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External Review of the Dissertation of Olena Senyuta - ”Essays in Industrial Organization”

The thesis submitted by Olena Senyuta contains three essays, the first two studying the economics of knowledge spillovers, the third one making a contribution to the study of delegation problems. I comment on the three essays in turn and then summarize my assessment.

The first essay (co-authored with Krešimir Žigič) uses the well-known Sutton framework to study the impact of spillovers. Firms are making investments in product quality, but cannot fully appropriate the returns to these investments. The authors show that when spillovers are exogenously given, their presence tends to lower the lower bound of market concentration and even eliminate it completely when spillovers are strong enough. Sufficiently strong spillovers may lead to a complete lack of quality-improving investments. The theoretical analysis allow the authors to derive a testable hypothesis, i.e., that with higher spillovers, concentration and its lower bound will be lower and the effectiveness of investment in raising quality will be lower.

In a second analysis, the authors allow for endogeneity – firms can now protect their investment against spillovers. Depending on parameter values (e.g., for spillover strength) various equilibria may arise, both without protection as well as with protection in equilibrium. The authors comment in detail on the differences between a model with exogenous spillovers and endogenous protection, deriving additional testable hypotheses.

Endogenous spillovers have not been analyzed in great detail in the economic literature, but the concept should have considerable interest for empirical applications and for deriving policy conclusions. Firms actively undertake protective measures, using a variety of legal (patents, trademarks, utility models) and managerial instruments (secrecy). The model developed here provides an interesting and solid foundation for studying these actions further.

The second essay also focuses on the concentration-market size nexus. It contributes an empirical study to the literature and employs data from the Mannheim Innovation Panel dataset. As is common in the literature, knowledge spillovers are treated as an input to the product quality of other firms. In practice, these effects may stem from practices such as reverse-engineering, common suppliers and consultants, labor mobility or different forms of collaboration between firms. The results presented in this essay first confirm the negative effect of ex post spillovers on R&D incentives. Conversely, ex ante spillovers impact R&D positively.

The author develops three hypotheses and then tests them in an empirical model using R&D intensity as the dependent variable. Results confirm that in the markets where R&D is highly relevant, markets tend not to get fragmented as market size increases. Obviously, the delineation of market size is problematic and subject to discussion as many of the firms responding to the survey are export-intensive. In industries where R&D is less important, the author finds that as market size increases, the probability that the market will be more fragmented also increases. The author comments in detail on how theoretical results can be employed to come to a correct interpretation of empirical evidence, e.g. regarding the role of spillovers via labor mobility. The chapter is a nice application of endogenous sunk cost theory to an important area in industrial organization and demonstrates the usefulness of the approach.

The third essay turns to the delegation problem which is also at the heart of any analysis of vertical integration. The issue has received great attention in economics. The chapter contains new empirical results regarding the relationship between organizational structure and an organization's performance. The author focuses on the banking industry as an important sector in which consolidation has been taking place over the past years, mostly driven by globalization. This led to the creation of large structures with low control spans and a high number of hierarchical layers. Substantial changes in regulation policies have also contributed to the consolidation of the industry. Most economists studying the banking sector agree that it has become more centralized. As a consequence, the locus of decision-making (e.g. for lending) has become more removed from the local context in which lending takes place.

Against this background, the essay tries to explore whether a higher extent of delegation in making lending decisions leads to increased or reduced performance. A particular empirical challenge lies again in endogeneity: delegation decisions are not imposed exogenously, but are the result of several forces and emerge partly from managerial decisions. The regression results presented by the author show that delegation has a positive effect on quantitative indicators of performance, but may reduce the quality of decision-making. Since the delegation variable is endogenous, the author experiments with various instrumentation approaches. Unfortunately, these lead to inconclusive results. Different types of instruments are shown to be relevant for the various delegation decisions. Clearly, the result that there may be a trade-off between quantitative and qualitative performance measures points to an interesting problem of bank decision-making.

In general, the candidate uses the modeling frameworks and empirical methodology competently. The dissertation thesis satisfies the formal and content requirements for a PhD thesis in economics. I recommend that this doctoral dissertation be admitted for a thesis defense.

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