Non-Farm Activity, Household Expenditure, and Poverty Reduction in Rural Vietnam: 2002–2008

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Summary. — Diversifying into non-farm activities has been suggested as an effective way out of poverty for rural households in developing countries. Using the Vietnamese Household Living Standards Surveys of 2002, 2004, 2006, and 2008, we test this claim, and investigate the effect of non-farm sector involvement on poverty and expenditure growth. Our endogeneity-corrected estimates show that an additional household member involved with non-farm activity reduces the probability of poverty by 7–12% and increases the household expenditure by 14% over a two-year period. Our findings also indicate that non-farm involvement reduces the hours worked on farm but not the household agricultural income.
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Key words — non-farm activity, poverty, expenditure, instrumental variable estimation, identification through heteroskedasticity, rural Vietnam

1. INTRODUCTION

Agricultural households derive their incomes from land, labor, and capital. However, in developing countries, rural households face small amounts of land per capita and constrained credit opportunities, resulting in a labor surplus in the sector and restricted access to the latest technology for capital investments. Moreover, the income from agriculture, and the prices of agricultural products, are variable and associated with risk and uncertainty. All these factors point to non-farm activities as an important instrument for generating rural welfare, reducing poverty, and absorbing the growing agricultural labor force (Kung & Lee, 2001; Lanjouw & Lanjouw, 2001; Mishra & Goodwin, 1997; Ranis & Stewart, 1993).

An expanding body of literature explores the role of rural diversification, together with the associated incentives and mechanisms, in poverty reduction in developing countries. Ferreira and Lanjouw (2001) argue that in Brazil diversifying into non-farm activities provides additional income for the poor, and acts as a self-insurance tool against negative shocks. In the case of Nigeria, Oseni and Winters (2009) find that participating in the non-farm economy helps agricultural households to overcome credit constraints and reduce risks. This, in turn, improves farm production and assists with consumption smoothing. Emran and Hou (2013) demonstrate that in the case of China, the poor's ability to access the broader market fosters poverty alleviation and economic development. However, the poor may face entry barriers to participating in non-farm activities. It has been argued for several developing countries that non-farm activity requires skilled labor or relatively high levels of education (Cherdchuchai & Otsuka, 2006; Kijima, Matsumoto, & Yamano, 2006; Lanjouw, 1999; Lanjouw & Murgai, 2009; Ruben & van den Berg, 2001). Thus, the poor's engagement in the non-farm economy may be characterized by low levels of labor productivity (Lanjouw, 2001).

The key objective of this paper is to investigate the suggested impact of non-farm activity on poverty and expenditure growth, using the Vietnamese Household Living Standards Surveys (VHLSSs) of 2002, 2004, 2006, and 2008. Our primary motivation is to exploit the strong variations observed in measured poverty, expenditure, and non-farm participation across rural households in Vietnam, which occurred following a series of useful policy reforms during the country's transition from a command to a market economy in the 2000s. To provide an abridged contextual background, the promulgation of the Enterprise Law in 2000 officially recognized the right to do business, eliminated over 100 license requirements in business, and simplified the registration procedures for new firms. Consequently, there was a significant increase in the number of private enterprise registrations, from 14,457 in 2000 to around 36,000 in 2004 (Hakkala & Kokko, 2007). Moreover, in 2001, all domestic enterprises in Vietnam were given the right to trade commodities freely (Decision 46/2001/QD-TTg). This decree led to a dramatic increase in the number of enterprises registered for international trading, from 2,400 in early 1998 to around 18,000 in early 2004 (Thanh, 2005, p. 77). Further, the Law on Foreign Investment in 1996 and its amendment in 2000 have generated significant employment. For example, employment in the FDI sector increased substantively, from 358,500 in 2000 to 1,694,400 in 2008 (General Statistics Office (GSO), 2012). Finally, the trade-liberalization drive that occurred in the same period reduced the tariffs and abolished the quotas, inducing transfer of some farm labor to the non-farm sector (Edmonds & Pavcnik, 2006). Overall, the ongoing transition from a centralized to a market economy, and the consequent departure of labor from agriculture to non-agricultural sectors in Vietnam, has meant new opportunities for rural households in the non-farm economy, and therefore, possible reductions in poverty and increases in expenditure.[1] These factors, together with the availability of rich household surveys that cover almost the entire decade of the 2000s, allow

us to estimate and quantify the suggested impact of non-farm activities on poverty and expenditure growth in the case of Vietnam.

