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# Introduction to the special issue on firm performance and worker heterogeneity using Chinese Employer-Employee Survey (CEES) dataset

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**ABSTRACT**

The Chinese Employer-Employee Survey (CEES) is the first dataset that links firm performance with worker heterogeneity in China, and therefore is a precious data resource for various research topics. This note introduces the CEES dataset, as well as seven papers that serve as the initial step in applying the CEES dataset. The topics covered include interaction between firm-level behavior and worker-level features, for example, firm innovation, quality upgrading, government intervention, worker's cognitive and non-cognitive abilities, and labor protection. The ample information documented by CEES dataset is worth exploring in the future research agenda.

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In the last decade economists have witnessed a surge in the economic research using highly disaggregated micro-level dataset from both developed countries and developing countries. Briefly, the micro-level dataset can be classified into two categories: firm-level production survey data and worker-level income and education data. Today, the manufacturing firm-level production data and related transaction-level data are available not only in most OECD countries such as the Canada, France, Japan, and the United States, but also in some developing countries including Argentina, China, India, Indonesia, and Mexico. Similarly, the worker-level income and education data are also available, even in developing countries like China.

However, to my knowledge, the matched datasets with firm performance and worker heterogeneity are rarely available today. Indeed, only few small rich countries such as Denmark have such an employer-employee survey dataset. Generally, the matched employer-employee datasets are not available in large OECD countries such as the United States and Japan. Needless to say, such data are rare in developing countries.

A million thanks to the colleagues at the Institute of Quality Development Strategy at Wuhan University and their collaborators for their great efforts and tremendous work, now the employer-employee survey (CEES) datasets are available for China, the second largest economy and the largest trading country in the world. Wuhan University conducted a comprehensive survey for 530 firms and more than 1000 workers in

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Guangdong provinces in 2015. It includes more than 500 variables on firm's characteristics, including not only many firm's financial variables as shown in the standard accounting sheets but also many variables on product quality, technology innovation and transformation, and human resources. Regarding worker heterogeneity, the dataset includes variables on employee's personal information, income, education, and health. Thus, the novel and unique employer-employee matching datasets are ideal to conduct many related research projects.

With such motivation and warm support from Professor Yiping Huang, the editor of the CEJ, Peking University and Wuhan University work together to have a special issue of CEJ to introduce and promote the CEES dataset. This special issue includes seven papers as an introduction and application to the CEES dataset. Five papers use firm-level variables and two papers use worker-level variables in the CEES dataset. I will introduce them one by one in the rest of this note. But it is important to stress that the entire dataset has even more rich information than those already used in the papers covered by this special issue.

How international trade fosters firm innovation is crucial in understanding firm productivity growth. The CEES dataset provides rich information on firm innovation. Dr. Wei Tian and her co-authors use the Chinese Employer-Employee Survey data set to explore the nexus between firm productivity and firm innovation. They first document several stylized facts characterizing the interaction between international trade and innovation among Chinese firms. Using this novel datasets, they find strong evidence that is consistent with the literature: Both exporters and importers are exceptional in production and innovation. More interestingly, exporters are more inclined to import material and machinery inputs. By contrast, domestic and private firms do not seem to be more innovative than their counterparts.

The CEES dataset also has very rich information on quality of products. As China's labor cost increases dramatically after the global financial crisis in 2008, it is essentially important to understand how the rising labor cost affects firm's production behavior. Using the China Employer–Employee Survey data, Dr. Dandan Li and her co-authors investigate the impact of rising labor costs on firm's quality upgrading. They first provide strong evidence that unskilled labor has a higher wage growth rate than the skilled labor. Moreover, firms with higher product quality employ more skilled labor, and thus are less affected by the increasing labor costs. The empirical results offered by Dr. Li and her co-authors suggest that some of the low-quality firms should upgrade their quality to a higher level to offset their labor cost increase.

It is also interesting to take one step forward to consider how China's macroeconomic policy affects manufacturing firms' performance after the financial crisis. This is exactly the research topic picked up by Dr. Tang Li and his co-authors. Using the CEES dataset, they examine the actual effect of quality-driven growth on the firms' performance. Their results show positive and significant correlation between the firms' performance and the quality-oriented growth, which is defined as higher entrepreneurial innovation spirit, the advancement of input quality, and corporate governance improvement.

By the same token, Dr. Hongwei Yu and his co-authors aim to understand the divergence of Chinese manufacturing enterprises profitability. They first measure and explore the profitability of Chinese manufacturing enterprises based on data from the

2015 Chinese Enterprises–Employees Survey (CEES 2015), and find that overall profitability is divergent. They argue the main reason for such profitability divergence is due to firm's different strategies in innovation, diversification, and market development.

The CEES data also have rich information on whether firms are subjected to intervention by local or central government. Indeed, over 70% of the manufacturing firms received at least one type of government paternalistic care, though the distributions are different depending on the firm size, ownership, industry, firm and entrepreneur's age. Professor Hong Cheng and his co-authors examine whether and how government paternalistic care exerts positive effects on entrepreneurship in China. They find that government paternalistic care hampers entrepreneurship by diminishing innovation capability. Regarding the channel, the authors argue that human capital and imported intermediate goods are the two most important driving forces for firms' development, but government paternalistic care has a counterproductive effect on those two factors, thereby harming the entrepreneurship.

In addition to a number of variables on firm performance, it is worth to stress that the CEES data also contain a number of sets of worker's information, which are fantastic for many related research projects. For example, Dr. Fan Yu and his co-authors examine the heterogeneous impact on wages between workers' cognitive and non-cognitive abilities. They find that the cognitive and non-cognitive abilities of female and unskilled workers have a weaker impact on their wages, as compared with those of the male and skilled workers. The Mincer wage estimation results suggest that the impact of cognitive abilities on wages is generally smaller than that of the non-cognitive abilities.

Finally, Professor Hong Cheng and his co-authors offer a compressive report on collective and individual labor rights in Chinese manufacturing firms. They find that the overall protection level of collective labor rights in Chinese manufacturing firms seems to be evident: around two-third of firms offer labor unions and engage in collective wage bargaining. Equally interestingly, the authors do not find evidence of discrimination based on demographical characters such as gender, Hukou, and education level for employees' individual labor rights.

Again, the CEES dataset is a treasury for both economists and policy makers for future research. Its impact will become more and more important and evident for years to come.

## Disclosure statement

No potential conflict of interest was reported by the author(s).