Privatization and quality: Evidence from elderly care in Sweden ☆

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A R T I C L E I N F O

A B S T R A C T

Non-contractible quality dimensions are at risk of degradation when the provision of public services is privatized. However, privatization may increase quality by fostering performance-improving innovation, particularly if combined with increased competition. We assemble a large data set on elderly care services in Sweden between 1990 and 2009 and estimate how opening to private provision affected mortality rates – an important and not easily contractible quality dimension – using a difference-in-difference-in-difference approach. The results indicate that privatization and the associated increase in competition significantly improved non-contractible quality as measured by mortality rates.

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1. Introduction

Governments around the world increasingly rely on private contractors for the provision of goods and services.[1] One factor behind this trend is tighter budget constraints, and the hope of enjoying cost savings from the stronger incentives linked to private ownership and competition. However, precisely because of these stronger incentives, maintaining an appropriate quality level after opening to private providers may be a concern. For quality dimensions that can be verified at reasonable cost, degradation can be avoided by properly written and managed contracts. The risk of degradation is much higher for quality dimensions that are hard to verify, and hence not easily contractible. However, it is difficult to study the latter effect empirically: quality dimensions that are not contractible because they cannot be verified by third parties, i.e., courts, are also hard to measure for researchers.

In this paper we estimate the effect of opening to private provision a common service with important quality dimensions that are hard to contract upon: nursing-home care for the elderly.[2] As an outcome measure of quality we consider mortality rates, a performance indicator commonly used in the healthcare literature. Mortality was not included as an outcome measure in any of the several hundred contracts we have observed, most likely because it is too noisy at the contract level and to avoid inducing screening of residents. By studying the effects on mortality at the aggregate level we overcome the noise problem present at the contract level. By making the municipality the unit of analysis, rather than the individual home, we can also address the obvious selection effects that would otherwise risk biasing our results.

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[1] Public procurement from private contractors makes up 15–20% of GDP of developed countries and is on the rise (see, for example, http://ec.europa.eu/growth/single-market/public-procurement/index_en.htm).

[2] In Sweden, public sector procurement – including publicly held corporations that must adhere to the Procurement Act – is estimated at about SEK500 billion (€50 billion) per year, corresponding to 16 to 18% of GDP (Bergman, 2008).

We focus on non-contractible quality because it is crucial for many important goods and services and because we know little about it compared to quality in measurable and contractible dimensions.[3] Contractible quality can be more easily controlled by the buyer, so that stronger incentives should align quality more closely with the buyer's preferences. Non-contractible quality is harder to control for the buyer, and is affected by a number of interacting forces that make its reaction to the opening to private provision an inherently empirical question.

Opening to private provision may cause unwanted quality degradation in non-contractible dimensions because of the stronger cost-cutting incentives of private contractors. However, their stronger investment incentives may compensate, generating innovation that lead to the opposite outcome.[4] Opening to private provision also introduces competition, which we know can have negative effects on non-contractible quality dimensions.[5] But competition may also stimulate innovation and improve providers' management practices, which may increase non-contractible quality, in particular if price is regulated.[6] Also, as long as buyers have some discretion, they can react to non-verifiable quality signals, reputation, brand names, and long-term informal relations. This links future sales to current performance and may strengthen sellers' incentives to maintain high quality.[7]

Our empirical analysis is based on a panel of all Swedish municipalities over a period of up to 20 years. In this period about one third of all municipalities privatized – wholly or partially – the provision of elderly care services. We use data on mortality by age group (60 to 64, 65 to 69, 70 to 74 and so forth, with the oldest age group covering those aged 95 and over) and municipality characteristics (population density, educational level, share of immigrants in the population aged 65 and above) covering the period 1990 to 2009. For the latter half of the period we have access to municipal-level data on the average cost per person in sheltered permanent accommodation (nursing homes), total expenditures for nursing homes and, by age group, the number of residents. We then surveyed the municipalities to establish whether elderly-care services were exclusively produced in-house, or if provision from private providers had been used at all during the two most recent decades and if so, during what periods. The survey was undertaken in 2009 and we obtained answers from all but six of the 290 municipalities.

