

## Chapter 58

# Does Nonfarm Income Affect Agricultural Income and Investment in Pakistan?

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### **ABSTRACT**

*The study investigates the impact of nonfarm income (NFI) on agricultural income and investment using the Pakistan Social and Living Measurement survey data for the year 2005-06. Results show that NFI negatively affects agricultural income and investment whenever it is statistically significant; and these effects are not same across the four provinces of Pakistan. The one to one comparison between the four provinces of the country shows that the effects of NFI on agricultural income and investment differ across provinces. The policy implication is that as compared to other sectors of the economy, agriculture generates low returns and consequently NFI is invested in other more productive sectors of the economy.*

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## INTRODUCTION

Not all people receive their earnings from a single source, hold their wealth as one asset and employ their labor in one activity. Multiple motives encourage families and individuals to diversify their assets and income generating activities (Barett and Reardon, 2001). Participating in the nonfarm income (NFI) generating activities are one of the ways for rural households to diversify their earning sources and increase their gross income. In return, these earnings affect farm productivity by enhancing investment in farming. Studies show that NFI has positive effects on farm investment (Heartz, 2009) and increase expenditure on inputs (Kilic et al., 2009; Oseni & Winters, 2009; Pfeiffer et al., 2009). Consequently, farm productivity increases (Huang et al., 2009) and poverty reduces (Kijima et al., 2006; Ruben & Van Den Berg, 2001). NFI can also finance longer term on-farm capital investment such as construction of irrigation channels, purchase of machinery which can positively affect farm productivity (Barett and Reardon, 2001). Little et al. (2006) found that farm households diversify their earning sources to improve insurance against the risks of agro-climatic natural shocks, help overcome credit constraints and stabilize aggregate income flows. However, contrary to studies cited above, Pfeiffer et al. (2009) show that NFI negatively affects crop production, but positively effect the purchase of inputs. Hence, NFI has divergent effects on production and inputs use. It is the focus of this research in Pakistan, where agriculture is the second largest sector of country's economy contributing 21 percent to the GDP and provides livelihoods to 40 percent of the population.

It is generally believed that only poor households may diversify their earning sources to increase their aggregate income. However, this may not be true. Rich rural households diversify their earning sources to further maximize their profit while poor diversify to minimize risk, stabilize income and secure food access (Kilic et al., 2009). Haggblade et al. (2010) and Davis et al. (2007) identified the growth linkages between the agriculture sector and rural nonfarm employment. These linkages are: 1) the increase in income, increasing effective consumption of nonfarm products, affecting nonfarm employment; 2) the effect of demand-induced changes on downstream production linkages from processing and distribution; and 3) the changes in input-demand and its effect on production. This study focuses on the third linkage that is the nonfarm-income-induced demand for agricultural inputs and its effect on agricultural productivity. The selection is motivated by our lack of knowledge of the effect of NFI on agriculture sector in Pakistan. In an emerging economy like that of Pakistan, it is important to understand that why some farmer perform better than others? Does NFI create positive spillover effects on agriculture and livestock investment and consequently income? The four provinces of the country are agriculturally very different. Punjab and Sindh produce cash crops like cotton, rice and sugarcane while Baluchistan and Khyber Pakhtunkhwa have small natural resource base supporting livestock keeping. These differences raise the question that whether NFI have divergent effects on agriculture and livestock income and investment across these regions. This study estimates the effect of NFI on expenditure made on farm inputs and consequently farm income in Pakistan. Alternatively, the study investigates whether farmers who diversify their income have higher farm incomes as compared to other producers.

The study makes a three important contributions to the existing literature. First, it develops empirical models illustrating the effect of NFI on agricultural income and expenditures on crops and livestock raising in the country. Second, these models are used to test specific hypotheses about the effect of NFI on agricultural income and expenditures on crops and livestock raising across the four provinces of Pakistan. It is also important to mention that understanding behavior of agricultural households with respect to income and investment is important to analyze the effects of government interventions (e.g.,

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