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**Poultry Production and Trade in the Republic of South Africa: a Look at Alternative Trade  
Policy Scenarios**

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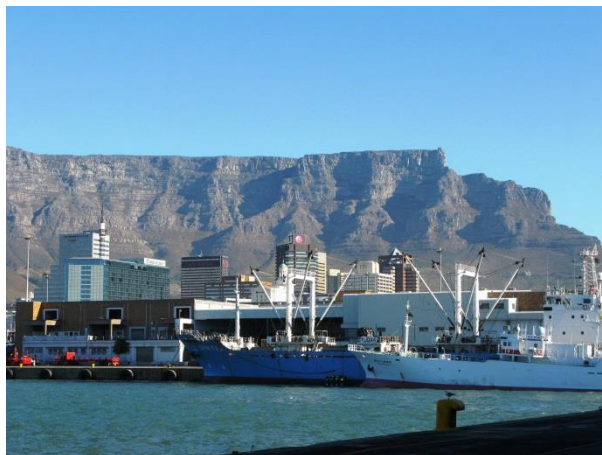
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# Poultry Production and Trade in the Republic of South Africa: a Look at Alternative Trade Policy Scenarios

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## *Research Objective*

This research presents a set of alternative trade policy scenarios for the long term outlook of the Republic of South Africa (RSA) poultry sector. Consumer demand for poultry has risen dramatically in the past twenty years, but domestic output has not been able to keep pace, and imports have been rising. In a drive towards self-sufficiency, the South African Government has raised tariffs on higher value chicken cuts, including anti-dumping duties imposed on U.S. chicken legs in 2000. However, even with this level of protection, a number of obstacles are inhibiting growth of RSA poultry output. Analysis by South Africa's National Agricultural Marketing Council (NAMC) finds that the RSA commercial poultry industry is technically efficient, but faces high feed costs, high transport costs, frequent power outages, and a number of institutional shortcomings.

Before 2000 the United States was the largest supplier of leg quarters to the South African market; after 2000, U.S. exports dropped nearly to zero. The United States is negotiating with South Africa to eliminate or reduce the duties on U.S. chicken, in the context of renewal of the African Growth and Opportunity Act (AGOA). We use an Armington-Cline spreadsheet-based model to simulate a reduction in the tariff on U.S. chicken. Then we use the USDA Baseline modeling framework to analyze the impact of the resulting increase in imports on the entire agricultural sector.

## *Background: U.S. and RSA Poultry Trade*

Immediately following the imposition of anti-dumping duties on the United States, Brazil became the largest supplier of leg quarters to RSA. However, RSA signed a trade agreement with the EU in 1999, and full liberalization of trade between RSA and the EU took effect in 2012. Under this agreement, tariffs on EU poultry went to zero. Starting in 2011 the EU took an ever greater share of the market for bone-in leg quarters, displacing Brazil. Some in the U.S. poultry industry think the United States could be competitive in this market if the anti-dumping duties were eliminated.

At the same time the AGOA, of which South Africa is a party, will expire next year. The U.S. poultry industry, which has been actively fighting the anti-dumping duties, is pressuring Congress to exclude South Africa from the renewal of the agreement unless it is granted better access to South African markets. The South Africans are strongly interested in continuing their

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<sup>1</sup> The views expressed are the authors' and do not necessarily represent those of the Economic Research Service or the U.S. Department of Agriculture

participation in AGOA and may thus be persuaded to ease the current barriers to U.S. poultry, but the South African poultry industry is a powerful lobbying force and is fiercely resisting any significant concessions.

A number of factors hold back the competitiveness of the South African poultry industry. The biggest impediment is high feed costs, which are the result of low and widely fluctuating corn yields and the need to import soymeal at a 6.6 percent tariff. Efforts are underway to improve corn yields through new varieties and to expand domestic soybean production and crushing.

