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The declining share of agricultural employment in China: How fast?

Jesus Felipe[a,*], Connie Bayudan-Dacuycuy[b], Matteo Lanzafame[c]

[a] Economic Research and Regional Cooperation Department, Asian Development Bank, Manila, Philippines
[b] Economics Department, Ateneo de Manila University, Quezon City, Philippines
[c] Department of Economics, Management, Environmental and Quantitative Methods (SEAM), Università degli Studi di Messina, Italy

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ABSTRACT

Between 1962 and 2013, China's agricultural employment share declined from 82% to 31%. The transfer of workers out of low-productivity agriculture is a fundamental pillar of China's aspirations to progress and eventually become a high-income economy. We hypothesize that the drivers of this decline have been the increase in income per capita, industrial value added, foreign direct investment and domestic credit. We use an Autoregressive Distributed Lag Model to test the strong exogeneity of the regressors. This is confirmed by the data and hence we use our model for forecasting. Results indicate that the share of employment in agriculture in China will decline to about 24% by 2020, the end of the 13th Five-Year Plan (2016–2020). We also estimate that China's employment share will reach 5%, the share observed in today's rich economies, by 2042–2048.

1. Introduction

The purpose of this paper is to model the determinants of China's agricultural employment share, and use them to forecast this share up to the year 2020, the end of the 13th Five-Year Plan (2016–2020). We also ask when the share will become 5%, about the same as in most high-income countries today. This exercise is relevant for four related reasons. First, the share of employment in primary agriculture was still 31% in 2013 (about 240 million workers) and, until recently, this sector was the country's largest employer (Fig. 1). China's aspirations to become a high-income economy will be reflected in, among other things, a much lower share of agricultural employment.

Second, the Chinese Communist Party (CCP) set an ambitious reform agenda for the 12th Five-Year Plan (2011–2015) and the reforming process is expected to continue during the 13th Five-Year Plan (2016–2020). Planned reforms include increasing the role of markets in resource allocation, modernizing the tax system, relaxing and eventually eliminating the *hukou* system, and creating an open-door policy (i.e., allow the international mobility of productive factors).[1]

[1] Employment-related questions are at the center of the reform agenda approved in November 2013 by the 18th National Congress of the CCP. In the Spring of 2014, China's top economic planning body gave the first steps toward preparing the 13th Five-Year Plan covering 2016-2020, which will decide how to implement the ideas discussed in the 18th National Congress. There is agreement that China needs to change its growth model into one that is less capital- and energy-intensive, yet it needs to continue achieving high growth rates to generate employment in industry and services to absorb 240 million agricultural workers. This was reflected clearly in 2013 recent speech by Premier Li Keqiang (Hongbin and Xiaoping, 2013).

* Corresponding author. Tel.: +632 6326629.
E-mail addresses: jfelipe@adb.org (J. Felipe), cbayudan-dacuycuy@ateneo.edu (C. Bayudan-Dacuycuy), mlanzafame@unime.it (M. Lanzafame).

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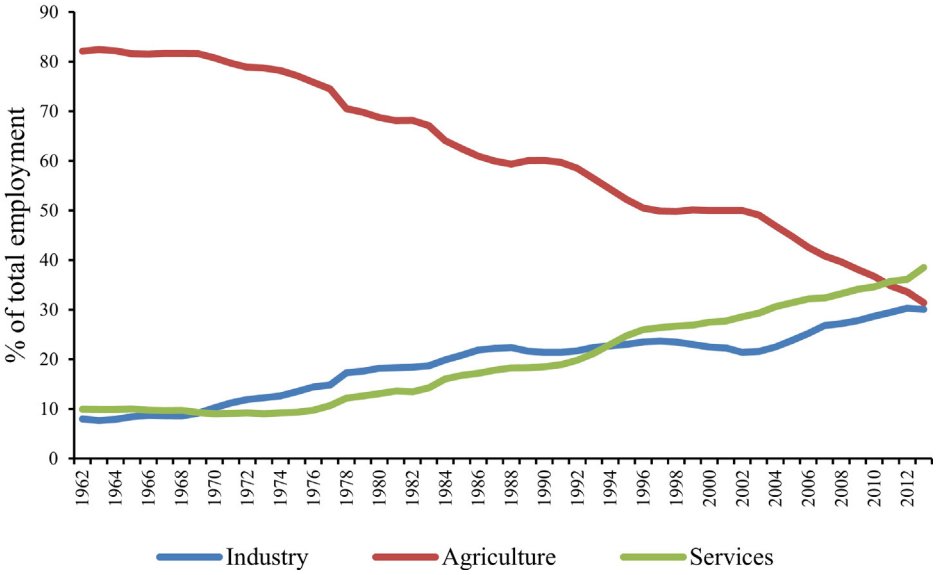

