TRADE REGIMES AND WELFARE IN LESOTHO

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Abstract

The main objective the study was to assess the impact of the erosion of existing preferential trade access on the economy of Lesotho using a Social Accounting Matrix (SAM) and Computable General Equilibrium model (CGE). The erosion of preferential trade access negatively affect Lesotho's international trade, as textile is the country's largest export industry by far. It appears also as the result of erosion the textile industry reduce the quantity of textile products exported; price of imported textiles increase and the quantity decrease, as a result, negatively affect Lesotho household's welfare measured in terms of equivalent variation (EV), particularly urban area. The probable effect on some macro-economic variables cannot be regards as significant. The erosion of preferential access trade certainly illustrates the need for Lesotho to strive towards diversification of export products. Export diversification is a complex issue. It is not simply a matter of looking for the next miracle product to give a magic answer. It is about providing a solid infrastructure within an economy and building upon that foundation this includes strong regional and global linkages. It is about where to put your priorities in order to maximise the marginal gain to the economy of Lesotho.

Keywords: Erosion of existing trade access, Trade regimes, equivalent variation, Macro-economic variable, Textile sector, Social Accounting Matrix, Computable General Equilibrium model.

1. Introduction

Lesotho's textile industry has its roots in the early to mid 1980's, when East Asian entrepreneurs moved factories and production lines from South Africa to Lesotho in order to avoid international sanctions imposed on South Africa. Textiles have become the main source of economic growth and employment in Lesotho (Bahta, 2007).

In the late 1980s, the main impetus to growth was preferential market access to the European Union (EU) provided under the Lome Convention (and the subsequent Cotonou Agreement), the US-Africa Growth and Opportunity Act (AGOA), and the EU's Everything-But-Arms (EBA) programme and to the United States under the Generalized System of Preference (GSP) (IMF, 2005).

Lesotho's textile (garment) exports have benefited, in particular, from AGOA's "third-party fabric provision" status granted to least-developed countries (LDCs). As an LDC, Lesotho is entitled to import inputs from non-members of the AGOA without repercussions for its free access to the U.S. market. With relevant U.S. import tariffs on average more than 15%, and with foreign inputs accounting for at least 50% of total costs, value added in Lesotho is effectively protected at a rate of 30% or more (IMF, 2005). The value of exports to the United States has increased in exponential terms in response to the duty-free and quota-free access provided in terms of the AGOA. Lesotho's textile exports increased from US$100 million in 1999 to US$260 million in 2000 and US$262 million in 2002 (ITC, 2001).

Total exports to the EU have declined and the EU now accounts for a negligible portion of total exports. This is due to the expiry of the derogation clause under the Lome Agreement whereby only 30% of the value of the final product had to be added in Lesotho for the product to qualify for duty-free access to the EU. On the expiry of this derogation in 1996, exports to the EU declined substantially as Lesotho's manufactures struggled to comply with the rules of origin (ITC, 2001).

McDonald (2002) studied the impacts of removing preferential access to a market. The analysis focused upon the degree of structural change implied by the changes in preferences for Botswana under the assumption that Botswana's preferential access to the EU for beef exports would discontinued, as was the intention under the Cotonou Agreement. The results suggest that the welfare effects will be minor provided the economy is able to achieve the structural transformations required given the changes in prices.

Several studies have addressed the issue of MFA quota removal in the past. Yang et al. (1997) used a computable general equilibrium model based on the GTAP database to simulate the outcomes of the abolishment of MFA quotas. According to their results, Latin American countries would decrease exports of clothing by 23%.

Another study by Westcott and Price (2001) used USDA's FAPSIM (Food and Agricultural Policy Simulation) model in an analysis of the impact of removing the U.S. marketing loan programs for all commodities. However, this study did not account for trade liberalization and did not estimate welfare effects (MacDonald et al., 2003). Tokarick (2003) used a computable general equilibrium model to simulate the impact of removing distortions for all commodities and found negative welfare effects for some developing countries. Likewise, USDA's Market and Trade Economics Division used a CGE framework to examine the impact of removing all global policy distortions in agriculture, and found global welfare improved by about 0.2 percent, slightly less than the IMF and Tokarick (MacDonald et al., 2003). None of them assess erosion of preferential trade access in relation to textile industry. Therefore, the present study attempts to fill this gap in knowledge and literature.

The main aim of this study was to assess an erosion of existing preferential trade access of textile and its effects on welfare, trade and economy of a Lesotho.