**Structure of RSA Poultry Trade**

The bulk of South Africa poultry imports fall under 6 tariff lines shown in the table below:

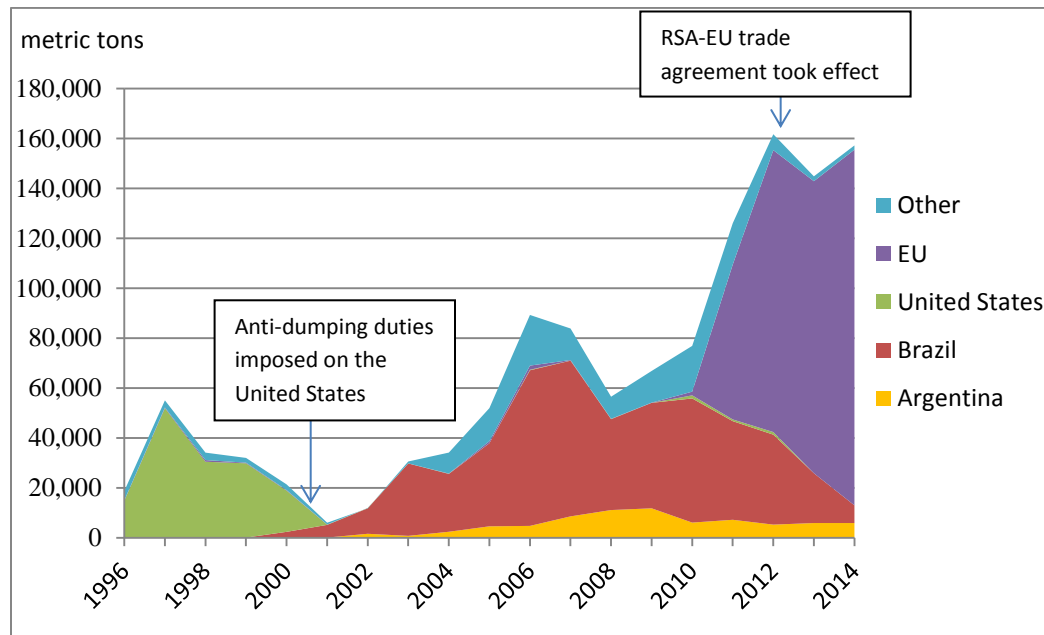
**South African tariffs on poultry imports by tariff code**

Tariff code	Product	Old tariff	New tariff*	EU **	United States	2014 share by volume
0207.12.10	MDM	0	0	0	0	0.37
0207.12.20	Carcasses	0.27	0.31	0	0.31	0.05
0207.12.90	Frozen whole birds	0.27	0.82	0	0.82	0.01
0207.14.10	Boneless cuts	0.05	0.12	0	0.12	0.03
0207.14.20	Offal	0.27	0.30	0	0.30	0.09
0207.14.90	Bone-in portions	0.18	0.37	0	9.4 rand/kg.***	0.40

\*New tariffs took effect October 2013  
 \*\*as of July 10 2014 antidumping duties on EU bon-in portions were imposed: 73% for Germany, 22.8% for Netherlands and 22% for UK.  
 \*\*\*This rate went into effect February 2012; previous duties were 2.24 to 6.96 rand per kg.

