiring non-member doctors as employees.

Interviews with members of six Union Cooperatives suggested an important difference from this prevailing description, however. Interviewees explained that (at the time of the interviews in 2010) Union Cooperatives, like Doctors' Cooperatives, often hire non-member doctors (Interviews 2,3,4, 2010). This "degeneration" reportedly occurs when the founding group of doctor-members can no longer manage the workload, but chooses not to recruit additional doctors as regular cooperative members (Interview 7). It is thus possible that the degeneration occurred later in the Union Cooperatives than in the Doctors' Cooperatives, and governance differences may still have existed at the time our data was collected. Many Union Cooperatives were new in 1983, and possibly had not yet reached capacity, whereas Doctors' Cooperatives were more likely to be pre-existing practices transformed after the 1981 law.

Uruguayan non-profit health organizations clearly differ in the make-up of their stakeholders and their representation on the Board of Directors. Boards at Mutualls are dominated by affiliates, whereas producer cooperatives' Boards are dominated by doctors. It is less clear whether the two forms of producer cooperatives are distinct.

Other differences among the types of organization that may affect behavior include differences in size, capital stock, services offered, and the age of members. The period 1983-1990 was one of rapid development in the Uruguayan health sector, as for-profit organizations restructured into non-profits and new non-profit firms were created to meet growing demand. After a 1983 regulation established a minimum number of

affiliates for health care non-profits, small organizations closed or merged, and the number of Mutualls fell. The share of Union Cooperatives in the non-profit population increased as a result, but the number of Mutualls stabilized at about 12, or 24% of the population of non-profits, at the end of the period. As seen in Table 1, the organizations were divided fairly evenly between the three forms. (Because CASMU is uniquely large, we treat it as a distinct type of non-profit, although it is Union Cooperative.)

As seen in Table 2, membership in these organizations grew significantly over the period 1983-1990. There are significant differences in average number of affiliates by organizational type however, and these remain fairly stable. As noted above, CASMU, the Montevideo Union Cooperative, is significantly larger than any other organizational type. Measured by number of affiliates, Mutualls are the next largest on average, while Doctors Cooperatives and Union Cooperatives outside Montevideo are fairly similar in terms of average membership. Over the period, we see a slight shift in membership from Doctors' Cooperatives to Union Cooperatives.

Between 1983 and 1990, capital stock of the non-profits grew much faster than membership (Table 3). There were important differences in the amount of capital acquired, however, with Mutualls and the relatively newer Union Cooperatives gaining capital faster than Doctors' Cooperatives or the already-capital intensive CASMU. These differences in membership and capital stock may reflect different scale economies, particularly affecting the ability of organizations to offer services in-house and to offer (remuneration-enhancing) medical acts to doctors.

4) Behavior of Non-Profit Organizations

In this section, we develop hypotheses about behavioral differences across the different types of non-profit organization, drawing on the literature on stakeholder interests and non-profit behavior, and the literature on behavior of producer and

consumer cooperatives. Preference differences among diverse stakeholders may create conflicts over non-profit objectives. Because non-profits are not subject to take-over threats, and to the extent that they do not face competition from for-profits, the diverse stakeholders make internal organization central to non-profit behavior (Bacchiega and Borzaga, 2002) and generalizations about non-profit behavior difficult. We use information about organizational structure and standard theory of cooperative behavior to develop hypotheses about behavioral differences.

Uruguayan health care organizations do not have outside donors, leaving managers, workers and consumers as relevant stakeholders. Managers may have preferences over the growth and financial health of the organization, as a larger, financially more successful non-profit may give a manager more power with respect to other non-profits and public officials. Managers' preferences may also include product quality (Glaeser, 2002). Workers in health care non-profits include doctors, as well as other medical and non-medical staff. Their preferences include pay and working conditions. Worker preferences may also include product quality, as non-profit workers may choose non-profit employment as a result of their commitment to its goals (Glaeser, 2002; DeVaro and Brookshire, 2007). Since membership fees, co-payments, and the package of benefits are regulated, relevant consumer interests center on quality.

