Journal of Health Economics 48 (2016) 1–15

Contents lists available at ScienceDirect

Journal of Health Economics

journal homepage: www.elsevier.com/locate/econbase

Cost versus control: Understanding ownership through outsourcing in hospitals☆

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ARTICLE INFO

Article history:
Received 19 May 2015
Received in revised form 26 January 2016
Accepted 23 February 2016
Available online 11 March 2016

JEL classification:
I11
L24
L33

Keywords:
Hospitals
Make-or-buy
Public versus private
Nonprofit firm behavior
Outsourcing
Hospital ownership

ABSTRACT

For-profit hospitals in California contract out services much more intensely than either private nonprofit or public hospitals. To explain why, we build a model in which the outsourcing decision is a trade-off between cost and control. Since nonprofit firms are more restricted in how they consume net revenues, they experience more rapidly diminishing value of a dollar saved, and they are less attracted to a low-cost but low-control outsourcing opportunity than a for-profit firm is. This difference is exaggerated in services where the benefits of controlling the details of production are particularly important but minimized when a fixed-cost shock raises the marginal value of a dollar of cost savings. We test these predictions in a panel of California hospitals, finding evidence for each and that the set of services that private non-profits are particularly interested in controlling (physician-intensive services) is very different from those than public hospitals are particularly interested in (labor-intensive services). These results suggest that a model of public or nonprofit make-or-buy decisions should be more than a simple relabeling of a model derived in the for-profit context.

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If you want a thing done well, do it yourself.
– Napoleon Bonaparte

1. Introduction

An important decision faced by any organization is which activities it will engage in itself and which it will outsource. While for-profit firms' outsourcing decisions are (relatively) well-understood (Lafontaine and Slade, 2007), little is known about how nonprofit and public firms make these decisions. The outsourcing decision provides insight into the nonprofit sector, in particular, because the nonprofit may be ceding control to a firm less likely to share its mission. Research on hospital ownership often treats all service provision as within the firm, but rising costs make outsourcing attractive in the health care industry. In this paper, we analyze the make-or-buy decisions of public, nonprofit, and for-profit California hospitals, demonstrate robust differences among ownership types, and provide both a theoretically-grounded explanation for these ownership differences and tests of the proposed mechanism.

For-profit, nonprofit, and public hospitals in California vary significantly in the extent to which they outsource service provision. During 1996–2008, for-profit short-term general-care hospitals in California outsourced 25.7 percent of the non-physician costs of an average service to outside providers.[1] Nonprofits outsourced much less, 18.9 percent of the non-physician costs of an average service, across a range of both medical and administrative services. Balakrishnan et al. (2010) show that these differences in average outsourcing rates are robust to a number of controls for hospital and market characteristics. Given the size of the hospital industry

☆ We have received very useful feedback from Tom Chang, Mireille Jacobson, Richard Lindrooth, Jens Prufer, Michael Vlassopoulos and seminar participants at Appalachian State University, the Department of Justice, Clemson IO Workshop, UNC Chapel Hill, University of South Carolina, SEA2012, ISNIE/ESNIE 2012, and ASSA 2013.

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[1] The outsourcing rate is roughly defined as the percent of the total direct costs of a service which are from contracts with outside service providers. This is fully defined in Section 3.

http://dx.doi.org/10.1016/j.jhealeco.2016.02.003
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and continued health expenditure growth, these outsourcing levels are also economically important.

To analyze the differences in outsourcing among ownership types, we extend the model of nonprofit entrepreneurship by Glaeser and Shleifer (2001) to include an outsourcing decision. We assume that managers not only place value on net income (profits) but also place some value on controlling the exact manner in which a service is performed, either for their own intrinsic reasons, organizational incentives, or due to influence from some interest group (e.g. elite workers). When outsourcing is cheaper, control must be balanced against cost-minimization. Does a manager want more control or lower costs? In our model, managers in nonprofit firms have more rapidly diminishing marginal value of cost savings, because they are restricted in how they can use excess income (spending must be consistent with the hospital's nonprofit justification), and this restriction induces them to put different weights on these two characteristics than for-profit managers do. Coupled with an assumption that the outside producer has a comparative advantage in low-cost and low-control production, the assumption that the marginal unrestricted dollar of excess income has higher value than a restricted dollar implies that outsourcing is more attractive to managers of for-profit firms than similarly-situated nonprofit firms. These outsourcing differences are amplified when control over the manner of production is particularly important and dampened when a fixed-cost shock lowers net incomes.

We test these predictions on data from California hospitals with service-specific outsourcing measures and market characteristics over the period 1996–2008. For-profits outsource consistently more than private nonprofits, and public hospitals outsource even less than private nonprofits. These results are robust to the inclusion of controls for hospital size and scope, service-specific output, presence of a residency program, market characteristics, as well as service, year, and county fixed effects.

