Research Application Summary

The impact of overvalued exchange rate policy on agricultural trade in Sudan

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Abstract

Since political situation has indicated that South Sudan would separate from the Sudan and the expectations of the country to lose its major source of foreign exchange from oil exports, the exchange rate of the Sudanese pound has deteriorated sharply. The main objectives of the study were to assess the responses of some economic variables (supply and demand) of agricultural commodities to exchange rate overvaluation policy adopted by the Central Bank of Sudan and their consequences on agricultural trade of the country. A multi-market model used as a main tool to assess the macro policy impact on the agricultural crop markets of the Sudan. The study results demonstrated that the overvalued exchange rate has a negative effect on the Sudanese agriculture trade sector, however, the expected more overvaluation of the currency entails more decrease in producer and consumer prices and, hence, a general decrease in agriculture exports as a result of the joint effect of decreasing supply and increasing demand. On one stream, the supplies of all crops show various levels of decrease under the overvaluation scenarios. On the other, all consumers markets tend to have an increasing demand because of the overvalued low consumer prices which will enhance consumer's accessibility to food markets.

Key words: Agricultural crop markets, consumer process, exchange rate, multi-market model, Sudan, trade sector

Résumé

Depuis que la situation politique a indiqué que le Sud du Soudan se séparera du Soudan et les attentes du pays à perdre sa principale source de devises à partir des exportations de pétrole, le taux de change de la livre soudanaise s'est nettement dégradé. Les principaux objectifs de l'étude étaient d'évaluer les réponses de certaines variables économiques (offre et demande) de produits agricoles à la politique de surévaluation du taux d'échange adopté par la Banque Centrale du Soudan et leurs conséquences sur le commerce agricole du pays. Un modèle multi-marché est utilisé comme un outil principal pour évaluer l'impact des macro-politiques sur les marchés des

produits agricoles du Soudan. Les résultats de l'étude ont démontré que le taux de change surévalué a un effet négatif sur le secteur soudanais de commerce des produits agricoles. Cependant, la surévaluation plus attendue de la monnaie entraîne plus de baisse des prix de production et de consommation et, par conséquent, une baisse générale des exportations de produits agricoles comme un résultat de l'effet conjoint de la diminution de l'offre et de l'augmentation de la demande. D'une part, les fournitures de toutes les cultures montrent différents niveaux de la diminution en vertu des scénarios de surévaluation. D'autre part, tous les marchés de consommation ont tendance à avoir une demande croissante en raison des prix surévalués de consommation faible qui permettront d'améliorer l'accessibilité des consommateurs aux marchés alimentaires.

Mots clés: Marchés des produits agricoles, processus de consommation, taux de change, modèle multi-marchés, Soudan, secteur du commerce

Background

Since the political situation has indicated that South Sudan would separate from the Sudan and the expectations of the country to lose its major source of foreign exchange of oil exports, the exchange rate of the Sudanese pound has deteriorated sharply. The Sudanese Ministry of finance and Economic Planning (SMFEP) estimates show that long-term fiscal adjustment may need to accommodate a total revenue loss as high as 36.5% (World Bank , 2010) . As a result, Sudan faces the challenge of balancing fiscal consolidation against the pressing needs of the development agenda. The Central Bank of Sudan (CBOS) has adopted an administrative price policy for exchange rate which is well below the parallel market price.

The continuous pressure on the exchange rate has prompted the CBOS to undertake a depreciation of the Sudanese pound of about 19%. The central bank introduced a daily premium for purchases of the Sudanese pound (currently equivalent to about 19%) on top of the official exchange rate, in a bid to close the gap with the parallel market rate. Gross international reserves continued to decline, as a result of shortfalls in external financing as well as the authorities' exchange rate and intervention policies in the run-up to the depreciation (IMF, 2010).

Literature Summary

If a country's exchange rate is overvalued, commodities such as food crops that normally are traded internationally either as imports or as exports are undervalued. Farmers receive less

for their crops than they would if the price of foreign exchange were market-determined. Hence overvalued exchange rates act as an implicit tax on agriculture. All consumers of food and other traded goods are thus subsidised indirectly because of the low prices for these items. The government budget is also relieved of part of the direct burden of providing any food subsidies since these are shifted to food producers through lower prices. Consequently, the tendency toward overvalued exchange rates has a strong biasing effect on the food system. This favours urban food consumers but penalise rural food producers. If a country begins with a fixed exchange rate that correctly prices its currency relative to foreign currencies, then the demand for foreign exchange is matched by its supply. Domestic inflation, however, places pressure on the country's fixed exchange rate because import demand will increase in the face of lower relative prices for imported goods, export earnings will decline because of decreased demand for the goods the country sells, and the market for foreign exchange will not clear at the fixed exchange rate without capital inflows (Timmer *et al.,* 1983).