The diverse stakeholders may influence organizational behavior in several ways. The distribution of formal control rights, including membership on the Board of Directors, is important (Weisbrod, 2004). Control of information and technical knowledge is another channel of influence. In medical worker cooperatives (hospitals), doctors' control of technical knowledge may lead hospitals to follow their preferences even when doctors do not constitute a majority of Board members (Pauly and Redisch,

1973). Similarly, proximity of certain stakeholders to managers or Board members can increase these stakeholders' control over important decisions (Glaeser, 2002).

Formal control rights in the Uruguayan health care non-profits vary according to their organizational form. In Mutuals, consumers make up the majority of Board members, although doctors may also be represented as both consumers and workers, and other workers may also have minority representation on the Board. In Union and Doctors' Cooperatives, the Board of Directors is elected from among doctors who are members of the cooperative, by the other member-doctors. An important difference between the two forms of producer cooperatives may be the non-representation of non-member doctors (workers) on the Boards of Doctors' Cooperatives during the period 1983-1990. Where a Union Cooperative is the only non-profit in a department, doctors will also be consumers in that cooperative, in effect giving consumers some input into decisions.

All health care non-profits must have a doctor as their Technical Director, providing similar informal control rights to doctors across organizational forms--via both legal recognition of doctors' special knowledge and proximity of the Technical Director to management and the Board. Other means of influence via proximity may vary across organizational form. In Mutuals, insider groups of consumer-members may interact closely with the Board and management, while in Doctors' and Union Cooperatives, senior and founding-member doctors are more likely to do so.

Standard models of cooperative behavior assist us in developing predictions about how different types of stakeholder influence translate into behavior. While standard models assume a more homogeneous set of stakeholders (workers or consumers) than is actually found in Uruguayan non-profits, they capture the basic differences between the most influential stakeholders in consumer and producer cooperatives.

Many standard predictions of these models will not hold, however, given the highly regulated context of Uruguayan health care cooperatives. For example, a standard model of consumer cooperative behavior (Clark, 1952) posits that cooperatives governed by consumers will minimize per-unit costs. Since the fees and co-payments consumers pay are set by the state, costs to Mutual members are not linked to actual costs of providing the service. Consumer-members may have little incentive to minimize costs. We posit that they may instead maximize quality, by raising doctor remuneration, in order to hire high-quality doctors, by hiring more doctors, to reduce wait time, or by purchasing machines for (convenient) in-house provision of services. Doctors on the Board and the Technical Director might attempt to influence consumers' definition of quality, to bring this definition more in line with their own preferences.

One important exception to this behavioral prediction, however, would be the period of quota liberalization in 1984-1985. During this period, consumer-members of the Mutual Boards faced a direct link between cooperative behavior (quota-setting) and their costs of health care, and predicted consumer interests in low costs should have affected the behavior of Mutuels. Mutuels would be expected to raise quotas less than other types of organizations. If the capture of Mutual Boards by insiders, described in the interviews, is important, however, the expected cost-limitation would not occur.

Standard models of producer cooperatives suggest they maximize net income per member, and as a result choose inefficiently high levels of output and investment to achieve this (Domar, 1966; Pauly and Redisch, 1973). In the Uruguayan context, where net income cannot be distributed, the expected behavior might take the form of increases in doctor remunerations and, as in the standard model, greater investment in equipment, which can be used to increase doctors' remunerations (for medical acts). Producer cooperatives would also be expected to limit outsourcing of services, in order

to increase payments for medical acts (unless, as interviews suggest, doctors outsource services to their other places of employment, where they expect higher remuneration).

Doctor's Cooperatives appear to be a "degenerate" form of producer cooperative (Abell, 1982), however, with members hiring non-member workers in a traditional employment relationship. Since hired workers cannot formally influence decisions, these "hiring" cooperatives may continue to maximize remuneration per *member*, but this will no longer be equivalent to maximizing remuneration per doctor-producer. The extent to which Doctors' Cooperatives are expected to behave differently from Union Cooperatives depends on their relative dates of degeneration, something that we cannot measure using our data. However, based on descriptions of the development of the sector, we expect a difference in behavior during the period under study.

