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Empirical test of quality shading in road maintenance contracts

Williamson (1975) posed the award-winning question of the *make-or-buy decision* i.e. if a firm should produce in-house or use the market. This dilemma can also be applied to public entities, which then translates to the question of supplying services with governmental personnel or engaging in public procurement. The latter is often chosen to provide and maintain infrastructure. A subsequent question is then the design of the optimal contract.

Contracting through public procurement has a comprehensive theoretical base, which also includes infrastructure issues. Although empirical work has been conducted, numerous theoretical projections are still in need of being addressed empirically.

This paper sets out to define cost-efficient contracting on road maintenance in an empirical way. The study is based on a Swedish panel data set of 123 contracts between 2001 and 2009. Maintenance contracts in Sweden are divided in different geographical areas, covering on average 750 kilometers of road, and use unit pricing in the procurement. A distinctive feature of Swedish road maintenance is the large budget share for snow-ploughing, salting and sanding (i.e. winter-maintenance).

The paper has, apart from providing new empirical results, two main contributions to the current bulk of literature. First, the contracting form is defined as a continuum between fixed price and cost plus. This is a better way of describing the contracts in comparison to the usual binary definition of different types of unit-price contracts.

Another problem with most empirical papers on infrastructure is the neglection of quality shading. Even if the private agents increase productivity it might be on the expense of quality. Hence, a comprehensive evaluation of contract efficiency must include both cost and quality measures. The second contribution of this paper is the inclusion of monthly incident reports as an indicator of quality, which also constitutes a testing of the quality shading hypothesis.