Source: USDA, Foreign Agricultural Service

**Suppliers of bone-in chicken legs to RSA market (tariff code 02071490) shift with changing tariff regimes**

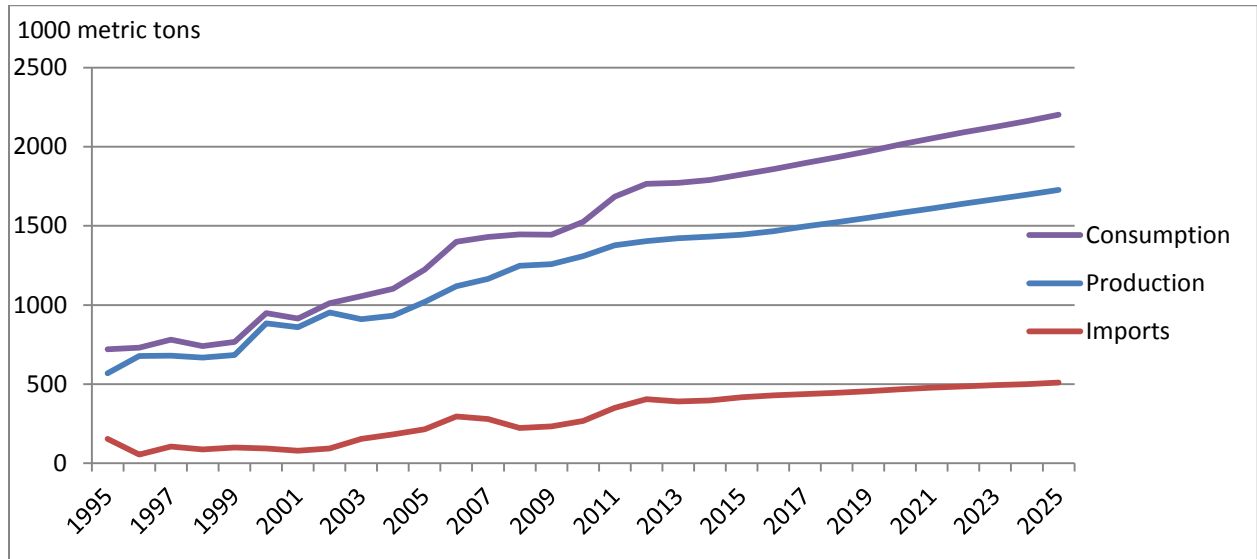


Source: USDA, Economic Research Service, using data from the Global Trade Atlas

**USDA Baseline Projects Rising Poultry Imports**

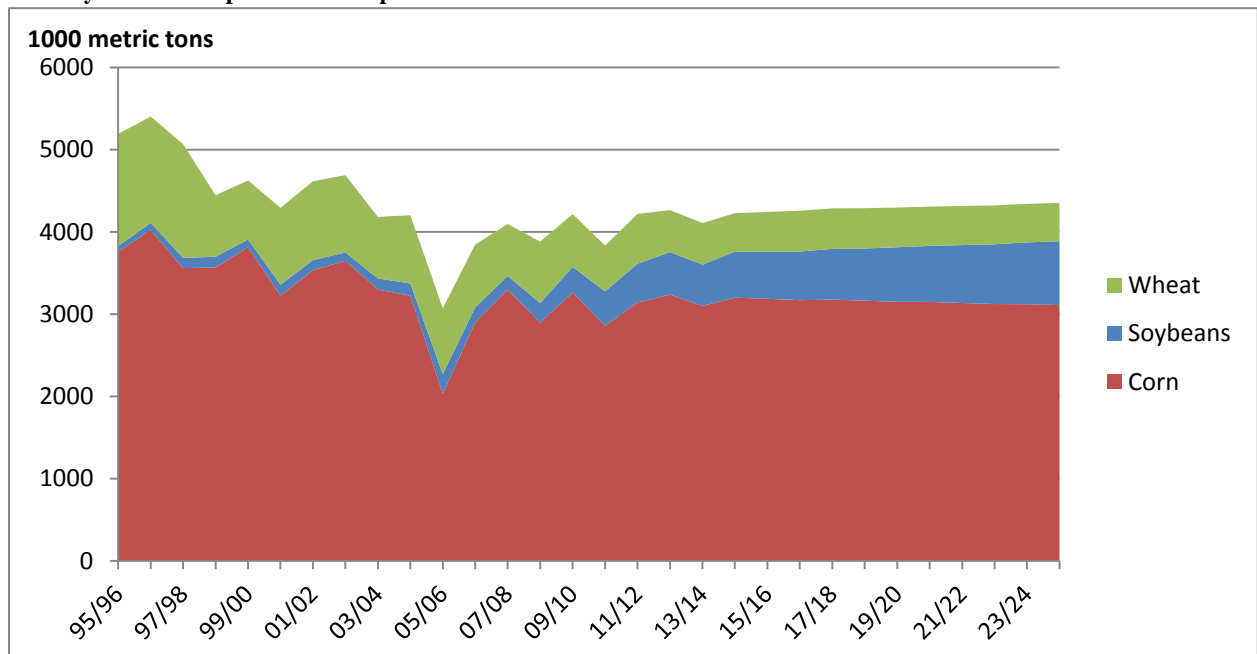
Ten-year projections for RSA in the USDA 2015 Baseline are based on assumptions of normal weather and a continuation of the current policy and institutional environment. Key results show a rise in poultry consumption driven by income growth. Domestic production also rises but fails to keep pace with demand, leading to rising imports. There is an expansion of area under soybeans, which draws area away from wheat and corn. RSA expands its crushing capacity, so that domestic soymeal production expands and imports decline.