Given the highly regulated context, we focus our analysis on four types of behavior that may vary across organizational type. The first three reflect differences in overall behavior: remunerations to doctors, investment in medical equipment, and outsourcing. A fourth behavior is the response to the liberalization of quotas 1984-1985.

Hypothesized differences with respect to remunerations can be summarized as follows: Union Cooperatives (traditional producer cooperatives) will spend relatively more on doctors' remunerations than Doctors' Cooperatives, as the Union Cooperatives seek to maximize remunerations per doctor⁸. Doctors' Cooperatives are expected to maximize revenue per *member*, which may mean limiting remunerations to non-member doctors and shifting work onto these employees, as member doctors restrict themselves to the best-remunerated medical acts, including those at other places of employment, possibly lowering remunerations to doctors overall. However, if interview evidence that Union Cooperatives and Doctors Cooperatives do not differ in their level

⁸ Where Union Cooperatives are the only non-profit health care provider in a department, the doctor-members will also be consumers. This will not be true for all Union Cooperatives. However, it may have an impact on behavior if doctor-consumers define quality as doctor quality.

of “degeneration” applies to the period 1983-1990, no differences are expected in doctors’ remuneration between Union and Doctors’ Cooperatives.

Because of uncertainty about how Mutual members define quality, Mutual behavior is harder to predict. Relative spending on doctors’ remunerations will depend on the extent to which Mutual members define quality as *doctor* quality, and whether remunerations are an effective means to attract such doctors. If Mutual members define quality mainly as doctor quality and higher remunerations attract doctors, Mutuals may not behave differently from Union Cooperatives. If Mutuals define quality as things like in-house provision of low piece-rates services, however, doctors’ remunerations in Mutuals will differ from those in Union Cooperatives.

With respect to investment, Union Cooperatives are likewise expected to invest relatively more in equipment than Doctors’ Cooperatives, investing in equipment needed for medical acts of members, but not investing in machines needed to “capture” medical acts for non-member doctors. However, if Union Cooperatives and Doctors’ Cooperatives do not differ in their level of “degeneration,” no differences are expected in investment between Union and Doctors’ Cooperatives. The behavior of Mutuals will depend, again, on how members define quality. Mutuals might spend relatively less on investment if it is not needed to attract high quality doctors or if members do not prefer in-house services (external services may be “higher quality”). If Mutuals are captured by insiders, as interviews suggest, this should result in relatively less investment.⁹

Another set of hypotheses relates to the outsourcing of services. In the Uruguayan context, where doctors are paid by medical act, Union Cooperatives are expected to outsource less than Doctors’ Cooperatives as they seek to maximize remunerations per doctor. Once more, Mutuals’ behavior depends on how quality is defined. They may

⁹ Examples of capture had to do mainly with contracts for consumables.

outsource more, if outsourced services are seen as higher quality. Or they may outsource less, if in-house services are seen as higher quality (a perception in-house doctors may use their position to defend).

Finally, we examine whether organization types respond differently to the liberalization of quotas in 1984. We expect that Union Cooperatives, maximizing remunerations, will raise quotas most, while Mutuels, where consumers are majority Board members, will raise quotas least. Doctors' Cooperatives, unconstrained by members, are expected to behave more like Union Cooperatives, more if they are "degenerate." Hypotheses are summarized in Table 4.

5) Analysis of the Uruguayan Case

In examining differences in doctors' remunerations, investment, and outsourcing of services, we normalize these expenditures as a share of total expenses. Because this risks introducing other, distorting, factors into our outcome variable--those affecting total expenses—we also did all of the analyses normalizing by number of affiliates, as a robustness check. Other than slightly reducing the significance of the regressions, the use the spending-per-affiliate measures does not change the results.¹⁰

Table 5 shows variation in the outcome variables across organizational type. As expected, Union Cooperatives and CASMU spend a larger share of total expenses on payments to doctors than Mutuels or Doctors' Cooperatives. As expected, Union Cooperatives also spend the least on outsourced services. However, for investment, we do not see the expected differences. Union Cooperatives (other than CASMU) have lower average levels of investment than Doctors' Cooperatives or Mutuels.