2. Methodology

2.1. Social accounting Matrix and CGE model

The main data source for the basis of the CGE model is a 2000 Social Accounting matrix (SAM) produced by Connigarth Economists and the World Bank (2002). The Lesotho CGE model was implemented using International Food Policy Research Institute (IFPRI) computable general equilibrium model, as documented in Lofgren et al. (2002) which includes a mathematical statement of the model equations and the Lesotho CGE model was solved numerically with General Algebraic Modelling Systems (GAMS) software. Inputs to the model included the Lesotho SAM and other behavioural parameters on production technology, commodity trade, and consumer preferences were taken from the literature.

A CGE model consists of a set of simultaneous equations and specify how all the payments (economic flows) that are recorded in a SAM change as a consequence of a change in an exogenous variable or parameter. The equations also include a set of constraints (markets and macroeconomic) that have to be satisfied by the system as a whole but which are not necessarily considered by any individual actor. For details equation and explanation see (Lofgren et al., 2002).

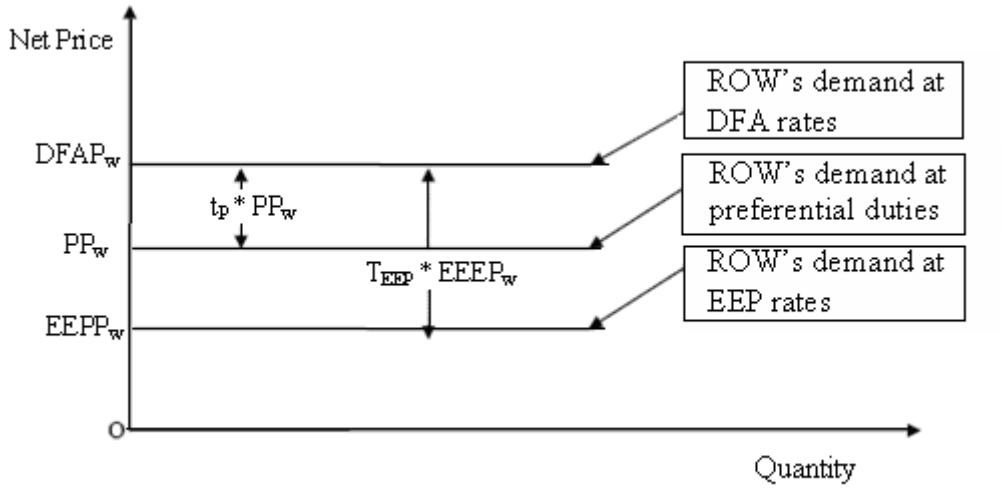
The model has two types of production elasticities (demand and supply). These elasticities were obtained from Nganou (2004). The remaining elasticities are adopted from literature. The production elasticities were set at 0.6. The model also contains an output aggregation elasticity, which was set to 8. Finally, parameters for the Linear Expenditure System (LES) of demand are calibrated from the aggregated SAM entries, along with assumed values for expenditure elasticities and the Frisch parameter. The Frisch parameter (Frisch, 1959) measures the negative of the marginal utility of income, also known as the flexibility of the marginal utility of income. Following Nganou (2004), the Frisch parameter was set to negative 2.415 for all households.

Armington elasticity – the degree of substitution between domestic and imported goods – is a behavioural parameter that materially affects the effects of trade on macro-economic parameters. Thus, it is important to use the true Armington parameters for the countries of study, elasticities of expenditure, Armington and LES taken from Nganou (2004).

2.2. Policy scenarios -Border protection

As a preferred beneficiary country, Lesotho is sensitive to the potential erosion of trade preferences following the implementation of trade policy reforms. Hoekman et al. (2003), drawing on existing studies, estimate that these reforms would cut average tariffs on preference commodities from 4.3 to 2.5 percentage points, equivalent to an erosion of more than 41%. Comparable estimates suggest that the preference margins extended to the least-developed countries vary amongst countries and average at 50% of the most-favoured nation (MFN) margin. Thus, a removal of these preferences would amount to 50% erosion. The magnitude of erosion is used as a scenario of EEP.

