Does the Current Sugar Market Structure Benefit Consumers and Sugarcane Growers?

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**Introduction**

- Sugar is one of Zambia’s most successful non-traditional sectors:
  - 3-4% of the national GDP;
  - 6% of total national exports in Zambia;
  - Employs more than 11,000 workers; and
  - 5% of total basic needs basket for consumers

- Tremendous growth since liberalisation:
  - Production rose from 135,000 tons in 1990 to 430,500 tons by 2010;
  - Exports rose from less than a thousand tons to 273,000 tons;

- High prices vs low cost of production
Introduction

- Market structure: 92% of the market is controlled by Zambia Sugar Plc (ZS) owned by Illovo (a multinational)
- Similar to other countries in the region:
  - Malawi: Illovo, 100%
  - Tanzania, Illovo, 45%
  - Swaziland, Illovo and Tongaat Hullets
  - Mozambique and Zimbabwe, Tongaat Hullets
- Contractual arrangements with sugarcane growers:
  - 372 smallholder farmers grow sugar for ZS on contract basis
  - Prices are fixed annually
Objectives

- To examine the sugar market structure in respect to pricing effects on consumers and contracted growers;

- To review the underlying policy framework in the sugar market
Data and Methods

- Monthly sugar prices: 1996 to 2010 i.e. sugarcane retail, ex-factory(wholesale), farm-gate (growers’) and the world sugar price.

- Method: Price Transmission Analysis (Error Correction Model)
  - Law of One Price: Price differences in markets separated by space or at different stages of the value chain should be explained by transaction costs
  - Transmission of price changes in the world market to Zambian ex-factory, retail and sugarcane producer prices, as well as the transmission from ex-factory prices to sugarcane producer prices.
The Sugar Value Chain in Zambia

Sugarcane Producers
- Millers own estates (60%)
- Out-growers 40%

Export market (59%)
- EU (50%)
- DRC (30%)
- Great Lakes (15%)
- SADC (5%)

By-product market
- Molasses;
- Chemicals;
- Electricity

Processors (Millers)
- Illovo Sugar 92.54%
- Kafue Sugar (7.2%)
- Kalungwishi Estates (0.3%)

Domestic Market 41%

Industrial sugar
- 24% of 41%

Household sugar
- 76% of 41%

Wholesalers

Retailers

Consumers
Production and Exports

- Liberalisation: 1990
- Privatisation: 1995
- Illovo's market entry: 2001
- Illovo's expansion: 2000

Production '000 tons
Exports Quantity '000 tons

Indaba Agricultural Policy Research Institute
Only Zambia Sugar Plc has established contractual (vertical) relationships with sugarcane growers.

In 2011/12 season out-growers supplied about 1.15 million tonnes of sugarcane.

Payments to out-grower sugar suppliers in 2011/12 season amounted to ZMK 239 billion (US$ 46.4 Million).
Sugar pricing and Policies

- **Cheaper prices in export markets** compared to the domestic markets:
  - E.g. in 2009 retail prices in Zambia- Cents 98.3/kg and Lubumbashi Cents 92/kg
  - Price makers vs price takers
- **Sugar price have risen** in most of the years while production (supply) of sugar has also been rising.
....Sugar pricing and Policy

Sugar prices in cents/kg

After 1995 Liberalization
Vitamin A fortification: 2000
Flooding in cane fields: 2008

Retail  Ex-factory  Sugarcane  World
Vitamin A fortification:
- In 2000, legislation requiring vitamin A fortification was implemented.
- Few other countries fortify sugar, sugar from international markets cannot be imported into Zambia for household consumption
- Non-Tariff Barrier to trade, preventing imports, and thus concentrating the market further

Administrative Barriers:
- Sugar imports are required to be cleared by 3 ministries
## Price Transmission Analysis Results

<table>
<thead>
<tr>
<th>Price 1</th>
<th>Price 2</th>
<th>Speed of price transmission (Error Correction Term)</th>
<th>Short-run price response</th>
<th>Long-run price response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex-factory sugar price</td>
<td>World sugar price</td>
<td>-0.093</td>
<td>-0.294</td>
<td>0.909*</td>
</tr>
<tr>
<td>Sugarcane price</td>
<td>Ex-factory sugar price</td>
<td>-0.199*</td>
<td>0.008</td>
<td>0.945*</td>
</tr>
</tbody>
</table>

Note: * Statistically significant at 10% Level, ** 5% and ***1%.
Price Transmission Analysis

- Price transmission between the world and domestic markets:
  - price changes in the world market do transmit into the domestic ex-factory market. However, the speed with which the prices transmit is very slow.
  - In fact the model simulation shows that price changes in the world market take about three years to be transmitted in the domestic ex-factory prices.
Price transmission between the Millers (ex-factory price) and the growers (sugarcane price):

- The results show that price do transmit and that they do so at a much faster rate than what was observed with the world price and the domestic ex-factory prices.
- There are less distortions in this price relationship in that the short-run prices response is positive although it minimal.
Price Transmission Analysis

- More rapid pass-through of world price increases to consumers than world price decreases—evidence of the existence of market power
- Sugar millers are more willing to pass on price increases to sugarcane producers than decreases. Thus sugarcane producers stand to benefit from the price relationship. Although, there could be some exercise of market power in this vertically integrated value chain but it is done to the benefit of sugarcane producers.
Conclusions

- Tremendous growth in the sugar market but with a market structure that operates without effective competition;
- Under the current market structure, prices of sugar have been on the rise for the most part although production has been increasing with the growing surplus increasingly being channeled to the export markets;
- In this vertical relationship, sugarcane growers benefit in this relationship.
Conclusions

- Vitamin A fortification policy may have contributed to rising prices as an NTB
- There is need to re-evaluate whether fortification of sugar is still a good strategy for enhancing Vitamin A access to the Zambian population especially the rural population
Thank You

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