**RSA poultry output grows but does not keep pace with demand**



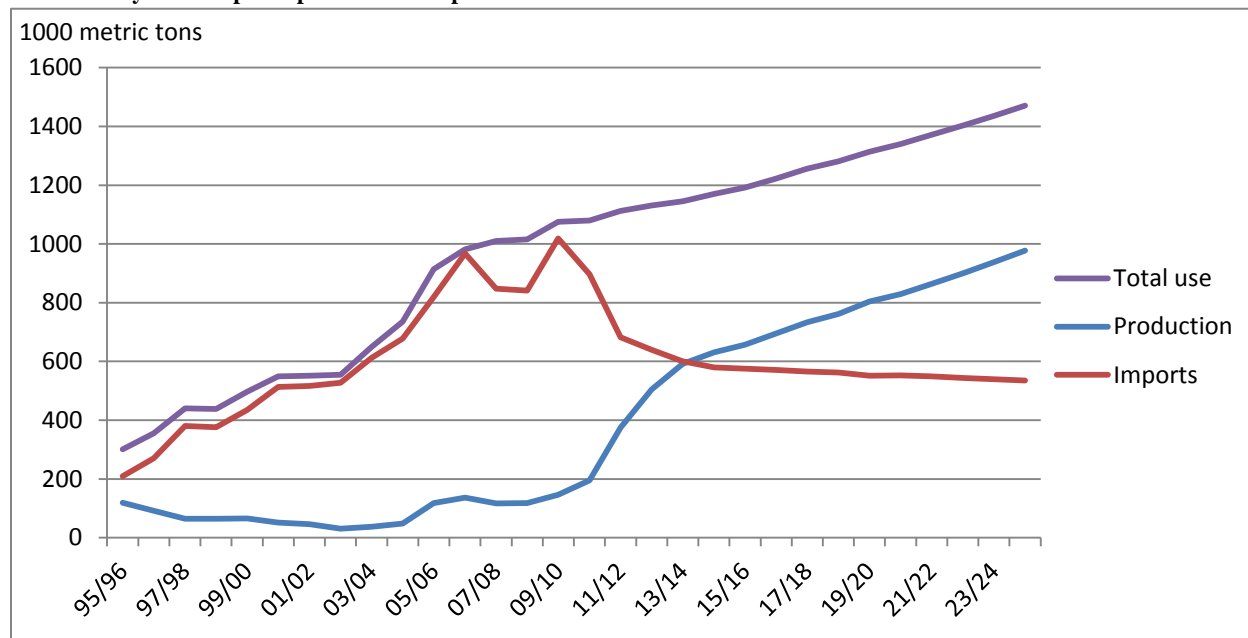
Source: USDA: Economic Research Service

**RSA soybean area expands at the expense of corn and wheat**



Source: USDA, Economic Research Service

### Domestic soymeal output expands while imports decline



Source: USDA, Economic Research Service

### Scenario: Reduction Of Duties On U.S. Bone-in Exports

The scenario presented below focuses on a reduction or elimination of the anti-dumping duties currently imposed on imports of bone-in portions (tariff code 02071490) from the United States. To do this we constructed a 6 by 6 trade matrix, averaged over the 2012-14 period. The trade matrix included RSA, the United States, the EU, Brazil, Argentina, and rest of world (ROW). In the base period Brazil, Argentina, and ROW faced the MFN tariff of 37 percent; the EU faced a zero tariff, and the United States faced an ad valorem equivalent tariff of 65 percent. We used the Armington-Cline framework described below to evaluate trade changes under two tariff reduction scenarios. Under the first, the tariff on U.S. exports was reduced to the MFN rate of 37 percent, while tariffs on other suppliers remained unchanged. The second scenario assumes that all suppliers, including the EU face a 37 percent tariff. Results suggest that under the first scenario, the United States would capture 35 percent of the RSA market for bone-in quarters; under the second, the U.S. share rises to 63 percent, the EU loses substantial share, and total RSA imports fall. These scenario responses are based on the simplifying assumption that the original 65 percent tariff is no higher than necessary to mostly shut off U.S. exports to RSA. Trade changes are shown in the following table.