¹⁰Results available from authors.

Surprisingly, we see quite a bit of variation in quotas per member, although for most of the period quotas were set by the state. Figure 1 shows that this is not simply a result of differing responses to the liberalization in 1984-1985. Differences exist in every year, perhaps due to noise in membership data or a discrepancy between the dates that quotas are paid and membership is counted. Importantly, Figure 1 shows differences in the change in quotas per member during the 1984-1985 liberalization, especially in 1985, prior to the re-regulation, which was announced in advance.

In the regression analysis, we control for variables other than organizational form which might affect behavior. All variables are annual reported values for each organization. We control for size of organization (number of affiliates). Size may measure economies of scale in in-house service provision and affect outsourcing and also investment. Similarly, we control for capital stock (fixed assets, in constant pesos).

Different types of organization face different competitive environments. CASMU is located in Montevideo, so faces significant competition. Doctors' Cooperatives and Mutuels are never monopolies, but Union Cooperatives often are. These differences in competitive environment may affect organization behavior, and we control for this in two ways. To control for possible competition for affiliates, we include the number of other health care organizations operating in the same department. This varies from 0 in every year in many departments to over 30 in the early years in Montevideo. As a control for competition for doctors (the labor market for which faces a significant surplus in Montevideo but may face a shortage in less desirable areas), we include a dummy variable taking a value of 1 for Montevideo and the neighboring departments of Canelones and San Jose, and a 0 for all other departments¹¹.

¹¹ A Montevideo dummy might be preferable for capturing specific characteristics of this labor market (as will be discussed below). However, CASMU, a unique organization type, is located only in Montevideo, creating a collinearity problem with a Montevideo dummy. Dropping CASMU from the sample is an

The need for doctor visits and other services may increase with age, and some of the older organizations may have older affiliate populations. We control for the share of affiliates older than 65 years.

Finally, the sector was evolving in significant ways over the period 1983-1990, as an increasing share of the rural population was incorporated into the system, new organizations entered and matured, and smaller organizations were eliminated. To control for this, as well as cyclical economic impacts, we include a complete set of year dummies, with the first year, 1983, as the omitted category. When comparing the way the 1984-5 liberalization affects quota-setting across organizational types, we replace the full set of year dummies with an interactive variable. We inter-act organization type with a dummy for the year 1985 (the year of most change in quotas, seen in Figure 1).

Our variable of interest, organizational form, is measured as a set of dummy variables, with CASMU, the very large Montevideo Union Cooperative, as the omitted category. Means and standard deviations of these variables are presented in Table 6.

The econometric model takes the following form:

$$y_{it} = \alpha x_{it} + \beta z_{it} + \varepsilon$$

where y_{it} represents, alternatively, the four outcome variables used in the four regressions: Doctors' incomes, spending on outsourced services, and investment, as a share of current expenses, by organization, at time t , and change in quotas per member over the previous year, in thousands of constant pesos, by organization i , at time t , all for $t= 1983-1986$ and $1988-1990$. Because we estimate investment and change in quota per member using the year-on-year change in capital stock and quotas, these regressions do not include 1983, and 1984 becomes the omitted category for the year dummy.

alternative strategy. Dropping CASMU does not affect results regarding the behavior of other organizational types, so we include CASMU in the sample.

Further, we use the natural log of the investment share variable in the regression, in response to the extreme distribution of this variable (which ranges from -0.51 to 75.52).

x_{it} represents the set of dummy variables for organization type for each organization at time t , although no organization switches type between years; CASMU, the very large cooperative of the Montevideo doctors' union, is omitted, and

z_{it} represents the other explanatory variables for each organization at time t .