The focus on the municipality level, rather than on the contract or nursing-home level, allows us to estimate the joint effect on mortality of opening to private provision and introducing competition. That is, our estimates capture the overall effect of the privatization process – the combined effect of both competition, effective or potential, and private service provision – in much the same way as studies of educational markets that are opened up to entry by private schools. Our identification strategy makes use of the within-municipality variation in policy. However, as the decision to procure is a choice by the municipality, we need to acknowledge this in the analysis. To this end, we deploy difference-in-differences-in-differences (DDD) strategies. We compare the changes in mortality for municipalities that opened to private provision with corresponding changes for those that did not. To take into account possible differences in mortality trends among municipalities, and

the fact that privatization is a choice of the municipality, we compare changes in mortality within the population aged 70 and above with changes in mortality among those aged 60–69 years in the same municipality.

We find that mortality falls (by 1.6%) in the age groups affected by the introduction of private provision. The results correspond to an extension, by about four weeks, of the expected remaining two years of life upon admission to a nursing home. Privatization of elderly care services is also associated with a 1.7% reduction of the per-resident cost of service, but there is no reduction of total cost, suggesting that there is a balancing expansion in the number of beds.

The remainder of the paper unfolds as follows. Section 2 discusses the theoretical background and prior empirical research. Section 3 describes the characteristics of the elderly care industry in Sweden. Section 4 presents our data and reports some descriptive statistics. Section 5 describes our empirical approach. Section 6 presents our main results and Section 7 briefly concludes.

2. Theory and prior empirical studies

In this session, we first briefly review the theoretical literatures to which our study is related, then we discuss the closest previous empirical studies.

Contractual incentives. Opening to private provision introduces stronger incentives, both because of the characteristics of private providers and because of the introduction of competition. Holmstrom and Milgrom's (1991) classic study made clear that when non-contractible tasks are valuable, stronger incentives may backfire because they increase focus on observable, measurable tasks, crowding out effort on non-contractible ones. This argument 'per se' would predict lower non-contractible quality after privatization.

Hart et al. (1997) study a richer model focusing precisely on how the mode of public-goods production – in-house or by private suppliers – affects non-contractible quality provision besides innovation and cost efficiency, and achieve somewhat different results (see also Shleifer, 1998). They propose an incomplete-contracts model where a provider can make non-verifiable investments to increase (non-verifiable) quality or to reduce cost; the latter investment will, however, be associated with a fall in quality. An external supplier will be more prone to making both types of investments, but may tend to focus too much on cost savings, at the expense of quality. If non-contractible cost reductions have large deleterious effects on non-contractible quality and there is little scope for efficiency-enhancing innovation, then in-house government production may be preferred. Otherwise, provision by private suppliers should be preferred as it may lead to increased quality as well as lower costs.

Informal Relationships and Reputation. In standard market interactions, suppliers' incentives to degrade quality are also checked by the risk of losing future business. With repeat purchases, buyers may establish long-term supply relations, supported by threats to break those relations if the suppliers degrade quality (MacLeod, 2007; Malcomson, 2012). Absent repeat purchases, concerns over reputation, and brand-name value can still sustain quality provision (Bar-Isaac and Tadelis, 2008; Klein and Leffler, 1981). In the context of public procurement, however, these governance mechanisms are limited by accountability concerns (Kelman, 1990).[8]

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[3] Many previous studies on procurement, outsourcing and privatization seek to estimate cost savings, while also controlling for changes in contractible quality dimensions.

[4] Hart, Shleifer and Vishny, 1997.

[5] Spulber, 1990; Manelli and Vincent, 1995.

[6] Bloom et al., 2010, Spence, 1975.

[7] See, e.g., MacLeod, 2007; Klein and Leffler, 1981. However, for accountability reasons public procurement regulation typically limits buyer discretion and with it the scope for such informal governance mechanisms (Kelman, 1990).

[8] Although a public contracting authority may commit to such schemes (Calzolari and Spagnolo, 2009; Iossa and Rey, 2014), it may not be possible or desirable to give it the necessary discretion due to the risk of corruption (Banfield, 1975). Indeed, in many countries a contracting authority is, in principle, not allowed to discriminate in favor of strong brand names or providers that performed well in the past on non-