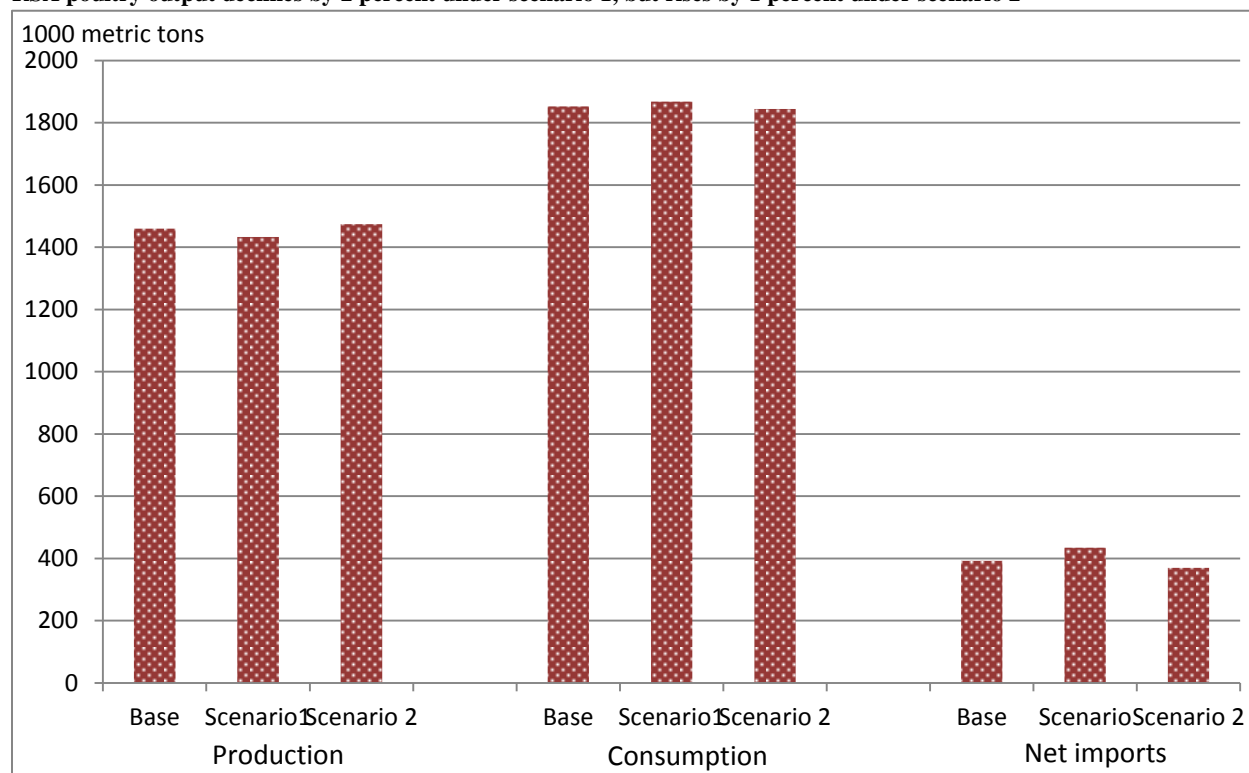
### RSA bone-in poultry trade: following tariff changes, the United States gains share at the expense of the EU

	Base	Scenario 1	Absolute change	Scenario 2	Absolute change
	1000 metric tons				
U.S. exports to RSA	0.8	70.7	69.9	81.9	81.1
EU exports to RSA	124.2	105.6	-18.6	16.7	-107.4
Total RSA imports	155.0	200.7	45.7	130.0	-25.0

Source: USDA, Economic Research Service, using data from the Global Trade Atlas

To analyze the impact of the tariff change on the entire RSA poultry/feed complex, we created two tariff shocks within the baseline framework. Before the tariff change, the trade weighted tariff on all poultry cuts was 34 percent. Under scenario 1, we lowered this tariff to 25 percent, in order to generate a 46 thousand ton increase in total RSA poultry imports; under the second scenario, the tariff was raised to 38 percent. The new tariffs were assumed to remain constant throughout the projection period. In general the impacts on the RSA agricultural sector are small under both scenarios.

