# Spatial integration and price transmission in selected rural and urban markets for cassava fresh roots in Nigeria

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## Abstract

An advanced time series econometric technique was used to study the interaction between the prices of cassava fresh roots in typical urban-demand and rural-supply markets in Nigeria. The price data cover 95 weeks from week 37 of 2004 to week 28 of 2006. The Augmented Dickey-Fuller (ADF) test was used to investigate stationarity in the prices while Johansen cointegration test procedure, with its associated vector error correction model (VECM) was used to measure the speed of adjustment coefficients that characterized the long run dynamics of the system. Unit root tests revealed non-stationarity in both price series: in levels the ADF-test statistics were calculated as -1.68 for the rural price and -2.69 for the urban price and in first differences they were -13.98 and -11.91 respectively. Cointegration test revealed that both prices were cointegrated with the trace- and maximum eigenvalue statistics calculated as 18.79 and 16.38 each being statistically significant ($p<0.5$). The VECM reveals that any positive deviation from the long-run equilibrium would cause the system to respond with decreases in both the rural and urban prices, but the rural price responded faster. The impulse response analysis revealed that the rural price was more responsive to shocks emanating from the rural markets and the effect of the shock was calculated as 63.8% using the forecast error variance decompositions. The effect of rural price shock on the urban price appeared to be very infinitesimal at only 6.0% after about 10 periods. The Granger causality test did not reveal any significant causality link between the rural and urban markets prices, suggesting lack of clear trends in price leadership. The finding reveals the lack of predictability and reliability of markets for highly perishable and susceptible agricultural foods products. There is need to strengthen cassava value chains so as to reduce the volume of trade in raw roots among Nigerian farmers.

**Key words:** Cassava fresh roots, spatial integration, rural, urban, markets, price leadership, Nigeria