Lingnan University 嶺南大學 香港 Hong Kong

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# Production Outsourcing and Innovation: Evidence from China's Pharmaceutical Industry

## ABSTRACT

This paper examines how removing barriers in production outsourcing affects firms' innovation activities. I exploit a reform in China's pharmaceutical industry that permits the outsourcing of drug production. Using a triple-difference identification strategy, I find that drug innovators without production facilities engage in more drug development (clinical trials) after the policy. However, for those firms constrained by limited resources, the increase in drug development is accompanied by a reduction in drug research (patent applications), particularly in low-value patents. This shift occurs because outsourcing increases the marginal value of development more than that of research. Further analysis reveals that the increase in clinical trials is more evident in the development of incrementally innovative drugs, rather than entirely novel ones. These findings suggest that overall, production outsourcing positively contributes to innovation, though its effects are primarily observed in incremental improvements.

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**TIME** 10:15am - 11:45am

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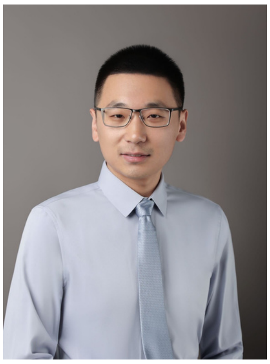
English



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## BIOGRAPHY

Shi Gu is a PhD candidate in Finance at Northwestern University, Kellogg School of Management. He received his bachelor's degree in Economics and Finance and his master's degree in Economics from Tsinghua University, School of Economics and Management. His research focuses on corporate finance, entrepreneurship, and innovation. His paper received the Best Paper Award at the Southern Finance Association Annual Conference 2024.

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