

Spatial Price Transmission and Market Leadership between Major Ghanaian Markets for Fish Products

Introduction

- This study presents an analysis of spatial price transmission and market integration of markets
- for Kpala (stavids); Smoked river fish; Dried salted tilapia; Imported Sardines in vegetable oil; Tuna in Vegetable oil and Mackerel in tomato sauce.
- These fish products are the ones commonly consumed by households and constitute part of the basket of goods used by the Ghana Statistical Service to calculate its CPI.

Price Transmission

- Price transmission analysis measures the effect of prices in one market on ***prices in another market of the same commodity.***
- It is therefore a useful tool in understanding and predicting price trends.
- This notwithstanding, the analysis does not explain why the relationship between two sets of prices can be very weak or strong.
- This interpretation can be strengthened through a survey of the markets concerned to get local knowledge of the issue.

- Price transmission analysis can be used to study the relationship between:
- world prices and local prices for a given commodity
- local prices for the same commodity in different cities
- prices of two related commodities in the same market channel (e.g. wheat and flour)
- prices of two competing commodities.
- In Ghana no much is known about the price transmission effects of fish products or types between different markets.

Market Integration

- Market integration can be interpreted as the extent to which price shocks are transmitted between spatially separate markets (Goodwin and Piggott, 2001).
- market integration refers to a situation in which separate markets for the *same product become one single market*. Integrated markets can be defined as markets in which prices for comparable goods do not behave independently.
- If markets are well integrated, it can be assumed that market forces are working properly, meaning that price changes in one location are consistently related to price changes in other locations and market agents are able to interact between different markets.
- If markets are integrated a commodity will be moved from surplus to deficit areas.

Methodology

- a convenient econometrics test for price transmission is the cointegration test.
- Co-integration between two price series implies that two prices may behave in a different way in the short run, but that they will converge toward a common behavior in the long run.
- If this property is verified, an Error Correction Model (ECM) can be used to describe the characteristics of the dynamic relationship between the prices.
- The short-run adjustment parameter can be interpreted as a measure of the speed of price transmission,
- while the long run multiplier can be interpreted as a measure of the degree of price transmission of one price to the other.

Test for Causality

- When two series are stationary of the same order and co-integrated, one can proceed to investigate for causality.
- The properties of co-integrated series also imply the existence of a causality relation, as defined by Granger, that can be tested by assessing if the past observations of one of the two prices (fail to) predict those of the other
- The causality test brings to the fore the issue of market integration [Same product between markets]

Market for Kpala

- Kpala prices are non-stationary for Accra, Ada, Half Assini and Wa.
- For Cape Coast, Mankessim, Techiman, and Tema Kpala prices were stationary (Table 5 and 7b).
- In terms of price causality between various markets: there was evidence for Accra to Mankessim; Accra to Techiman; Accra to Wa; Ada to Techiman; Cape Coast to Half Assini; Half Assini to Techiman; Techiman and Mankessim; Techiman to Tema; Tema to Mankessim; and Wa to Techiman.
- At least, 1 cointegrating equation (Table 5) was found for various combinations suggesting the causality observed may persist into the long run.
- In terms of the market for Kpala the Wa market was a key price taker with Mankessim market as the price leader in the set of markets for the study

Market for Kpala. \leftrightarrow Bi-directional situation

Price Leader		Price Taker	
Accra	Mankessim \leftrightarrow	Techiman	Wa
Ada		Techiman	
Agbozume			
Cape Coast	Half Assini		Wa
Half Assini		Techiman	
Kpando-Torkor			Wa
Mankessim		Accra \leftrightarrow	Wa
Techiman	Mankessim	Tema	Wa \leftrightarrow
Tema	Mankessim		Wa
Wa		Techiman \leftrightarrow	

Market for Smoked River Fish-

- Stationarity in fish prices for Accra, Ada, Cape Coast, Half Assini, Mankessim, Tema
- Non-Stationarity for others- Agbozume, Kpando Torkor, Techiman, Wa
- Cointegration exists between prices in Agbozume, Techiman, Wa, Ada and Mankessim and there is at **least one cointegrating** relationship.
- The most prominent price leader in Smoked River fish is Tema market in the set of markets used.

Table 14; Note: \leftrightarrow Bi-directional situation. Causality runs from row to column for Smoked River Fish market

Price Leader	Price Takerr					
Accra			Agbozume		Techiman	Wa
Ada		Kpando Torkor	Agbozume		Techiman	Wa
Agbozume					Techiman \leftrightarrow	Wa \leftrightarrow
Cape Coast			Agbozume		Techiman	Wa
Half Assini	Ada		Agbozume		Techiman	Wa
Kpando- Torkor						Wa
Mankessim	Ada		Agbozume		Techiman	Wa \leftrightarrow
Techiman			Agbozume \leftrightarrow			Wa \leftrightarrow
Tema	Ada		Agbozume	Mankessi m	Techiman	Wa
Wa		Half Assini \leftrightarrow	Agbozume \leftrightarrow	Mankessi m \leftrightarrow	Techiman \leftrightarrow	

Next

- Speed of adjustment in short run
- Long run parameter
- Implications for regional market in fish products