



Off-farm employment and time allocation in on-farm work in rural China from gender perspective



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ABSTRACT

This paper sheds light on how the growing number of off-farm employees affects the labor allocation of female and male left-behind farmers in the Chinese agricultural sector. We find no direct effect of off-farm employment on left behind workers' total working time in farming, nor do we observe a gender difference in this respect. However, we do find that increasing off-farm work is associated with fewer days worked on staple crops, and in the harvesting and sales stages of the production process. Hiring labor and buying agricultural services also impact left behind workers' time allocation. Moreover, we find that in China, contrary to several other developing countries, there is no trend towards a feminization of agriculture, but rather a tendency in the reverse direction.

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1. Introduction

Rapid development of industrialization and urbanization has created growing off-farm employment opportunities for the agricultural households, and as a consequence, more and more farmers have moved to work in off-farm employment. Thus, there have been unprecedented changes in the allocation of agricultural households' labor between the agricultural and non-agricultural sectors. Several studies document that off-farm employment has reduced the labor input in agriculture (Pfeiffer, López-Feldman, & Edward Taylor, 2009; de Brauw, 2010).

The focus of this paper is on how the increase in off-farm employment affects the time allocated to farming and components thereof by the left behind members of households in rural China. We also examine whether the impacts differ between men and women.

The reason for the growth in off-farm employment in rural China is straightforward: the worker moves when her/his contribution to the household income is higher in off-farm employment than if s/he stays and works on the farm. Earlier studies (e.g., Cai & Wang, 2010) have shown that Chinese farms have been overstaffed and hence, at least the first movers to off-farm jobs are likely to add more to the household's total income than the value lost by their absence in production on the farm.

The income from outside sources can also be used to pay for hired labor, to invest in fixed agricultural capital and for buying agricultural services from local firms. These additional factors of farm production can increase further the value of a household member's off-farm income relative to value of working at the farm, and hence, lower demand for their labor input at the farm.

Traditionally female farmers have made large contributions to agricultural output, but there have also been some differences in the type of tasks performed by males and females (Alesina, Giuliano, & Nunn, 2013; Hansen, Jensenz, & Skovsgaard, 2015). Thus,

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males do physically heavy tasks like plowing or loading up harvest for transportation, whereas females do other less heavy but time intensive tasks related to cultivation and harvesting. Moreover, females are mainly responsible for the production of non-staple crops. The traditional division of labor means that men as household heads are in charge of management and sales.

Due to strong traditional gender roles, male members of rural household have had more options to work outside the farm. Several studies have found that women are less likely to participate in off-farm work than men and hence they are more likely to be left-behind and to spend more time working in agriculture (e.g., Fan, 2003; Mendola & Carletto, 2012). Originally, the majority of off-farm jobs were typically “male jobs” (in manufacturing) and consequently the increase in off-farm employment meant an increase in the absence of male workers from the farm. More recently, economic development, and in particular the expansion of the services sector, has increased also the off-farm employers’ demand for female workers, and for young female workers in particular (Zhang, de Brauw, & Rozelle, 2004). Women’s status in agricultural households is by tradition inferior to that of men, and so, it is possible that females’ time allocation will be affected differently than that of men.

A trend towards an agricultural feminization has been documented for other developing countries, such as in studies of a number of African countries (Lokshin & Glinskaya, 2009; Stecklov, Carletto, Azzari, & Davis, 2010; Palacios-Lopez, Christiaensen, & Kilic, 2015) and Mexico (Amuedo-Dorantes & Pozo, 2006), and it is often attributed to the changed status of women in households’ decision-making and changes in labor market discrimination by gender. Notably, studies for China by Zhang et al. (2004), de Brauw, Li, Liu, Rozelle, and Zhang (2008) and de Brauw, Huang, Zhang, and Rozelle (2013) found that agriculture has in fact been gradually defeminized since the mid-nineties.

Recent empirical research of the impact of off-farm employment on the labor reallocation of left-behind females in agricultural households has attracted widespread attention. According to these studies, off-farm employment has led to left-behind household members increasing their time spent in on-farm work and this has been especially pronounced for the left-behind women (Amuedo-Dorantes & Pozo, 2006; Binzel & Assaad, 2011). Démurger and Li (2012) and Mendola and Carletto (2012) find evidence of household members with migration experience playing a significant role in inspiring the left-behind women to work as self-employed rather than in on-farm and domestic work. Some empirical studies have also shown that there is a gender difference in the time allocation of the left-behinds (Mu & van de Walle, 2011). Using data of CHNS from the period of 1997–2006, Chang, MacPhail, and Dong (2011) find that the impact of off-farm employment differs by gender. The increase in working time has being greater for elderly women and young girls than for elderly men and boys. Other studies have looked at the empowerment of left-behind females, their farming burden and leisure time (Wang, 2013; Murard, 2015). On the basis of these empirical studies, it has been concluded that off-farm employment has contributed to the trend towards feminization of agriculture. However, it should be noticed that these studies have only to a limited extent examined actual changes in the agricultural labor input by gender in the context of increasing off-farm employment.

This paper takes a closer look at the link between off-farm employment and the left-behinds’ time allocation in agricultural labor input by gender in rural China. To the best of our knowledge, there are three earlier papers related to our analysis: Mu and van de Walle (2011), Chang et al. (2011), and Démurger and Li (2012). These studies suggest that increasing off-farm employment is associated with a feminization of agriculture. However, they do not examine how the impact of off-farm employment on agricultural feminization differs with respect to different farming activities. In addition, with the notable exception of Meng, Zhao, and Liwu (2014), previous studies do not account for the joint decision nature of the labor allocation of females and males in the household. Treating spouses’ time allocation in agriculture as completely independent decisions appears to be a rather strong and unappealing assumption.

Hence, this paper contributes to the literature in two ways. Firstly, we will explore whether the feminization of agriculture varies with respect to time allocated to farming of different types of crop production (staple crops and other crops) and to different stages in the farming process (cultivation, management of the farm, harvest and market sales). Secondly, we estimate the determinants of time spent on on-farm work within the framework of a joint decision model by left-behind female and male farmers. By exploring the effect of off-farm employment on female and male labor supply in the agricultural sector, this paper also contributes to the literature of gender equity and the welfare of women in the Chinese farming sector.

The remainder of the paper proceeds as follows. Section 2 provides a brief description of the data used. This is followed by a descriptive analysis of the recent situation and trends in off-farm employment and time spent in agricultural work by gender in Section 3. Section 4 describes the econometric methodology used in the analysis of the impact of off-farm employment on the joint decision on time allocated to on-farm work by females and males. Section 5 presents the results while Section 6 concludes.

2. Data description

We employ two datasets, both of which were collected by the Center for Chinese Agricultural Policy (CCAP) of Chinese Academy of Sciences (CAS). The first dataset is the China Hundred Villages Survey (CHVS) which was collected as a random, nationally representative sample of 101 rural villages in five provinces (Jiangsu, Sichuan, Shaanxi, Jilin and Hebei) in years 2005, 2008 and 2012. For more details on the exact method of sample selection and survey process, see Zhang, Zhang, Rozelle, and Boucher (2006) and Li, Huang, Luo, and Liu (2013).

This dataset provides detailed information on households’ demographic and socioeconomic characteristics, and individuals’ job occupations and employment histories during the year preceding the survey. In our analysis we include all working-age men and women who are not in school, retired or disabled. This yields a final sample size of 781 households for 2005, 1935 households for 2008, 1982 households for 2012, respectively.

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