Procurement Contracts, Innovation and Productivity in the Construction Sector: Five Studies

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Academic dissertation

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Abstract

With its size, large number of actors, and its impact on everyday life, the construction sector plays an important role in every nation’s economy and in the improvement of the built environment. The recognition of this fact by the sector, in combination with the reputation for being conservative, problematic, having low productivity growth, and low pressure for change leads to a focus on different strategies that can be used to improve of the sector. Suggestions to improve the productivity in sector have been many during the years. One example is enhanced procurement contracts that encourage long-term orientations to improve the performance outcome and increase innovations.

This thesis consists of five studies with specific objectives. The overall objective is, however, to increase the understanding of how to enhance the conditions to improve the construction sector. This is a response to the concerns that the actors on the market have difficulties carrying out necessary measures to make improvements in the construction sector. Procurement contracts were studied in two ways; bundled procurement contracts with service as a key to create incentives for innovations (Paper II) and the difficulty in evaluating the effects of different procurement contracts because of unclear concepts (Paper I). Innovations were also studied in two ways: the importance for creating incentives for “good” innovations and how to open up for more transparency with respect to innovation (Paper III), and the direct and indirect effects a specific innovation have in the design choices of construction in profit-maximising firms (Paper IV). Policies are based on data and misleading data can lead to mistaken recommendations. Indications of measurement errors in the calculations of productivity have been reported which leads to an interest to increase the reliability of productivity calculations (Paper V).

The first paper has the focus to make the evaluation process easier, for the scholar, the actors on the market as well as for governmental institutions which formulate policies, by trying to make the relation between different contract types clearer with a new framework for structuring procurement contracts. The second papers are showing that bundling construction with service will not automatically increase profit for firms in the sector, rather that it might be an alternative way to transfer the risk in construction projects. Moral Hazard problems can also reduce the potential positive effects.

Paper III wants to shift the focus from the quantity of innovations to how incentives can nourish “good” innovation and suggests a new classification system for technical innovations. The objective is to achieve increased transparency and reduced information asymmetry in the construction sector. Paper IV takes it starting point in an indicated shift in developers’ planning and construction practices for laundry facilities in owner-occupied multi-family buildings. The mapping of the shift shows that a change in regulations can have an effect on how we build, and that developers are using spaces in innovative ways, which in turn can have unforeseen external effects. The finding indicates that even though the number of appliances has increased since the 1990s, the energy consumption has not necessarily increased during the usage phase, depending on the energy performance of the appliances and on user behaviour.

Paper V highlights the effects of including more rigorously and detailed gathered indicators of characteristics in the calculations of productivity development figures in the sector. By including more cost-driving characteristics, it should be easier to distinguish pure price changes from price changes related to increase in quality.

It is, important to bear in mind that there are several projects yearly that are delivered on time, within budget, with good quality and where innovations have been used. Seen against the background of this thesis, it can indeed be stated that improvements are needed if we intend to create an innovative friendly work environment that will contribute to productivity growth. However, the contribution here is also a warning that the evaluation tools that are used to describe the sector might not measure what we intend to measure.

Keywords: Procurement Contracts, Innovation, Productivity, Conduction sector, Incentives

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