Capital stock and number of affiliates are clearly affected by the behavioral outcomes examined here—investment in one period affects the capital stock in the next, and number of affiliates will be affected by organization spending on doctors and investment. Here, we include capital stock and affiliates as independent variables to control for the impact of current levels on current year behavior. We estimate the regressions as Robust OLS regressions in STATA.¹² The regression results are presented in Tables 7 and 8. We begin by discussing Table 7.

The findings confirm that, controlling for differences in size, competitive environment, capital stock, patient demographic, and year, there are significant behavioral differences across organization type. One important finding is that CASMU, the omitted category of organization, behaves differently than any other type of organization. Compared to all other types of health care non-profit, CASMU spends a lower share of its expenses on doctors' pay and investment, and a greater share on outsourcing. Although we have attempted to control for the important differences in size and the competitive characteristics of location, perhaps these controls are imperfect. Because CASMU is a single cooperative, located in Montevideo, the CASMU organizational variable may be picking up specific characteristics of this location, in addition to organizational differences. CASMU has many possibilities for outsourcing,

¹² The Robust OLS regression in STATA uses Cook's D to select (and then drop) outliers. The use of the Robust Regression produces almost identical results to the standard OLS regression, but results in slightly higher levels of significance because of improved standard errors.

including to other clinics where CASMU doctors work, a practice mentioned by interviewees. This consideration may also drive decisions about investment. Desirability of employment in this large, well-located and well-endowed organization may limit the need to raise doctors' salaries to attract and retain doctor-members.

All three other organizational types spent a significantly larger share of expenses on doctors' remunerations than CASMU. As expected, spending in Union Cooperatives, which are predicted to maximize remunerations per doctor, was higher than in other forms. (The coefficient on Union Cooperatives is significantly larger than that on Doctors' Cooperatives and Mutuels at a level of $p < .001$.) However, spending on doctors' remunerations did not differ significantly between Mutuels and Doctors' Cooperatives. As suggested above, Mutuels may not seek to reduce this cost, preferring to spend more to attract high quality doctors. Spending on doctors' remunerations was negatively correlated with the number of competitors, as expected. Location in the Montevideo region was not significantly related to the share of doctors' remunerations in total expenses, except to the extent that the CASMU dummy picks up this effect.

Looking at outsourcing of services, Union Cooperatives (other than CASMU) again behave as expected. Union Cooperatives spend a significantly lower share of expenses on outsourcing of services than Mutuels and Doctors' Cooperatives (the coefficient on Union Cooperatives differs with a probability $p > .01$), perhaps in order to increase payments for in-house medical acts to member-doctors. Again, the small difference in the coefficients on the dummies for Mutuels and Doctors' Cooperatives is insignificant. After controlling for the behavior of CASMU, location in the Montevideo region is negatively related to outsourcing. Surprisingly, capital stock does not affect

outsourcing, controlling for other factors. Organizations with more members and with a greater share of members over 65 years outsource relatively less.¹³

Investment behavior also follows the expected pattern of significantly higher levels of spending by the Union Cooperatives, compared to Mutuels or Doctors' Cooperatives ($p < .01$). Spending more on investment may permit more medical acts by doctor-members. As with other behavior, the small difference between the coefficients on the dummy variables for Mutuels and Doctors' Cooperatives is not significant. Organizations with more affiliates spend more, although the effect is very small. Being in the Montevideo region and having a greater share of older members are also associated with more spending on investment. Year is significantly related to relative spending on investment, with a steady rise in the size of the coefficients over the entire period.