Study Description

In this paper a multi-market, partial equilibrium model is used as a main tool to assess macro policy impact on the agricultural crop markets of the Sudan. Partial equilibrium models are the most widely used models to assess the effect of various policy interventions in agricultural sector. Multi-market analysis is a tool for simulating the effects of agricultural price policies on outcomes considered of interest to policy makers (Braverman and Hammer, 1986). In this study, the Sudanese economy is modeled as a small open economy on both the import and export sides of the agricultural commodities. The model under consideration takes the normal specification of a standard partial equilibrium model; it is static and consists of a set of demand and supply equations for each commodity with level of supply and demand determined by factors including prices, income, demand and supply shift variables and various other assumptions about policies (Jechlitschka *et al.*, 2007). In specifying supply and demand functions for each product market, domestic prices for one market help to determine the quantity supplied and demanded not only in that market but also in the other markets through cross-market price linkages. Price transmission equations in the model establish links between producer price (for producers of exportable products and of import-substitute products) and the consumer price and the world market price. Ten key agricultural crops of the Sudanese agriculture are

considered in the model. The major export crop markets are sorghum, millet, sesame, ground nut, cotton, gum arabic and livestock, while, wheat and rice are the main import substitutes.

Research Application

The trade effect. In general the overvalued exchange rate has a negative effect on the Sudanese agriculture trade sector. Unfortunately. the expected more overvaluation of the currency entails more decrease in producer and consumer prices and, hence, the eventual decrease in agricultural exports will be a result of the joint effect of decreasing supply and increasing demand.

Table 1 demonstrates the simulation results of trade indicators for the three scenario models. With regard to export indicators, total exports of the agricultural crops covered in the model would decrease considerably in response to the overvaluation of 20% and 40% in the first and second scenarios. The growth rate of exports shows a decrease by 16% of agricultural exports growth. The decrease in total exports is attributed to the remarkable decrease of exports of sorghum, millet, sesame, ground nut, cotton and livestock. Further overvaluation in the second scenario would result in more decrease in export growth rate to reach 59%.

Table 1. The effect of overvalued exchange rate on trade.

Trade indicators	Basic scenario	First scenario (over valuation of 20%)	Second scenario (over valuation of 40%)
Growth rate of exports (%)	45.1	-16	-59
Export propensity	6.7	4.9	2.5
Import penetration	77.5	80.3	83.2
Marginal propensity to import	0.157	0.249	0.483
Export /import coverage	1.342	0.8	0.6

Export propensity index shows that domestic farmers earned about 6.7% of their income from foreign trade in 2006; this ratio would decrease to 4.9% in response to 20% decrease in the value of foreign currency in the first scenario. However, because of the more expected overvaluation and a decrease in exports, this index will fall to 2.5% in the second scenario.

On the side of import indicators, the import penetration index is used as the basis for specific policy objectives targeting self-sufficiency. It provides an indication of the degree of vulnerability to certain types of external shocks. The index shows that 77.5% of domestic demand of wheat and rice was satisfied by imports

at the 2006 world prices, while, this ratio could increase at 20% overvalued simulated prices to reach 80.3% because of the increase in imports of wheat and rice as a consequence the low consumer prices. In the second scenario the index will reach 83.2% reflecting the increase in imports as a result of the low prices of import substituting crop markets. The marginal propensity to import index explains that relative changes in imports at the 20% overvalued prices which represents about 0.249 of the GDP changes in comparison to 2006 prices of only 0.157. This index would increase under the scenarios of more devaluation of 40% to reach 0.483 of the GDP changes. Finally, the export import coverage index show that exports could cover 1.3 folds of imports at the normal free trade prices of 2006 in the baseline model. However, this index will be reduced to 0.8 at the overvalued exchange rate of 20%, because at this level of producer prices this sector might lose export markets of sorghum, millet, sugar and livestock. The coverage in the second scenario of 40% overvaluation would entails more exports reductions to reach 0.6, that is result of the more increase in the amount traditional imports and the reduction of exports.

Acknowledgement

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