The choice of a 50% erosion of existing preferential access to export markets scenarios is based on Figure 1. Three border protection regimes are depicted in the figure, and one of them is the access of Lesotho exports to ROW under EEP regimes. In this paper only EEP discussed. According to Figure 1, Lesotho exporters are subject to the EEP rate (t_{EEP}), the net marginal benefit drops to its lowest level (O-EEPPw), as the net price received by exporters falls to $EEPP_w$. In implementing border protection scenarios, it is assumed that the prevailing conditions in the base year 2000 corresponded to EEP levels.



Note: $DFAP_w$: World prices under a duty-free export regime; PP_w: World prices under the preferential export regime; $EEPP_w$: World prices under an export regime of erosion of existing preferences; $t_{EEP:}$ Level of protection when existing preferences are effectively eroded; t_p: Average preference rate (Figure adopted from Nouve, 2004.)

Figure 1: Export regime under different scenarios (EEP scenario)

The implementation of an EEP requires the estimation of average EEP tariffs applied to commodities of export relevant to Lesotho (t_{EEP} in Figure 1). The EEP tariffs are applied to all MFN status in the importing country. An average preferential tariff (t_p) will be set to half the EEP or MFN tariff level ($tp = 0.5t_{EEP}$). It follows from Figure 1 that $EEPP_w = DFAP_w/(1 + t_{EEP}) = [(1 + 0.5t_{EEP})/(1 + t_{EEP})]* PP_w$. The price level $EEPP_w$ defines the EEP access scenario. An EEP scenario depends on the calibrated level of preferential access price (PP_w) and on the MFN tariff rate (t_{EEP}).

This analysis relies on simple averages of MFN tariffs applied to imports of these commodities in major markets. The database of the Global Trade Analysis Project (GTAP) at Purdue University (McDougall and Elbehri, 1998) documents these rates for several regions in the world. Average MFN tariff rates on textiles were as follows in 1996: USA (7.3%), EU (1.6%) and ROW (80.9%). The average tariff was calculated as being 29.93%, and this mean tariff (MFN) rate will be used for simulations to determine how the MFN and EEP scenario would deviate from the (calibrated) EEP.

The MFN rate will be used in the simulations to determine how the EEP would deviate from the (calibrated) EEP, EEpPw = [(1 + 0.5tEEP) / (1 + tEEP)]*PPw, where tEEP is the EEP or MFN average tariffs assumed above. EEPPw represent the export prices under EEP. Consider, for example, an average import tariff of 29.93% for textiles in general. The deviations from the calibrated EEP would be 0.884823*PPw for access when existing preferences are eroded (EEP). In other words, the marginal revenue drops to 0.884823 times the base year's value when the trade regime switches to EEP tariffs (Bahta, 2007).

3. Result and Discussion

3.1 Impact on commodity price and trade

The EEP in the market access regimes of textiles will cause the domestic export price to decrease by 0.23% and the quantity exported by 14.10%. EEP will cause the import price of textiles to increase by 6.6%, while the import prices of commodities will on average decrease by 0.23%. The quantity of textiles imported will decrease by 5.62%; effects on imports of other commodities will vary.

The impact of EEP on both the demand price and the supply price of commodities produced and sold domestically will increase (5.58%) for the textile sector. On aggregate, the mean for all commodities will decrease by 0.22%. On aggregate, the price of composite goods for commodities is to decrease by 0.18%, while a 6.38% increase is predicted for the textile sector. The average output price for the textile sector is forecast to increase by 2.14%. Average output prices for all commodities except textiles decline by less than 0.57%. The aggregated quantity of marketed commodities decrease by 10.00% for the textiles sector. The textile sector experience a decline of 10.00% in quantity of aggregated marketed commodities.

3.2. Impact on activities' output price and intermediate input cost

The impact of EEP on activities' output price was predicted to be 2.14% for the textile sector. Agricultural activities will on average face a decrease of 0.36%, mining activities a decrease of 0.43%, the manufacturing sector a decrease of 0.14%, and other services on average decrease by 0.38%. None of these changes can be regarded as meaningful. Increased prices of intermediate inputs (3.20%) predicted for the textile sector. Expansion or contraction of industries is primarily affected via changes in return to factors and subsequent reallocations. The change in the price of value added (PVAXP) indicates changes in the overall return to factors in different activities. According to the model estimation results, the textile sector will experience a decrease in PVAXP (1.76%).

Gross domestic product (GDP) predicted to increase overall by 0.42%, and decrease by 11.54% in the textile sector in nominal terms. In real terms the textile sector GDP is set to increase by 1.58%.