Finally, we consider whether the different types of organization behaved differently during the brief liberalization of quotas (Table 8). In this regression, we replace the year dummy for 1985 with an interactive variable, interacting 1985 with organization type. As might be expected, CASMU again behaves differently from all other organizational types, raising quotas the least. Among other forms of organizations, Union Cooperatives raise quotas the most, as predicted. The coefficient on Union Cooperatives is significantly different from that on Doctors' Cooperatives and Mutuels ($p < .10$ and $< .05$, respectively). Contrary to expectations, however, Mutuels do not raise quotas the least. The coefficient on the dummy for Mutuels is not significantly different from that on Doctors' Cooperatives. This suggests that the behavior of Mutuels may not be driven by consumers' interests. Perhaps, as suggested by interviews, the Boards governing Mutuels are often captured by insiders interested in selling (relatively high

¹³ This somewhat surprising result may appear linked to overall higher costs, which would increase the denominator of the dependent variable. However, as noted above, this result also holds when measuring outsourcing as expenditure per member.

cost) services or materials to the cooperative, thus preferring high quotas to cover such costs.

6) Conclusions

Using data on Uruguayan health organizations for the period 1983-1986 and 1988-1990, supplemented with interviews, we have examined the relationship between governance structures and behavior in non-profit health care cooperatives. We find some evidence that different types of non-profits behave differently, despite a tightly regulated environment with prices and wages set externally.

As suggested by the literature on nonprofit and cooperative behavior Union (producer) Cooperatives spend a larger share of total expenses on doctors' remuneration than Doctors' Cooperatives (a possibly more degenerated form of producer cooperative) and Mutuels, where consumers have broader interests, beyond raising doctors' pay.

In some cases, the theory on cooperative behavior does not predict outcomes, however. Mutuels, which are predicted to further consumer interests, did not raise membership fees less than other forms of organization during a brief price liberalization. Interview evidence, which provides additional information on governance structure, suggests that the behavior of Mutuels may be driven more by the interests of small groups of insiders than by those of consumer-members as a whole.

Another insight from the interviews, the possible importance of hired doctors in Union Cooperatives, suggested behavioral commonalities with Doctors' Cooperatives not seen in the data. This may be due to changes between the period of the survey and the time of the interviews (a gradual degeneration of Union Cooperatives since 1990), or perhaps the small interview sample of Union Cooperatives, where hiring non-member doctors was reported to be common, is not representative of Union Cooperatives as a whole.

The difference in behavior across organizations with differing governance structures provides support for recent efforts to develop more fine-grained predictions of behavior of non-traditional firms (Ben-Ner and Gui, 2003). It also suggests that empirical tests of behavioral differences between traditional and non-traditional firms will be more meaningful if the governance structure of non-traditional firms is common, and clearly specified. An important limitation of this study is our inability to control for the exact timing of degeneration of producer cooperatives, and this would be one important element of governance structure to consider in future data collection.