Fig. 1. Sectoral employment. Authors' calculations based on data from Comprehensive Economic, Industry and Corporate Data (accessed August 1, 2014). Industry refers to the secondary sector: manufacturing, construction, mining and quarrying, and utilities.

Third, this paper is related to the debate on whether or not China has reached the Lewis Turning Point, that is, the stage of development where the agricultural surplus labor disappears, and labor shortages and wage increases come about. Authors such as Cai and Wang (2008), Das and N'Diaye (2013) or Zhang et al. (2011) argue that China has already crossed, or it is about to cross, the Lewis Turning Point. On the other hand, Minami and Ma (2010) argue that there are no signs that the gaps between rural-urban incomes and between skilled-unskilled wages are narrowing, while Yao and Zhang (2010) showed that an increase in the demand for labor in China does not lead to an increase in the wage rate; both taken as signs that China has not crossed the Lewis Turning Point. Finally, there are studies that argue that the existence of surplus labor in rural areas is compatible with increasing rural migrant wages in urban areas, as a result of labor market segmentation and of constraints on rural-urban migration (Knight et al., 2011); or as a result of government policies such as the abolition of agricultural taxes, the granting of direct price subsidies to agricultural products, or the increase in urban minimum wages (Golley and Meng, 2011). Data show that China's agricultural employment level was still increasing up to the mid-2000s, although the share in total employment had been declining for a long time (Fig. 1).[2] From 2008 onward, both the agricultural employment level and the share have been decreasing. Our results offer insights that help understand the drivers of China's agricultural employment and, therefore, contribute to this debate.

Finally, labor in traditional agriculture operates at much lower productivity levels than in other sectors (Herrendorf and Schoellman, 2012). Indeed, as Fig. 2 shows, labor productivity in China's agricultural sector is substantially lower than in industry and services.[3] Moreover, as productivity growth is slower in agriculture, the gap with the other sectors has been widening significantly, particularly since the early 1990s.[4] Therefore, and as noted above, the speed at which the transfer of labor out of agriculture takes

[2] While in India, for example, the agricultural employment share is declining but the absolute number of workers in agriculture is still increasing.

[3] Wong (1987) argues China's labor productivity was very low during 1964 -1973, the period during which the commune movement and Cultural Revolution were at their peaks. China ran into economic and political difficulties in 1957. The Communist Party decided to launch the "Great Leap Forward" in 1958. One objective behind it was to significantly increase (double in many cases) both industrial (steel sector in particular) and agricultural production in a short period of time. A second objective was to introduce a new form of human organization, the commune, supposed to dismantle the traditional Chinese family, as well as to accelerate the country's modernization. During 1958, the rural population (and part of the urban population) was swept into about 26,000 giant communes, each containing 5,000-65,000 people. Commune labor was used for a combination of farming and non-agricultural tasks and great masses were used for irrigation and dam-building projects. The commune system did not achieve its objective of providing the base for rapid agricultural improvement. Food shortages appeared in 1959-1960, leading to famine and massive imports of food grains from Canada and Australia. Apart from bad weather, mismanagement and low morale also contributed to the problem. The Great Leap Forward ended in 1961. We are also grateful to a referee for pointing out that during Mao's days, the objective was to improve land productivity in agriculture. This is consistent with Lewis (1978): "..the only way to avoid mounting urban unemployment is to persuade more people to remain in the countryside. . .our agricultural economics is based on the assumption that numbers in agriculture will decline as economic development proceeds; our policies are therefore set towards helping to reduce the number of men per acre. Instead, we shall need for the next three or four decades agricultural policies aimed at absorbing more men per acre." (p. 241)

[4] China experienced rapid population growth during the 1960s and the 1970s. Tang and Stone (1980) document that "China's rural population increased from approximately 500 million in 1952 to 780 million in 1977, which added 150 million workers to China's agricultural labor force during 1950-1983" (p. 43). This resulted in labor-intensive farming.