PROPOSITIONS ACCOMPANYING THIS DISSERTATION:
Internal R&D, External R&D, and Firm Innovation
Evidence from the Pharmaceutical Industry

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1. Internal R&D investments by firms give rise to not only lag effects in the short run, but also a potential long-run effect in the knowledge production or innovation process. (Chapter 2)

2. A firm’s in-house R&D efforts act as a contingency variable that determines the condition under which there is complementarity or substitutability between various R&D strategies. (Chapter 3)

3. The optimal network structure of interfirm R&D alliances is contingent on the various types of a focal firm’s innovative output, i.e., new technology and new products. (Chapter 4)

4. Indirect ties maintained by firms in R&D alliance network, especially with their competitors, could cause risks and liabilities that may counteract or even outweigh the benefits from these ties as sources of information. (Chapter 4)

5. “The value of R&D is almost all option value.” (Myers, 1984)

6. Innovation has become the industrial religion of the late 20th century. Yet there is still much confusion over how to make it happen. (The Economist, 1999)

7. “Most innovators stand on the shoulders of giants, and never more so than in the current evolution of high technologies, where almost all technical progress builds on a foundation provided by earlier innovators.” (Scotchmer, 1991)

8. No one can pretend to be practically versed in a branch of knowledge and yet treat theory with scorn, without exposing the fact that he is an ignoramus in his subject. (Kant, 1793)

9. Knowledge valorization is an interactive process with a result: knowledge utilization (Rathenau Publications, 2013). The studies presented in this dissertation can be utilized not only for academic purposes but also for managerial practices in the business world.