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Figures and Tables

Figure 1: Quotas Per Member, by Organization Type and Year, 1983-1986, 1988-1990

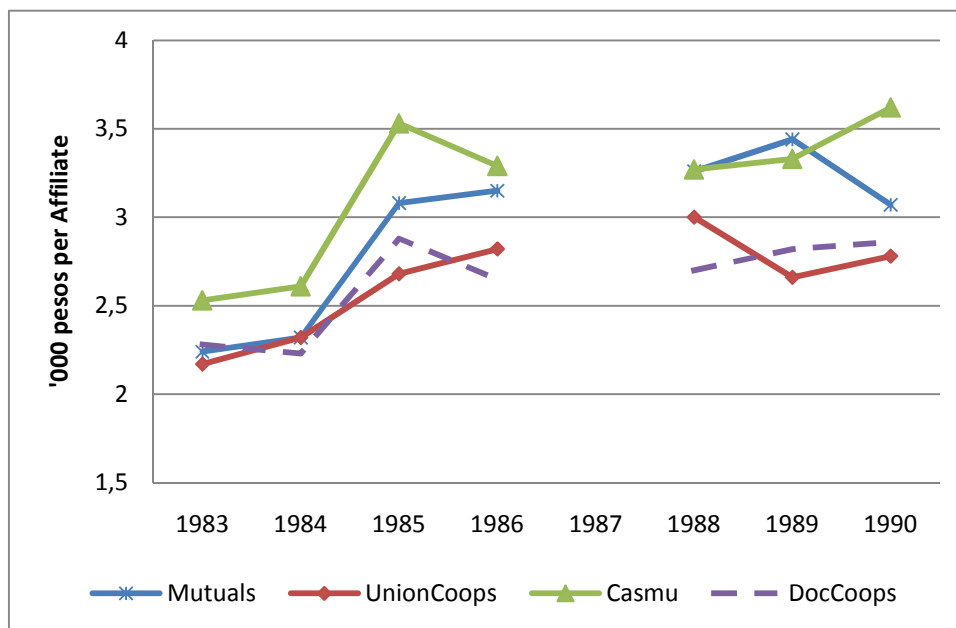


Table 1: Uruguayan Health Care Non-Profits, by Type and Year, 1983-1986, 1988-1990

Organization Type	Mutual		Doctors Coop		CASMU		Union Coop		Total	
	number	%	number	%	number	%	number	%	number	%
1983	23	37	16	26	1	2	22	35	62	100
1984	21	36	15	25	1	2	22	37	59	100
1985	13	28	11	24	1	2	21	46	46	100
1986	13	28	10	22	1	2	22	48	46	100
1988	13	28	10	22	1	2	22	48	46	100
1989	12	24	14	28	1	2	23	46	50	100
1990	12	24	13	27	1	2	23	47	49	100

Source: Uruguayan Ministry of Health, 1992.

Table 2: Uruguayan Health Care Non-Profit, Average Membership by Organization Type and Year, 1983-1986, 1988-1990

Organization Type	Mutual	Doctors Coop	CASMU	Union Coop
Year	Mean	Mean	Mean	Mean
1983	22,689	13,583	254,857	12,181
1984	20,580	14,050	250,081	13,031
1985	26,757	18,108	246,543	14,573
1986	31,478	19,501	264,820	16,646
1988	36,287	22,611	272,073	19,751
1989	38,887	16,793	273,512	20,653
1990	41,071	18,305	273,762	21,236
% Change	81	35	7	74

Source: Uruguayan Ministry of Health, 1992.

Table 3. Uruguayan Health Care Non-Profit, Average Capital Stock in constant pesos, by Organization Type and Year. 1983-86, 1988-1990

Organization Type	Mutual	Doctors Coop	CASMU	Union Coop
Year	Mean	Mean	Mean	Mean
1983	49,678	18,811	764,391	8,715
1984	76,497	33,772	1,280,509	16,700
1985	235,164	99,364	2,368,795	34,861
1986	420,013	191,707	3,880,892	65,659
1988	1,270,815	506,135	7,137,517	210,389
1989	2,458,861	708,279	15,500,000	455,308
1990	6,266,283	1,686,119	39,600,000	1,149,680
% Change 1983-1990	125	84	51	131

Source: Uruguayan Ministry of Health, 1992.

Table 4: Summary of Hypotheses

H1: Union Cooperatives will spend relatively more on doctors' pay than other forms of organization.
H1' : All non-profits will behave similarly.
H2: Union Cooperatives will spend relatively more on outsourcing than other forms of organization.
H2': All non-profits will behave similarly.
H3: Union Cooperatives will spend relatively more on investments than other forms of organization.
H3': All non-profits will behave similarly.
H4: Mutuels will raise membership fees least during liberalization; Union Cooperative most.
H4': Non-profits will respond similarly to liberalization.

Table 5. Remunerations, Outsourcing and Investment as % Total Expenses, 1986, 1988 and Quota per Member (in '000 pesos) by Organization Type. 1983

Type	Doctors' remunerations		Investment		Outsourced Services		Quota per Member	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Mutuals	0.30	0.08	3.65	0.20	0.20	0.11	2.82	0.84
Doctors Coop	0.28	0.08	4.67	0.23	0.23	0.11	2.59	0.74
CASMU	0.37	0.05	5.24	0.16	0.16	0.02	3.17	0.43
Union Coop	0.42	0.07	2.75	0.15	0.15	0.08	2.63	0.41
Total	0.35	0.10	3.41	0.46	0.46	0.10	2.69	0.66

