

Futures Pricing in the Agricultural Sector: Research Findings

Principal Researchers: Shawn Cole (Harvard Business School), Stefan Hunt (Harvard University), David Yanagizawa-Drott (Harvard Kennedy School)

Partner Organization: Self Employed Women's Association (SEWA)

Introduction

For anyone trading or investing in a product, knowledge of prevailing market prices is of utmost significance. For products with high price volatility, informed future pricing can affect current investment decisions as well as lead to more accurate price expectations.

The Centre for Microfinance at IFMR designed an impact evaluation for an intervention managed by the Self Employed Women's Association (SEWA) in Gujarat with 108 villages. Half of these villages were randomly selected to receive price information boards, which updated spot and futures prices for agricultural commodities cultivated locally. In addition to information boards, the National Commodity and Derivatives Index (NCDEX) provided financial training about futures pricing at these villages. These training sessions were devoted to understanding price expectation to inform planting decisions for different crops.

Due to the randomization status of surveyed villages, causal impacts of providing spot and futures pricing were determined by the study

The remaining villages received no price information boards and no training, and served as a comparison or control group. In each village included in the study, ten farmers were surveyed up to four times over a two-year

period. Due to the randomly assigned status of the villages, the study was able to find the causal impact of providing spot and futures pricing information in these villages.

Research Findings

The households in the treatment group reported higher on a self assessed understanding of futures pricing. Even in an objective measure of futures markets, treatment households scored much higher. Not surprisingly, the intervention showed a significant effect on the fraction of households which had seen futures markets since the first survey.

Due to the presence of the price boards, the sources for price information changed for treatment households, who relied less on other forms of media such as radio, television, newspapers, and physically travelling to the market. Individuals in treatment households were 20 per cent less likely to visit the market for obtaining price information, reporting greater trust in financial markets.

Exposure to these futures markets increased the likelihood of farmers using them, as farmers in the treatment group reported being 10-15 percentage points more likely to want to trade on futures markets. It is also found that treatment household farmers reported using futures prices

more and last year's harvest price less to make planting decisions. However, neither was there an effect on the number of plots that farmers plant for a particular crop, nor on the total area that a farmer devotes to the crop

Research Implications

In the absence of futures pricing information, farmers rely heavily on the previous harvest's realized price and current spot prices to form their price expectations. The results of the impact evaluation demonstrate that the concept of futures pricing can be introduced to farmers using price boards showing local prices of commonly traded commodities, with the addition of short training modules to explain basic concepts. The training can help these farmers make well informed and unbiased decisions regarding investing in their crops.

With spot and futures prices of commonly traded products readily available through this method, everyone will access the same information, thus reducing volatility in pricing due to uncertainty or lack of information. Artificial spatial variation in crop pricing can also be controlled in this manner, as farmers can find out futures and spot pricing in neighbouring locations.

In addition to providing this relevant information, pricing boards in prominent locations perform this task at very low costs for the providers as well as for the farmers, allowing for easy and quick scale-ups and hassle free implementation. Access to this information also provides farmers more bargaining power when dealing with intermediaries and middlemen.

Policy Recommendations

The results of this impact evaluation demonstrate existing gaps in the spot and futures pricing knowledge of farmers, which can be filled by implementing widespread programs providing pricing information in a public domain. Coupled with training in financial literacy, this is a potential route to reduce price volatility and speculation in the agricultural sector, which are contributors to rising inflation numbers.

Local administrators must adopt technologies that provide inexpensive yet reliable information of spot and futures pricing in the public domain

The relative success of these pricing boards should lead to other innovations being pursued that also provide spot and futures pricing information in the public domain. Such solutions should be costly to deliver, and at the same time be convenient and expensive for users. Local governance should look to promote knowledge in futures pricing, and provide input to other kinds of training to farmers and NGOs that should be provided to further this cause.

Keeping these facts in mind, administrators should also look for other ways to practically reduce implementation barriers associated with futures pricing contracts, such as high transaction and intermediary costs. Providing such training and facilities to farmers will reinstate their confidence in a sector of the economy that is quickly losing manpower to the industrial and service sectors.