Understanding the Dependence Structure Between the Futures and Spot Prices of Wheat in Egypt

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ABSTRACT

The aim of this article is to check the dependence structure for the futures-spot prices link of Egyptian wheat. Co-movements between prices are assessed by a GJR-GARCH model and semi-parametric copula estimation. Results suggest a positive futures-spot prices link, which becomes stronger the closer the markets are. Evidence of asymmetric behavior of the prices at times of extreme market situations is found. As a result, increases in wheat futures prices are expected to be passed to the Egyptian spot market, while the prices decline is not passed. This implies that the Egyptian wheat market cannot protect consumers against extreme international wheat price increases.

KEYWORDS
Asymmetric Price Transmission, Dependence Analysis Static, Food Prices, Futures And Spot Prices, Time-Varying Copula
1. INTRODUCTION

During the last decade, agricultural commodities prices have undergone many fluctuations as a result of economic, financial and political issues. Price volatility is a source of large economic and social consequences that are specially experienced in African and Asian countries, where the population spends a large part of its income on food, and thus becomes affected substantially from food price spikes (Lagi et al., 2011). These large food price volatilities have energized the research arena on food price behavior. Sudden price jumps in international food grain markets also damages the fiscal stability of net food importing countries, especially in countries where food subsidies consist of a big part of the national budget (FAO, 2011). Egypt is considered a net importer of food grains, which makes it vulnerable to international markets food price volatilities. Consecutive effects of crises on the Egyptian economy (avian influenza in 2006; the food, fuel and financial crises of 2006-2009; continued increase of food prices in 2010 and the political instability due to the civil revolution) have worsened poverty and food security (IFPRI-WFP, 2013).

The literature has suggested several causes that may be underlying recent price increases of food. Prakash and Gilbert (2011) showed that the magnitude of futures markets traders’ positions in agricultural commodity markets has considerably increased. This growth of the food commodities financial trading has raised concerns with respect to if food prices are affected by market fundamentals, or speculations have developed a major part in increasing prices (Baldi et al., 2011). Carter et.al. (2011) conducted a literature review and concluded three main reasons that can explain the international commodity price boom in late 2000s which are speculation, demand shocks to corn market because of the biofuel policy in the United States of America (USA); export restrictions by exporting countries. Roberts & Schlenker (2010) indicate that 30% of the staple food commodities average price rise was due to excess biofuel demand in 2007-2008.

In this regard, understanding the dynamics of the futures-spot link of agricultural commodities is considered a priority, especially in the context of recent food balances crises. Since it helps governments in a way that an efficient market does not need an intervention through policies, and market agents by providing a consistent forecast for spot prices helping in managing effectively market risks. Theoretically, Hull (1997) indicated that the parity of futures-spot prices implies that they should exhibit a similar long-run movement since both prices for a commodity are determined by the same information to mitigate arbitrage opportunities based on the futures-spot link.

There is a large literature that studies the long-run spot-futures relationship (Giot, 2003; Garcia and Leuthold, 2004; Hernandez and Torero, 2010). The causal relation between futures-spot prices is referred to as the price discovery function, which identifies the flow of information between the futures and spot markets (Brooks et al., 2001; Yang et al., 2001). Therefore, a price that reacts more rapidly to market innovations is characterized by having a price discovery function. The empirical literature supports, in general, that futures prices lead spot prices (i.e. spot prices are...
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