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Overseas R&D in Chinese innovation companies: the role of national and firm-level influences

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The paper uses a unique dataset to analyse an important interaction between two significant trends in the development of Chinese enterprise. Firstly, the emergence of a major strategic commitment to innovation in many of these firms. Secondly, the growing internationalisation of important facets of their competitive evolution. Thus many of these companies now support their innovation programmes through R&D operations located in foreign countries. Traditional views of R&D in MNEs would suggest two roles for such operations. Firstly, to extend the competitiveness of products newly innovated in China into foreign markets by facilitating their transfer, assimilation and adaptation to local needs and conditions. Secondly, to be a part of the primary innovation process itself, by contributing research capacities and creative inputs. The ability of the second to play a role in the knowledge-driven development of China's industrialisation is a key theme of the paper.

The dataset provides extensive information on 466 innovation-oriented Chinese enterprises. This provides the analysis with a range of variables that allow us to build hypotheses with regard to whether or not a company has R&D outside China and, if so, the nature of their contribution to innovation.

An important influence in the innovation companies is the extent to which their creative and knowledge generation programmes are understood, authorised and supported (financially or institutionally) by the Chinese Government. Several pieces of information in the dataset allow the creation of proxy variables for the degree of government approval, recognition or support of the companies' programmes. We hypothesise positive relationship between these variables and overseas R&D (OR&D). Thus government interest in the company's work is likely to derive from an expectation of the generation of innovations/technologies that can provide spill-over gains into China's development. These more extensive knowledge ambitions and scopes are more likely to benefit from a wider range of sources, and notably from OR&D.

Another dimension of interaction of these companies in China is the presence of scientific collaborative arrangements (including with other firms- joint ventures- or with universities). The data documents the extent of these. We hypothesise that the more able and willing a firm is to tap into diverse R&D contributions the more likely it is to have labs in other countries.

The data provides a number of measures of the degree of industrial diversification of the companies. We hypothesise that the more diverse a firm is the wider the range of knowledge sources it will seek to expand into and the more likely it is to have OR&D. A key theme here is the importance of the innovation sought or secured. Chinese firms making mainly routine or evolutionary innovations would need limited OR&D

to secure their diffusion. Firms systematically targeting more revolutionary innovations, based on more radically new technologies, are more likely to incorporate OR&D to access these. Various measures of extent and quality of innovations allow us to test this hypothesis.

The study will incorporate other aspects of the Chinese firms, either as direct influences or as control variables. These include sales and sales growth, value-added, employment, R&D budgets, structure of scientific personnel (level of qualifications, etc).

This investigation of the globalisation of a vital aspect of the development of leading Chinese enterprises will make significant contributions to understanding their own evolution and how this can be seen as integral to the competitive progress of the Chinese economy.

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