### RSA poultry output declines by 2 percent under scenario 1, but rises by 1 percent under scenario 2



Source: USDA, Economic Research Service

We observe small changes in the corn and soybean sectors:

- There is almost no change in area planted to soybeans. Under scenario 1, there is a 1 percent decline in soybean crush and an increase in soybean exports. Under scenario 2, there is 0.5 percent increase in crush.
- There is a 1 percent decline in soybean imports under scenario 1 and a 0.6 percent increase under scenario 2.
- There is little change in corn area or production, but there is a 4 percent increase in corn exports under scenario 1 and a corresponding decline under scenario 2.

#### *Methodology*

The RSA country model used to make the baseline projections is a partial equilibrium model that includes behavioral equations for production, consumption, and stocks. The model covers 24 commodity markets, including wheat, corn, other feed grains, oilseeds, protein meals, and vegetable oils. For most commodities, imports or exports are residual; however, poultry is modeled with a market-clearing producer price and behavioral imports and exports. The model makes 10-year projections under neutral assumptions, including normal weather and a continuation of current policies. The RSA model with scenario tariff changes was run in the country-commodity linked system, which links 41 country models to derive a new set of equilibrium world prices.

The spreadsheet-based bilateral-bilateral model endogenizes destination choices by exporters, as well as source choices by importers, so exporter prices can be endogenized. The source and destination choices are combinations of trade substitution and trade expansion. Trade expansion is based on linear Cline equations. If an unscaled trade substitution level will increase, a linearized Armington-type calculation is used in order that substitution can grow significantly from small or zero initial trade levels. If an unscaled substitution level will decrease, the nonlinear Armington calculation is used; therefore, the solution is not vulnerable to an unscaled substitution sum approaching zero. The substitution between export destinations is assumed to be quite

price-responsive, to the extent that further increases in the export substitution responsiveness would not change the results significantly.

If a base bilateral trade level is small or zero, but the user believes that the level should be able to grow significantly in response to an effective price change, the user may set a switch so the model will calculate a synthetic linear responsiveness for that bilateral trade level, given total trade for one of the trading partners and the share in world trade for the other partner. Import prices are based on the corresponding export prices, adjusted by ad-valorem tariffs. Water in a tariff can be specified. Bilateral exporter prices are adjusted by a macro until bilateral imports equal exports.

### ***Conclusions and Directions for Further Work***

Negotiations between the United States and the RSA are still ongoing, and the final outcome at this time is unknown. One option under discussion is a tariff rate quota: imports of U.S. bone-in leg quarters would be allowed at the MFN tariff of 37 percent, up to a quota, and over-quota imports would be subject to the anti-dumping duty. It is not certain that the United States would agree to such a quota, and the exact amount of a proposed quota hasn't been announced. Our results assume no quota; the imposition of a quota would reduce benefits to U.S. exporters.

The RSA poultry industry is extremely concerned about their ability to compete in the world market without the current tariff protection. Our results suggest that reducing the tariff on U.S. poultry would not seriously impact the RSA poultry industry. If the RSA poultry industry could overcome some of the impediments to productivity growth, the country might be able to reduce imports even without tariff protection. NAMC constructed a policy analysis matrix (PAM), which shows the feed costs at market prices to be 18 percent higher than the *economic* cost. Further research will explore various scenarios for reducing these costs. Feed costs could be reduced through the introduction of drought resistant corn varieties and a reduction in yield variability. Costs could be further reduced through a reduction in transportation costs and a more reliable energy supply.