Our analysis features an important methodological advance over previous studies in that we address the endogeneity of non-farm participation that may arise due to reverse causality or omitted variables. Prior work categorically ignored this issue. We follow a two-pronged approach to address endogeneity: (i) the use of non-farm networks as an instrument for non-farm participation, and (ii) identification through heteroskedasticity, à la Lewbel (2012). Non-farm networks are defined as the share of households participating in non-farm activities at the village level in the previous survey period. This type of networks is prevalent in the context of Vietnam, where the feeling of identification and association with fellow villagers is exceptionally strong. Importantly, in the presence of widespread labor-market imperfections, workers access job-related information through these channels rather than by formal means (Brassard & Acharya, 2006; Emran & Shilpi, 2011; Tarp & Markussen, 2011). The size of non-farm networks also exhibits strong variations across villages, providing us with empirical leverage to argue, at least initially, for predictive power of non-farm networks in non-farm participation in Vietnam. We use both the level and the change in non-farm networks and an exhaustive set of controls to overcome identification issues that may arise due to the general equilibrium effects of non-farm network membership and poverty.

Our second identification strategy—identification through heteroskedasticity—relies on non-spherical disturbances in the residuals, rather than exclusion-restriction assumptions, in the first-stage regression of non-farm participation. This relatively new approach has experienced a growing number of applications because of its ability to provide identification when other exogenous sources, such as instrumental variables, are not available. In our case, the size of arable land owned by households yields the heteroskedastic residuals for non-farm participation required to address the endogeneity.

Our estimation results indicate that rural diversification through non-farm participation significantly helps the poor in Vietnam in their efforts to escape poverty and increase household expenditure. Our endogeneity-corrected estimates are economically meaningful. Having an additional household member partaking in the non-farm sector increases the average household's probability of escaping poverty over a two-year period by 7–12%, and by approximately 30% over a six-year period (2002–08). Likewise, an increase in the share of the total working hours spent on non-farm activities from 25% to 75% increases the probability of exiting poverty by 8–14% over a two-year period and by approximately 35% over the six-year period. Having an additional household member working in the non-farm sector increases the average household's expenditure by 14% over a two-year period, and by more than 50% over six years if that person remains in the non-farm economy throughout the period. These effects are moderately large. [2] For example, two additional members of the mean household working in the non-farm sector in some capacity over a decade are associated with roughly a 100% probability of escaping poverty. Considering that the average size of farm households in our sample was approximately four, such an escape is possible. Further, it seems that two additional household members working in the non-farm sector can double the expenditure of the average household in real terms over a decade. These findings suggest that diversifying into non-farm activities can be a significant instrument for poverty reduction for rural households.

A crucial question at this stage is: What drives the powerful effect of non-farm activity on poverty? Consistent with growing evidence, [3] our investigation shows that non-farm participation increases agricultural efficiency. We find that although additional non-farm hours worked significantly reduce the hours worked on the farm, they do not affect the household's agricultural income. This finding can arise when rural households release their surplus labor, which is redundant on the farm, to the non-farm sector. Thus, availability of non-farm jobs enables the economy to use its labor endowment more efficiently and paves the way for poverty reduction via the additional proceeds it helps to generate.

Taken together, our paper makes three key contributions to the literature. First, we address the endogeneity of non-farm participation in a model of poverty and expenditure, an issue ignored by previous studies. Second, we document that off-farm involvement increases agricultural efficiency through re-allocation of surplus labor to the non-farm economy. This finding contributes to the growing evidence of the positive role of non-farm activity in increased agricultural sector efficiency. Third, we contribute to the broader literature on transition economies by showing that rural households, especially the poor, benefit significantly from the transition to a more diversified rural economy. In this respect, we quantify the role and impact of non-farm engagement on poverty and expenditure.

The rest of the paper is organized as follows. Section 2 describes the theoretical and contextual background of non-farm participation. Section 3 discusses the measures of non-farm activity used in this study. Section 4 details the econometric approach. Section 5 reports the empirical results and Section 6 the robustness checks. Finally, Section 7 concludes.

2. THEORETICAL AND CONTEXTUAL BACKGROUND

(a) Theoretical underpinnings of non-farm participation

The economic theories of non-farm employment relate closely to theories of development of the agrarian economy and labor re-allocation from the traditional agricultural sector to the non-agricultural sector. In the celebrated model of Hymer and Resnick (1969), rural households are assumed to participate in not only agricultural production but also non-agricultural non-leisure activities. Non-agricultural output, which is referred to as Z-goods, is not traded and its production can only use rural labor that remains after the society's food needs have been met. As the economy becomes more integrated into the world, the resulting increase in food prices gives birth to agricultural food production for exports and consumption of imported manufactured goods. According to Hymer and Resnick (1969), the re-allocation of rural labor from Z-goods production to agricultural food production in exchange for imported manufactured goods is likely to occur because imported manufactured goods are more complementary to food than Z-goods.

Observing that the non-agricultural sector and Z-goods production was developing in countries like Taiwan, Ranis and Stewart (1993) depart from the theoretical framework of Hymer and Resnick (1969), and argue that as the rural economy becomes more integrated into the world economy, the Z-goods production may actually expand. The reasons for this expansion are as follows. First, non-agricultural production consists of not only traditional but also non-traditional and modern products with enhanced productivity. Second, productivity-raising technology is introduced into the traditional