3.3 Impact on labour employment and factor income

EEP predicted to severely reduce the quantity of labour (skilled and unskilled) demanded (FLAB) in the textile sector by 11.39%. Table 1 shows the effect on factor income resulting from the changes in wage rates and employment. Labour income will decrease by 0.44% and capital income by 0.37%.

Table 1: Factor income (YFXP) (% change)

	BASE	YFXP (%)
FLAB (Labour)	3006.46	-0.437
FCAP(Capital)	1472.98	-0.37

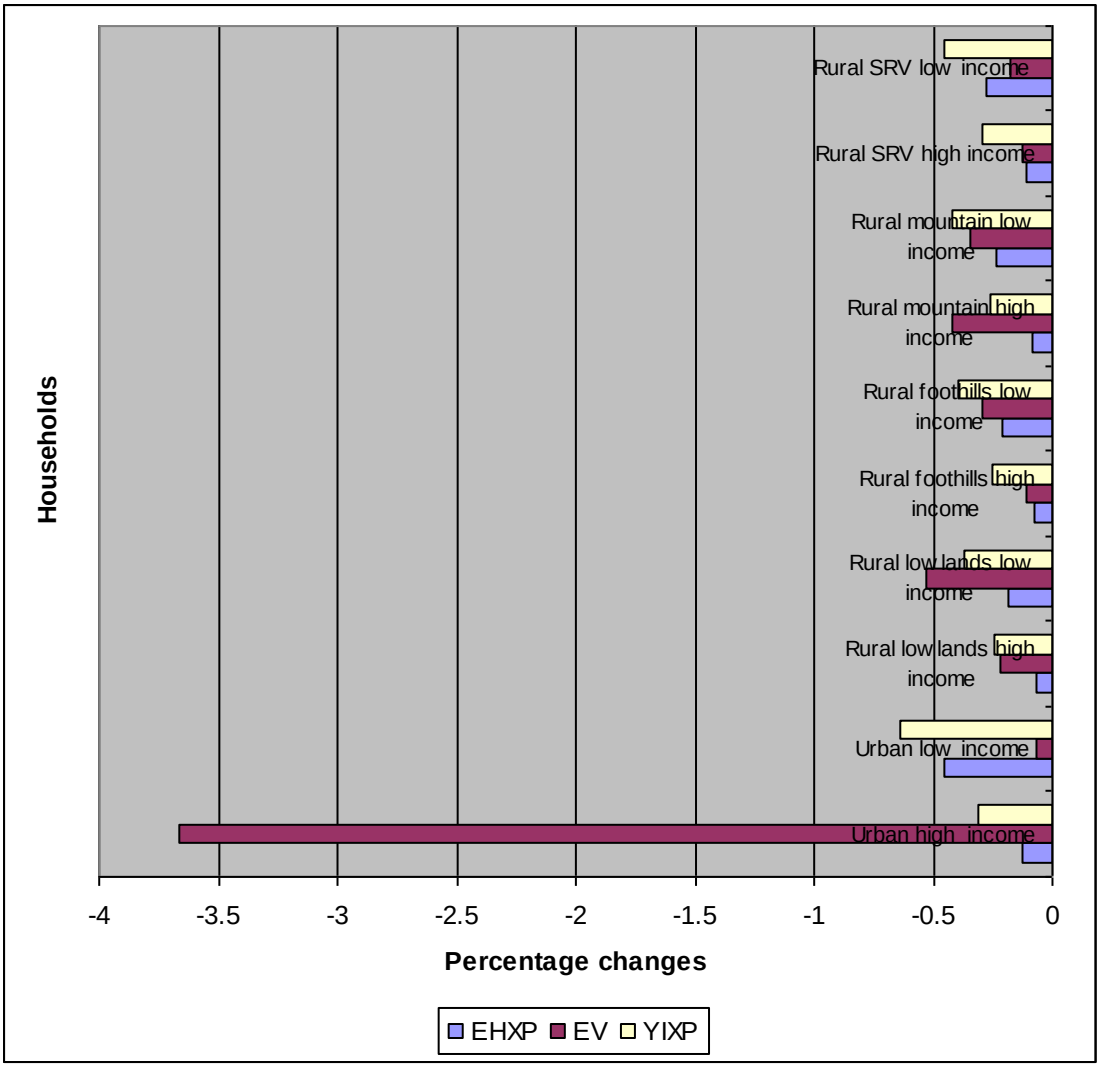
Source: Model estimation results

3.4 Household impact

The households were disaggregated into five groups: (i) urban areas, (ii) rural lowlands, (iii) rural foothills, (iv) rural mountains, and (v) rural Senqu River Valley (SRV). Disparities exist not only between urban and rural groups and between regions, but also between different income groups. To account for this, the household classification was further disaggregated into low- and high-income groups. The threshold levels were taken from the Consumer Price Index Report (BOS, 2001). Low-income households comprise all households with a monthly income of less than 500 Maloti, while high-income households have a monthly income equal to 500 Maloti or above.

