Private Enterprise Development in Low-Income Countries

# Tariff Reform and Product Market Integration in Developing Countries: the Case of Zambia

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***This projects investigates the extent and determinants of intranational product market integration using a price approach in the context of Zambia, a low-income and landlocked country in Sub Saharan Africa. Our results show substantial within-country market segmentation, which is affected by both internal and external factors such as transportation costs, product specific characteristics, location and tariff reforms.***

## Introduction

Product markets show large and persistent segmentation within and across countries. This holds for both advanced and emerging economies. This lack of integration within economies hinders competition and imposes a welfare cost on society through unrealised trade gains and inefficient resource allocation. However, there is strikingly little empirical evidence on the extent and causes of market segmentation within developing countries, particularly Africa - which is characterized by poor infrastructure, high transport prices and poor trade facilitation. This project extends the literature on intranational price integration to a low-middle-income landlocked country, Zambia, using a detailed dataset of monthly product prices collected at district level.

The empirical analysis is organized around three objectives which are:

1) to identify and present stylized facts about the extent of price integration across regions, products, and time, and association of tariff reforms with the level of market integration;
2) To explore new within-country explanations for price dispersion such as ethnicity and income disparities unique to Africa
3) To examine the influence of external trade reforms and product tradability on within-country price integration.

## Context and data

Zambia presents a unique case study for an analysis of product market integration given the economic reforms implemented over the past three decades. In the early 1990s, after more than two decades of pursuing socialist policies, the government implemented a dramatic program of economic liberalisation that culminated in a more market-oriented economy. The major reforms involved privatization of state owned enterprises, liberalisation of trade and capital flows, deregulation of exchange rates and the removal of price controls across all consumer goods sectors. These internal and external policy changes were implemented in accordance with the International Monetary Fund and World Bank stabilization and structural adjustment programmes and were expected to have had a significant impact on the economy, including the integration of product markets.

## Data set

Coordinated by Centre for Economic Policy Research

In partnership with UKaid from the British people

The project uses two key datasets. The first is the monthly product-level data collected by the Statistical Office in order to compute the consumer price index. This covers 40 districts for the period 1993 to 2011. The price data is combined with product-level tariff rates to explore the effect of trade policy shocks on within-country price dispersion. Unlike previous studies that analyse the impact of lower tariffs on employment, trade, and output, this tariff-price data combination enables us to explore the effect of trade reforms on intranational market integration—something that has not yet been explored within the African context.

## Methods

The theoretical framework for this study builds on a simple arbitrage model premised on the law of one price (LOP), which posits that a good must sell for the same price in all locations. The model hypothesizes that if the same good is traded in the same currency in different places at different prices, then arbitrageurs will buy the good cheaply in one place and sell at a higher price in another place. The study makes three innovations in applying the standard LOP by:

1) testing the LOP using micro data over a period of 228 months;
2) testing for the influence of factors such as ethnicity, product tradability and variations in income on market integration;
3) testing the robustness of relationships using multiple estimation approaches;
4) exploring how external trade reforms affect within-country price dispersion by assessing the effect of changes in tariffs on domestic prices at district level.

## Key Findings

This exploratory study yielded the following results:

- First, product markets in Zambia are not perfectly integrated. On average, prices differed between Lusaka and other districts by 54.3%. As Figure 1 shows, we find large and substantial variations in price differences ranging from 34% to 72% across districts beyond the capital city Lusaka. Significant variations in price deviations are also observed across goods, which are more tradable, and services, which are less tradable. In line with the current literature, the price differences are larger across services which averages at of 91% compared to the goods price deviations that averaged at 39.1%. Within the services category, we find a range of 68% to 156% for medical and restaurant services respectively. We also find relatively high price gaps for clothing and footwear (47.6%) and relatively low gaps for non-durable household goods (15%) among goods. These price differences are substantially larger than is found in the literature (Parsley and Wei 1996, Fan and Wei 2006). Finally the relationship between tariffs and price dispersion show that trade reforms had a minimal average impact on price dispersion in the country.

- Second, our estimates show that within-country price dispersion is mainly influenced by trade costs, price of nontraded inputs and spatial dispersion of per capita income. The price differences are attenuated by the tradability of products and proximity to external borders. This suggests that external factors also matter. However, some obvious candidates such as district adjacency and ethnicity overlaps show mixed results and do not play a systematic and significant role on price integration in the country.

- The study also finds large and varied effects of trade policy shocks, as proxied by tariff changes, on intra-national price integration. We find that a 10% tariff cut results in 3.81% more price reductions in larger districts compared to small and relatively isolated districts endowed with worse infrastructure and less competitive markets across the country.

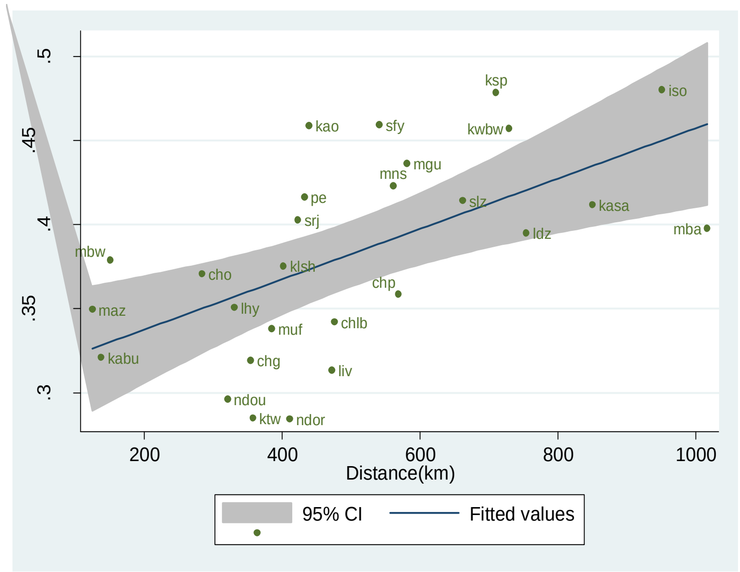


**Figure 1: Distance and Price Dispersion**
Note: Labels are abbreviated district names by distance from Lusaka

## Implications for Policy

The results suggest a few important policy implications. Firstly, trade costs appear to be large and prevent the integration of product markets in the country. Secondly, there is little evidence of increased integration of markets despite the market reforms initiated in the early 1990s. Finally, trade reforms impact regions within the same country differently. Taken together, these results underline the need for government investment in hard and soft infrastructure while paying attention to the spatial dimension of programs aimed at enhancing market competitiveness.

### Moving Forward…

This exploratory study has shown that market integration in Zambia is affected by both internal and external factors. The findings have created the foundation for further research on product market integration in Zambia. We hope to build a research agenda focusing on issues such as:

- how the entry of foreign supermarket chains has affected price integration
- characterizing retail firms by adding firm data to the collected retailer-level price data in order to approximate the actual costs of trading from crossing multiple borders, cost of doing business, and price-setting behavior within the country
- improving the measure of determinants such as road quality for distance