

## Price integration in low-income countries: market structure and retail price-setting behaviour in Lesotho

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***Disaggregated product price data in Lesotho shows evidence of substantial heterogeneity in the frequency and size of price changes within outlets across Lesotho that appears high relative to other emerging and low-income economies. The strong positive association also observed between the frequency of price changes and monthly average inflation in Lesotho provides some theoretical insights into the determinants of price-setting behaviour.***

Widespread empirical evidence of price discrimination in markets for goods suggests that national markets should be viewed as segmented rather than integrated. However, this research is almost entirely driven by studies of price-setting behaviour in developed countries, largely because the requisite disaggregated price data are unavailable in emerging economies. In emerging economies – where economic shocks are frequent, inflation rates are often high and variable, and weak infrastructure, poor distribution networks and ‘thin’ markets create frictions to price adjustments – market segmentation and price-setting behavior of firms can be expected to be very different from firms in advanced economies.

Price-setting behaviour in emerging economies may therefore challenge established theories of pricing behaviour as well as empirical models used to simulate the effect of policy and other shocks on the macroeconomic and microeconomics environment in these economies.<sup>1</sup> The study from which this research note is drawn extends the literature on price-setting behaviour in emerging countries using a unique database of monthly product prices by retail outlet and retail outlet survey of these outlets for Lesotho, a low-income African country.

The two principal objectives of this project are to: (1) identify and present the stylized facts that characterize the setting of product prices by retail outlets in Lesotho; (2) conduct original research on price setting behaviour and its determinants in Lesotho, drawing attention to market structure and trade impediments.

### Collecting the data

This study is unique, both in its focus on an emerging African economy and its use of a database that combines historical product level price data with firm survey data. The micro price database consists of monthly consumer prices, collected by the Lesotho Bureau of Statistics (BOS) as part of their Consumer Price Index (CPI) calculations. The raw price data covers 229 product items, collected from 345 retail and services outlets over the period March 2002 to December 2009, and 391 products collected from 506 retail and services outlets in Lesotho over the period January 2011 to December 2012.

<sup>1</sup> Creamer *et al.*, (2012), for example, use the micro-data-based findings on pricing conduct in South Africa to modify a Dynamic Stochastic General Equilibrium (DSGE) model commonly used to model the impact of monetary policy in South Africa.



## Private Enterprise Development in Low-Income Countries

The outlet data was collected through face-to-face surveys of the managers or owners of 441 of these outlets. The survey questionnaire contains detailed information on firm attributes, price-setting behaviour, competition and costs. The integrated database combines the richness of the micro price data in terms of product range and time dimension with detailed information on outlet characteristics and manager responses to how prices are set, reviewed and changed. This allows for a more precise testing of the determinants or correlates of price setting behaviour than is possible in other studies that use either micro price or price-survey data.

This approach therefore makes it possible for the pricing history of individual items, within individual retail outlets, to be traced over a long period of time. A limitation of the data, however, is that no information allowing the identification of price changes associated with temporary promotions and seasonal sales is provided.



Retail outlet surveyed for the study

### Main results

A number of stylised features characterising price-setting behaviour were identified in this study:

- As with the international empirical literature, we find substantial heterogeneity in the frequency and size of price changes within outlets across Lesotho. This heterogeneity is observed across sectors, retailers and individual products in Lesotho. The frequency of price changes appears to be high relative to other emerging (including South Africa) and low income economies.
- The study also finds a strong positive association between the frequency of price changes and monthly average inflation in Lesotho, with some evidence of asymmetric behaviour with respect to price increases and decreases. These results provide us with some theoretical insights into the determinants of price setting behaviour. Goods sectors are generally characterized by state dependent pricing behaviour, whereas services tend to be characterized by time dependent pricing behaviour. The results also highlight the importance of both price increases and price decreases in driving inflation movements in Lesotho.
- Price setting behaviour across South African retail outlets influences price setting behaviour within Lesotho, but price setting behaviour also reflects local market conditions. Regional markets are thus not fully integrated, despite common membership in the Southern African Customs Union (SACU) and the Common Monetary Area (CMA) as well as the extensive presence of South African retail chains in the Lesotho market.
- The survey data suggest that large firms and firms facing more competition tend to change prices more frequently than other firms. Large firms are also more likely to set prices based on mark-ups over cost, whereas firms in a more competitive environment are more likely to set prices based on their main competitor's price. Outlet characteristics and market structure are therefore important factors explaining the heterogeneity in price setting behaviour across outlets.

These results contribute towards establishing the consistency between the predictions of theoretical models of price-setting behaviour and the data in the context of developing countries, while also corroborating findings from the recent empirical literature (Klenow and Kryvtsov, 2008; Nakamura and Steinsson, 2008) that find disconnects between theory and empirical regularities.

### Implications for policy

Three main policy implications arise from this research. First, the results have implications for macroeconomic policy. Price-setting behaviour differs across products, implying that macroeconomic policy, such as monetary policy, affects sectors of the economy differently. The transmission of inflation and monetary policies to prices and households is mediated differentially across regions and products. These policies therefore have differential effects on households and firm behavior, depending on the location of the outlet and the composition of household consumption.

The data also suggests that product markets remain segmented in Lesotho. Large price differences persist across and within regions in Lesotho with outlets able to price discriminate or maintain price differences across locations. This suggests the presence of barriers that prevent entry and restrict competition. Policies (regulatory, transport infrastructure, etc.) that reduce barriers to entry and enhance competition between outlets in different locations can therefore improve product market integration with potential welfare-enhancing outcomes.

Finally, it seems that the South African and Lesotho product markets are not fully integrated despite joint membership in the South African Customs Union and the Common Monetary Area (CMA). This finding points to the continued presence of barriers to trade between the two countries, a finding corroborated by outlet responses in the survey. These barriers impose various costs on Lesotho society. Firstly, the barriers to trade restrict access to goods and reduce competition in Lesotho, reducing national welfare. Secondly, Lesotho as a member of the CMA in effect adopts the interest rates set by the South African Reserve Bank. When product markets are segmented, these interest rate changes are not necessarily aligned with the inflation dynamics in Lesotho that the interest rates are intended to deal with. Monetary policy and inflation targeting under the CMA may therefore impose additional adjustments burdens on the Lesotho economy. This relationship can be explored further using the data obtained.

### Moving Forward...

A primary objective of this project was to provide the foundation for further research in the area of product market integration. A research agenda is currently being developed around the data made available. In addition, we will re-visit the outlets to create outlet-level panel data within the next two years. Panel data would allow us to better follow firm dynamics and the effect on price-setting behaviour over time. In particular, we are interested in how entry and exit of competition affects pricing behaviour, the role of networks, particularly ethnic networks in the setting of prices and competition, and the role the retail chains (mainly SA owned) on product markets in Lesotho.