Source: Uruguayan Ministry of Health

Table 6. Statistical Characteristics of Explanatory Variables

Variable	Mean	Standard Deviation
Share older members	0.112	0.091
Capital Stock	824891.100	3131471.000
Year '90	0.137	0.344
Year '89	0.137	0.344
Year '88	0.128	0.335
Year '86	0.128	0.335
Year '85	0.128	0.335
Year '84	0.165	0.371
Number of Competitors	11.904	12.198
Montevideo region	0.571	0.495
Number of Affiliates	25554.530	39531.010

Source: Uruguayan Ministry of Health.

Table 7. Regression Results. Behavioral Differences Across Health Organizations

Dependent Variables Explanatory Variables	Remunerations	Outsourcing	In Investment
Mutuals	0.116*** (0.035)	-0.319*** (0.040)	7.072*** (1.164)
Doctors Coop	0.108** (0.357)	-0.309*** (0.047)	7.203*** (1.250)
Union Coop	0.237*** (0.0540)	-0.385*** (0.050)	8.197*** (1.283)
Number of Affiliates	0.000*** (0.000)	-0.000*** (0.000)	0.000*** (0.000)
Capital Stock	0.000* (0.000)	-0.000** (0.000)	-0.000 (0.000)
Number of Competitors	-0.001* (0.001)	0.002* (0.001)	0.003 (0.028)
Montevideo Region	0.016 (0.014)	-0.035** (0.014)	1.106*** (0.276)
Share Older Members	0.097 (0.066)	-0.162* (0.094)	3.468** (1.192)
Year '83	omitted	omitted	-
Year '84	-0.012 (0.012)	-0.009 (0.018)	omitted
Year '85	-0.009 (0.014)	-0.010 (0.019)	1.060*** (0.300)
Year '86	0.008 (0.015)	-0.008 (0.018)	1.573*** (0.290)
Year '88	-0.003 (0.015)	0.016 (0.019)	2.822*** (0.337)
Year '89	0.014 (0.016)	0.018 (0.019)	3.383*** (0.330)
Year '90	0.015 (0.016)	0.020 (0.020)	4.201*** (0.310)
Constant	0.157*** (0.045)	0.578*** (0.056)	-1.079 (1.411)
Observations	338	338	263
R squared	0.507	0.236	0.717

Robust Standard Errors
in Parentheses

*** p<.001, ** p<.05, * p<.10

Table 8. Regression Results. Differential Response to Liberalization Across Health Organizations

Dependent Variable	Change in Quota
Explanatory Variables	per Member
Mutuals*1985	0.587*** (0.138)
Doctors Coop*1985	0.362* (0.139)
Union Coop*1985	0.693*** (0.111)
Number Affiliates	0.000 (0.000)
Capital Stock	-0.000 (0.000)
Number Competitors	0.008* (0.004)
Montevideo Region	-0.083 (0.084)
Share Older Members	0.111 (0.312)
Year '84	omitted
Year '86	- 0.075 (0.084)
Year '88	0.077 (0.084)
Year '89	0.029 (0.085)
Year '90	0.018 (0.090)
Constant	-0.053 (0.075)
Observations	280
R squared	0.209
Robust Standard Errors in Parentheses	
*** p>.001, ** p>.05, * p>.10	

Appendix: List of Interviews

- 1) Montevideo Doctors' Cooperative, Doctor
- 2) Colonia, Union Cooperative, Doctor
- 3) Colonia, Union Cooperative, Former Technical Director
- 4) San Juan, Union Cooperative, Technical Director
- 5) Montevideo, CASMU, Doctor
- 6) Montevideo, CASMU, Doctor, CEO
- 7) Montevideo, Mutual, Doctor
- 8) Montevideo, Doctors' Cooperative, Doctor, Technical Director
- 9) Montevideo, Mutual, Members of Board, CEO
- 10) Montevideo, Doctors' Cooperative, Doctor
- 11) Montevideo, Mutual, Doctor