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Farmer Suicides in India and the Weather God

Nilanjan Banik*

Bennett University, Greater Noida, Uttar Pradesh 201310, India

Abstract

This paper examines the reasons for farmer suicides in India. Inability to get the right price, crop failures, and insurmountable debt are the factors that may drive the farmers to take this extreme step. A key factor for farmers being unable to get market prices is inefficient agriculture supply chain management. We find that the reasons for inefficient supply chain management include lack of reforms in the Agricultural Produce Market Committee (APMC) Act, low bargaining power due to small farm size, and lack of warehousing facilities. Crop failures happen because of poor irrigation facilities. Considering agricultural output and rainfall data from four different states in India we find evidence in favor of association between the cyclical component of agricultural output and rainfall data. Understanding this linkage is important from the perspective of formulating demand management policies (read, intervention by the government and central bank).

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1. Introduction

Between 2012 and 2015 over 10,000 farmers committed suicides in India (Tiwary, 2017). When large numbers of suicides occur, it generates heated political debate. The ruling party typically defends its interventions such as farm loan waiver schemes, higher minimum support price (MSP), fertilizer subsidies, and tax free agricultural income, while the opposition parties criticise the government for not doing enough on the ground. MSP is the minimum price for a product established by the government and supported by payments to producers in the event of the market price falling below the specified minimum. While Dev (2009) attributes lacks of investment in rural infrastructures such as road connectivity (linking village markets to nearby wholesale market) and lack of cold storage facilities as factors prohibiting price discovery for agricultural produce, Kennedy and King (2014) find farmers' indebtedness resulting from crop failures and inability to sell, as reasons for suicides.

* Corresponding author.
E-mail address: nilbanik@gmail.com.
There is no comprehensive study that considers these factors together, and associates them to farmer committing suicides. This paper does that. Figure 1 shows, likelihood of a farmer committing suicide is more during bad-rain years. To have a meaningful comparison, we standardized rainfall and suicide data with respect to mean and variance, to make them unit free (read, std. rainfall and std. suicide).

![Rainfall and Farmers' Suicide](image)


Figure 1: Rainfall and Farmers’ Suicide

Subsequently, we test this hypothesis whether farmer suicide rates are strongly and negatively correlated with rainfall data. In the events of drought and floods, there is a likelihood about farmers’ facing crop failure. The mechanism of this relationship is driven by the relation between cyclical component of agriculture output (read, volatility of agricultural output) and rainfall.

Additionally, other factors such as lack of reforms to the Agricultural Produce Market Committee (APMC) Act, low bargaining power resulting from small farm size, and lack of warehousing facilities are also responsible for as to why farmers may not realize the market price. The rest of the paper is organized as follows. Section II deals with issues leading to inefficient supply chain management. In Section III, we look at the effect of rainfall on the cyclical component of agriculture output. Section IV is about conclusion and policy recommendations.

2. Inefficient Supply Chain Management

In India, if farmers are to sell their produce, they have two options. First is to sell directly to the government at the MSP. The Central government procures 24 essential food items from the farmers through agencies such as National Agricultural Cooperative Marketing Federation of India Limited (NAFED) and Food Corporation of India (FCI). The second option is to take their produce to the nearby government-designated mandi (market) where in front of state officers they can auction produce to the brokers.

Typically, MSP is higher than the market price, and one would assume that farmers gain every time the government announces the MSP. However, farmers are seldom able to sell their produce at the MSP. First of all, every village does not have NAFED or FCI outlets. FCI currently procures a major portion of rice and wheat from a few selective states. 70 per cent of rice procurement comes from the Indian States of Punjab, Andhra Pradesh, Chhattisgarh, and Uttar Pradesh while 80 per cent of wheat procurement comes from Punjab, Haryana and Madhya Pradesh.
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