Trade and Poverty Project
Southern Africa Labour and Development Research Unit
University of Cape Town

# Trade and Poverty Project:
# The Price Transmission Mechanism

By
**Eric Schaling**

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## 1. INTRODUCTION

In this report we analyze how poor households' real incomes are affected by international trade. Here we study how the relevant consumption price index is influenced by trade liberalization and/or the opposite, namely protectionist trade policies.

One of the expected benefits of trade liberalization is increased levels of competition between import substitutes producing industries and foreign exporters as the tariffs on the latter's products fall or are phased out altogether.

To evaluate the scale of the expected price effects, it is first important to identify the goods consumed by the poor (or key inputs in the domestic production process) and the extent to which consumers (and producers) should benefit from changes in border prices. But it is equally important to assess whether changes in border prices are passed through to the rest of the economy. Sector specific analyses are necessary to map the movement of a select number of goods through the production chain from foreign producer to domestic consumer (and producer). This will help to show how prices are transmitted in the economy and identify key constraints (lack of competition; tariffs; regulatory barriers etc.).

So, in order to understand actual price levels (and their implied evolution, or the implied inflation rate), we need to understand (or have a basic picture of), value chains, or input-output tables associated with the SA economy. The way this will be operationalized, is to draw up a conceptual framework on price transmission that will be illustrated with the case studies of the project.

More specific, building on a macroeconomic decomposition of the CPI into imported final and intermediate goods – and on the relevant case studies – we present stylized price transmission models for the clothing industry, the motor trade, the small household appliances sector and the wheat-flour-bread value chain.

## 2. CONCLUSIONS AND POLICY RECOMMENDATIONS

The master conclusion that can be drawn from this study is that protectionist policies – the presence of tariffs on imported goods – are very bad news for the consumer in general, and the poor consumer in particular.

First, a tariff directly increases the rand price of imported goods, much like a weaker exchange rate – following a nominal depreciation – would do. Here we can distinguish between tariffs on imported final goods, the so-called output tariffs, and tariffs on imported intermediate inputs such as chemicals and steel, called input tariffs.

Obviously, the adverse price impact of a tariff is larger – again in line with the effect of a nominal exchange rate depreciation – the more important that good is (or the larger its share in the (poor) consumer's overall basket. For example, food prices are very important in their potential effects on poverty (relief) as expenditure on food makes up

about half of all expenditure by very low and low expenditure households (households that spend up to R 8071 and between R 8071 and R 12263 respectively). Another example of an important final good (or rather service) in the poor consumer's basket is transport. The National Transport Survey has revealed that almost half of the households who earn R 500 or less per month spend more than a fifth of their income on transport. We will return to food prices and transport services when we present our policy recommendations.

We have shown that a tariff is more problematic for price transmission the more important that particular price - or its induced effect, given certain pricing strategies such as import parity pricing - for the real income of the consumer. Similarly, for the SA economy as a whole a tariff has a higher impact on the overall level of the consumer price index, the larger the share of that final good or service in the CPI. Now, if we look at the macroeconomic architecture of the SA CPI, it follows that only 10 percent of all final goods and services are imported. Therefore, the presence of tariffs on outputs or final goods, say, is not the major threat to an orderly price transmission in general, or to poverty reduction in particular. Rather, the crux of international trade in South Africa is trade in intermediate inputs, such as chemicals and steel. Here, we find that on a macroeconomic level about 30 percent of such inputs are imported. Therefore, the potential adverse impact on poverty via higher rand prices of imported intermediate inputs is much larger than that of more expensive foreign final goods (as the latter effect constitutes only 10 percent of the CPI).

Of course, in the end the effects of imported final and intermediate goods price inflation interact, as is illustrated by Table 1.1 below.[1]

**Table 1.1 Macroeconomic price transmission (for the aggregate SA economy)**

| | | | | |
|---|---|---|---|---|
| CPI = | 0.90 x (prices of home-produced final goods) = 0.90 x PPI | | | + 0.10 x (prices of imported final goods) |
| | | | | |
| | PPI = | 0.7 x (price of home produced intermediate goods) | + 0.3 x (price of imported intermediate goods) | |
| | | | | |
| | CPI = | 0.63 x (price of home produced intermediate goods) | + 0.27 x (price of imported intermediate goods) | + 0.10 x (prices of imported final goods) |

This Table shows that the combination of 10 percent imported final goods (row 1, in green) and 30 percent imported intermediate goods (row 2, in orange) together implies

[1] In this report we have used a visual tool to help the reader navigate through – and keep track of - the conceptual framework. Paragraphs and equations have been color-coded to keep track of price transmission effects. First, the consumer price index or CPI is always indicated in yellow. Blue indicates the producer price index, or PPI. Next, imported final goods are indicated in green. Home-produced final and intermediate goods are red, whilst imported intermediate inputs have an orange label.

that the largest part of the CPI (row 1, in yellow) is driven for 63 (0.7 x 0.9 x 100) percent by the prices of home-produced intermediate goods (row 3, in red). The remaining 37 percent comes from abroad – is 'imported inflation' – and is split between 27 percent imported intermediate goods inflation (row 3 in orange) - and 10 percent imported final goods inflation (row 3 in green).

### 1.1 General conclusions and policy recommendations

So, using this decomposition as a guideline it is clear that scrapping all tariffs on imported final goods will have quite a small impact on the CPI, and therefore on poverty. Much more can be achieved by repealing tariffs on imported intermediate inputs where the impact on poverty relief will be much more substantial.[2]

- **So, the first policy recommendation is that more gains are to be made for the domestic consumer by lowering tariffs on intermediate goods than on final goods**. **The numbers in Table 1.1 suggest that those gains are almost three times as large as an equivalent drop on tariffs on final goods**.