To investigate the importance of control, we divide hospital services into classes of differential managerial concern. For example, if elite workers are influential, controlling the manner of production in physician-intensive services like cardiology or emergency services may be more important, as compared to services that have little or no physician labor, like groundskeeping or parking. We also highlight labor-intensive services, since control of these services may be salient for public managers. We classify services as labor/physician intense by measuring the share of physician or labor costs as a percent of total direct costs within that service. Our prediction is that outsourcing differences should be most marked for services where control is particularly important to the manager. In line with this prediction, outsourcing differences between private nonprofits and for-profits are much bigger for physician-intensive services, while there is no significant difference for non-physician-intensive services. Public hospitals, by contrast, consistently outsource less than for-profits across both of these service classes. The pattern for labor-intensive services, however, is quite different. Labor intensity has no relationship with the private nonprofit outsourcing rates, but public hospitals outsource labor-intensive services much less than similarly-situated for-profits (or private nonprofits). Control of labor-intensive services is particularly important to public managers, but not to private nonprofit managers, which is exactly what our model predicts.

The model's third prediction is that a fixed-cost shock should cause nonprofits to look more like for-profits in their outsourcing decisions. We test this prediction by taking advantage of California's seismic retrofitting requirements, which hit different hospitals with very different retrofitting cost shocks depending on their local geography. Nonprofit and public hospitals that experience greater fixed-cost shocks outsource at rates which converge to that of for-profits. Nonprofit and public hospitals persist in outsourcing less compared with for-profits only if they experience relatively small fixed-cost shocks. This prediction is also complementary with the importance of control, in that the convergence of nonprofit and for-profit outsourcing rates for big fixed-cost shocks is most evident in physician-intensive and labor-intensive services.

This paper contributes to two literatures. There is a burgeoning literature on the "boundary of the organization" and how public entities provide services (Hart et al., 1997; Lopez de Silanes et al., 1997; Nelson, 1997; Brown and Potoski, 2003; Martimort and Pouyet, 2008; David and Chiang, 2009; Levin and Tadelis, 2010; Iossa and Martimort, 2012), but nearly every empirical investigation has focused on one ownership type. These studies cannot address what is essentially "public" or "nonprofit" about choices because they lack a control group of profit maximizers. Instead, they are comparative static in nature, analyzing how organizations adjust to changes in the economic or political environment. An important contribution of our work is that we can, first, identify divergence in outsourcing decisions among ownership types, and second, compare these differences across services and see how these differences respond to comparative static changes. Hospitals are a particularly apt organization to investigate, because the organizational forms span for-profit, private nonprofit, and various sorts of publicly-operated institutions. A handful of papers have taken advantage of this diversity. Coles and Hesterly (1998) touch on nonprofit and for-profit differences, but focus on how transaction costs influence which hospital services are outsourced. Balakrishnan et al. (2010) describe outsourcing differentials at the level of the hospital. We take their correlations as motivation, show that the large differences by ownership type are robust within services, and show that those differences are consistent with a model in which nonprofits are induced by nondistribution constraints to trade-off costs versus control at a different rate than for-profit firms do.

Second, there is a significant literature on the effects of nonprofit status on the behavior of firms, in general, and hospitals, in particular.[2] Sloan (2000) summarizes the particular effects present in the hospital context due to moral hazard and the consumer's asymmetric information. This literature is particularly concerned with the effect of ownership on the provision of service quality (Sloan et al., 2001; Picone et al., 2002; Eggleston et al., 2008), but also on the role of competition (Duggan, 2002), managerial compensation (Ballou and Weisbrod, 2003), and these characteristics combined with the question of what drives nonprofit behavior, more generally (Deneffe and Masson, 2002; Horwitz and Nichols, 2009; Chang and Jacobson, 2011; McClellan and Staiger, 2000). The paper most related to ours, both in context and approach, is Chang and Jacobson (2011), which looks at hospitals in California and also uses seismic retrofitting as an exogenous cost shock. While they are concerned with the broader question of what nonprofits "maximize," we have a much more specific goal of looking at one aspect of the production decision, outsourcing, to highlight an important difference in the way nonprofit firms conduct their affairs. We focus on outsourcing as a component of total production, but this is particularly relevant for answering the question of how mission and production decisions are made differently by ownership type. Outsourcing can have real effects on mission if there are significant elements of the service that are difficult to fully specify in the contract. We see our work as complementary to the literature, where (to use their terminology) we identify an additional dimension along which "perquisite-maximizing" nonprofits differ from their "profit-maximizing" kin.

[2] For a nice synthetic summary of the general issue of nonprofit behavior, see Malani et al. (2003).

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