According to Gohin (2003), one of the main tasks of applied economists is the computation and explanation of the welfare effects of policy reform or other shocks to the economy that may be of interest. The effects of the simulated results on household welfare in the Lesotho can further be measured by the concept of equivalent variation (EV). EV is a welfare measure indicating the money equivalent the households' is better (worse) off as a result of the shock/simulation.

As shown in Figure 2, EEP hardly cause aggregate Household consumption expenditure (EHXP) to changes (a decrease of 0.18%). Urban low-income households' EHXP decrease of merely 0.46% exceeds those of the rest. Similar small responses are to occur in terms of household income losses, which will vary from 0.64% downwards. Lesotho can experience a 5.96% loss in welfare (EV), largely concentrated among the urban high-income band who experience a welfare loss of 3.67%, whilst losses in other population groups be 0.53% or smaller.



Note: EHXP = Household consumption expenditure, EV = Equivalent variation, and YIXP = Household income

FIGURE 2: **HOUSEHOLD EXPENDITURE, INCOME, AND EQUIVALENT VARIATION**

Source: Model estimation results

3.5 Government and macroeconomic variables

Table 2 shows the effect of the EEP in the market access of textiles on macroeconomic variables. Gross domestic product (GDP) decreases insignificantly by 0.12% and 0.09% in nominal and real terms respectively. Government consumption decreases by 0.08% in nominal terms. Private consumption decreases by 0.12% and 0.11% in nominal and real terms respectively. None of these changes can be regarded as significant. The changed terms of trade also lead to a decrease in trade relative to the

GDP: export and import values decrease by 1.7% and 0.4 % respectively in real terms. Net indirect tax also decreases by 0.35% in real terms.

Table 2: GDPTAB1 and GDPTAB1P: GDP and national account (real and nominal) at EEP (Million Maloti)

		Value of gross domestic product (GDPBTAB1)		Percentage change of gross domestic product (GDPTAB1P)	
	BASE	NOMINAL	REAL	NOMINAL	REAL
ABSORP	9171.34	9156.772	9165.777	-0.159	-0.061
PRVCON	4941.5	4935.357	4935.937	-0.124	-0.113
FIXINV	2376.56	2369.624	2376.56	-0.292	0*
GOVCON	1853.28	1851.791	1853.28	-0.08	0*
EXPORTS	1280.79	1311.881	1309.228	-1.927	-1.698
IMPORTS	-4423.71	-4454.917	-4446.11	-0.618	-0.387
GDPMP	6009.06	6001.847	6003.497	-0.12	-0.093
GDPMP2	6009.06	6001.847	6009.06	-0.12	0*
NETITAX	1529.62	1540.988	1524.244	0.743	-0.351
GDPFC2	4479.44	4460.859	4479.408	-0.415	-7.03E-04

Note: * there is no measurable change

Source: Model estimation results

4. Conclusion and Recommendation

Erosion of preferential trade accesses of textile have unfavourable effect on welfare, trade and labour. Although the probable effect on some macro-economic variables cannot be regarded as significant, it

will clearly create economic hardship for a section of the Lesotho population, which is a poverty-ridden population by all standards.

Lesotho's export trade is highly concentrated, both in terms of products (textiles) and markets (South Africa and the US). The textile sector, a highly successful sector, has certainly set the benchmark for development in Lesotho. However, the erosion of preferential treatment/access certainly illustrates the need for any country, and certainly Lesotho, to strive toward diversification of export products as a pre-requisite for avoiding the risk of large setbacks and for a sustainable development of the country. However, export diversification is a complex issue. It is not simply a matter of looking for the next miracle product to give a magic answer. It is about providing a solid infrastructure within an economy and building upon that foundation this includes strong regional and global linkages. It is about where to put your priorities in order to maximise the marginal gain to the economy.

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