Another very important result we found in this study is the following. The presence of a tariff – either on final or intermediate goods – lifts the rand price of the imported good above the rand price of the home-produced good. It becomes a rational pricing strategy of the domestic (SA) producer not to charge below the cost (to the consumer) of imported goods on which duties are charged. This is called import parity pricing (IPP). Then, the only options available to SA consumers (or to SA downstream producers), are to pay the duty-inclusive price on local goods or purchase imports and pay the duty anyway.

IPP is unfortunately a well-established business practice in South Africa. For example, the case study on the wheat-flour-bread value chain [Hobson (2006)] finds that wheat is priced according to IPP as millers have little incentive to pay SA farmers more than what they can import wheat for. Similarly, in our assessment of the case study on the clothing industry [Van der Westhuizen (2006)], we find that it is plausible that in this (retail) buyer driven value chain retailers also engage in IPP vis-à-vis their suppliers (manufacturers). The case study on small household appliances [Chaponda and Stern (2006)] finds that SA producers of plastics, steel and aluminium also follow the IPP model. Finally, the sharp rise in the prices of SA-produced cars following the rapid depreciation of the rand in 2001 is also completely consistent with the logic of an IPP strategy. The reason is that it does not matter what drives the higher imported rand price, a hike of the tariff or a weaker currency have a similar effect in that they both push up the rand price of the imported final good.

[2] Of course, there are exceptions. For some goods, e.g. small household appliances, the home-produced component is quite small (in fact that is about 20 percent of the basket). So, in that case the policy priorities are reversed: first repeal the tariff on imported final goods, and then on imported intermediate inputs.

- **In this study we show that the presence of import parity pricing increases the adverse price impact of tariffs – either on intermediate or final goods - (or of a weaker rand) on the CPI and therefore on poverty**.

Consider the important case of IPP for imported intermediate inputs. Without IPP the higher tariff would increase the CPI by 27 percent of the change in the tariff (being the share of imported intermediate inputs in the consumption basket, indicated in row 3 of Table 1.1 in orange). But now the higher rand price of imported intermediate inputs is followed by a parallel increase in the rand price of home-produced intermediate goods (which are 63 percent of the CPI). When those goods are priced to parity with the prices of imported intermediate inputs then the effects of tariffs on those inputs on the CPI would increase from 0.27 (in the absence of IPP) to 0.9.

- **This means that with import parity pricing the adverse effect of input tariffs on the CPI is now more than three times as large (or 0.9/0.27 = 3.33)!**

Import parity pricing has another extremely negative influence on the SA price transmission mechanism: it substantially increases the adverse effect of an exchange rate depreciation on the CPI and hence on poverty. This effect is important as it has a real-life counterpart in the form of the 2001 depreciation of the rand. As a consequence of import parity pricing of imported intermediate inputs the adverse effects of a rand depreciation on the CPI are almost three times as large as in the absence of IPP.

Further, note that the reason why SA producers engage in IPP in the first place, is the presence of tariffs on intermediate inputs which raises the rand price of those inputs above the autonomous price of the home produced input (the price in the absence of IPP).

- **So, the second policy recommendation is that tariffs on intermediate inputs need to be scrapped as soon as possible as they invite domestic producers to engage in import parity pricing which not only increases the adverse price effects of tariffs on the CPI (more than three times as large as in the absence of IPP), but also of a nominal rand depreciation (almost three times as large as in the absence of IPP).**[3]

**REFERENCES**

**Chaponda, T. and M. Stern (2006)**. 'Trade and Poverty Case Study: Small Household Appliances', January.

[3] To be more precise the impact of a rand depreciation in the absence of IPP is 0.37 (or 0.27 + 0.10), and under IPP this increases to 1(!). The reason is that the remaining 63 percent of prices (namely those of home-produced goods) also respond in a one-for-one manner to a nominal depreciation.

**Hobson, S. (2006)**. 'The Effects of Trade Liberalization on the Wheat-Flour-Bread Value Chain in South Africa', Trade and Poverty Case Study, March.

**Van der Westhuizen, C. (2006)**. 'Trade and Poverty: A Case Study of the SA Clothing Industry', January.

# The Southern Africa Labour and Development Research Unit

The Southern Africa Labour and Development Research Unit (SALDRU) was established in 1975 as part of the School of Economics. SALDRU conducted the first national household survey in 1993 (the Project for Statistics on Living Standards and Development). More recently, SALDRU ran the Langeberg Integrated Family survey (1999) and the Khayelitsha/Mitchell's Plain Survey (2000). Current projects include research on public works programmes, poverty and inequality.

## The Trade and Poverty Project

South Africa is currently engaged in various trade negotiations at the multilateral, regional and bilateral level. The net impact of the resulting trade reforms should be to contribute to growth, employment and raising average incomes. But this net impact conceals a range of differential effects: the benefits of reform do not accrue automatically and equally to all households or communities, and in some cases poverty and unemployment may rise. Policy makers need to be aware of these different effects and implement trade reforms in a way that maximizes the benefits for the poor.

The objective of the South Africa Trade and Poverty Research Project is to analyse the impact of specific trade reforms on poverty in South Africa. The project includes a number studies that explores various linkages through which trade reform affects prices, consumption, production, and employment. These studies fall under 5 broad sections:

1. Review of trade and poverty in South Africa
2. Industry level analysis of trade, enterprise production and employment
3. Household level analysis of trade and poverty
4. Sector specific analysis and case studies
5. Policy simulations

The project is funded by the Department for International Development (through the Trade and Industrial Policy Strategies and the RTFP), USAID and the Department of Trade and Industry. All papers can be accessed via the project home page:

http://www.saldru.uct.ac.za/saldru_trade&poverty.html.