

**No. 6. SUGAR: policy insights from analysis of sugar sector reform****SUMMARY**

- ▶ *Pervasive distortions in national sugar markets make analysis of the impacts of reform particularly difficult*
- ▶ *Most model-based analyses of sugar sector reform predict significant increases in the average post-reform world sugar price*
- ▶ *Such predictions are likely to be misleading because:*
 - *most models fail to capture the complexity of sugar sector policy and reform proposals*
 - *most models inadequately reflect potential supply responsiveness of major exporting countries*

Sugar cane or beet is produced in over 130 countries with sugar cane representing between 74 and 77 percent of global production. Developing countries currently account for about 67 percent of world production (in 1998-2000). Also production is becoming more concentrated among countries. In 1980, the top 10 producers¹ accounted for 56 percent of global production; by 2004, they accounted for 69 percent. World sugar consumption is expanding, reflecting rising incomes and shifts in food consumption patterns. Developing countries account for more than 67 percent of current global sugar consumption,² and these countries – particularly in Asia – are expected to be the primary source of future demand growth.

International sugar prices have fallen as domestic production in traditional importing countries has increased, underpinned by domestic support. Subsequently, global export value declined from US\$9.8 billion in 1980 to US\$4.7 billion in 2003, significantly eroding export revenues of many developing countries,³ particularly in low-income food-deficit countries (LIFDCs) whose share of world exports decreased from 16 percent in 1980 to about 7 percent in 2003. Trade under preferential agreements in sugar is important for a number

¹ Brazil, European Community (EU), India, China, United States of America, Thailand, Mexico, Australia, Colombia and South Africa.

² The ten largest consumers (on average) include India, the EU, Brazil, United States of America, China, the Russian Federation, Mexico, Pakistan, Indonesia and Japan.

³ The top ten sugar exporters (on average, for both raw and refined sugar) include Brazil, the EU, Australia, Thailand, Cuba, Guatemala, India, South Africa, Turkey, and Colombia.

of developing countries. The Everything But Arms initiative (EBA) of the European Union (EU), the Sugar Protocol between the EU and the African, Caribbean and Pacific (ACP) countries, the Caribbean Basin Initiative (CBI), and the African Growth and Opportunity Act of the United States (US) are examples of such trade agreements.

Brazil is the major player and the most competitive supplier in the world sugar market, with the lowest production costs (field and factory).⁴ The country has significantly increased its exports over the last five years, driven by record production, ethanol deregulation and currency devaluations.

The international sugar market is among the most highly distorted of all agricultural commodity markets with widespread use of domestic support and trade policies. Economic analyses have attempted to demonstrate the gains, particularly in terms of higher global sugar prices that would result from sugar liberalization.

How useful are such analyses in informing policy makers of the potential impact of future reforms? Are predicted price increases, sometimes in excess of 40 percent, realistic? Do the models provide adequate information on the winners and losers from reforms? This Trade Policy Brief draws on a detailed technical assessment⁵ of contemporary model-based analyses to

⁴ LMC Worldwide Survey of Sugar and HFCS Production Costs, 2000 Report, Oxford, LMC International.

⁵ FAO Trade Policy Technical Note No.6 provides greater detail on the technical issues raised in this brief and includes a full set of references: http://www.fao.org/trade/policy_en.asp.

determine what the results imply and the insights they can provide to policy makers and negotiators.

1 What are the current policy instruments in sugar markets?

To assess reforms, an appreciation of current policies is critical in developing analytical models and interpreting the results.

The EU's sugar policy supports producer prices above international levels with production quotas, import controls and export refunds. There are two types of production quota: A and B, with the major difference between the two being the value of the levies applied. Member States are free to produce above the A and B quota levels, but to avoid the negative impact that this out-of-quota sugar ("C sugar") might have on domestic prices, it must all be exported from the EU and does not receive export refunds. EU sugar policy also incorporates the EU/ACP Sugar Protocol (SP) and Special Preference Sugar (SPS), which give certain countries total exemption from import duties up to agreed quantities. The quota under the SP is 1.29 million tonnes white sugar equivalent (w.s.e), and under SPS, the quota is 218 581 tonnes w.s.e.

The European Council has recently accepted substantive reforms to the EU Sugar Regime, which includes a 36 percent reduction in the domestic support price over four years beginning in 2006/07. In addition, a compensation package will be given to farmers for 64.2 percent of the price cut through a decoupled payment linked to agreed environmental and land management standards, as well as a scheme aimed at supporting processing firms which are restructuring or leaving the industry.

In the United States, regulation is through domestic market allocations and restrictions on imports. Following the Uruguay Round Agreement the United States converted sugar import quotas into tariff rate quotas (TRQs). There is a low-tier tariff of 0.625 US cents/lb (1.375 US cents/kg) on imports within a projected quota of 1.21 million short-tons raw value (STRV) for FY 2005. Imports above the quota incur a prohibitive high-tier tariff of 16 US cents/lb (35.2 US cents/kg). To restrict domestic production, a marketing allocation arrangement determines the amount of sugar millers and processors can sell on the domestic market. If the projected supply (domestic production and imports) exceeds domestic demand it triggers the marketing allocation.

Japan's sugar policy is more protectionist, although not impacting on the world market to the same extent as EU or US policy. Sugar beet prices are five times those in the US and the sugar cane price is ten times higher than in

Australia. Japanese production would almost certainly fall significantly if producers received current world prices.

Partly as a result of distorted market conditions, some countries which might otherwise be more competitive than the EU, the US or Japan have also instituted sugar sector policies.

Australia provided an AUS\$444 million reform package to its sugar industry in 2004, including AUS\$96 million for less efficient farmers to assist them in leaving the industry. Under the Single Desk Policy, Queensland Sugar Limited (QSL) acquires all raw sugar and must sell it in the domestic market at the prevailing export parity price. When exporting sugar, QSL uses a c.i.f. selling policy. Brazil has used producer subsidies when other countries' sugar policies have depressed world prices. Government policy on ethanol production from sugar also affects Brazilian sugar exports.

There has been growing pressure for sugar sector reform for a variety of reasons; see Box 1.

• **Box 1 – Pressures for reform**

- *Internal budgetary pressures - arguably the most important drivers of policy change - have stimulated Common Agricultural Policy (CAP) reform and reductions in United States support prices.*
- *The Uruguay Round Agreement on Agriculture resulted in the conversion of non-tariff import barriers into tariffs to be bound and reduced over an implementation period. Countries agreed to allow imports up to a minimum of 3 percent of consumption. TRQs aim to deal with the concern that tariff binding would prohibit imports up to the minimum amounts.*
- *WTO Disputes Panel ruling - in October 2004, a WTO panel ruled that the EU cross-subsidized 2.7 million tonnes of exported EU "C" sugar with high guaranteed prices paid for A and B quota sugar. EU policy needs reform to avoid future implicit subsidization of exports.*
- *Everything but Arms - in March 2001 the EU signed the Everything but Arms (EBA) initiative with 48 Least Developed Countries (LDCs). This arrangement will gradually reduce duties on sugar until full duty-free access applies in July 2009.*
- *Economic Partnership Agreements (EPAs) - the EU is negotiating with ACP countries to include sugar under the proposed EPAs. The unilateral trade preferences will continue to apply during the interim period, 2000 to 2007.*
- *Regional Trade Agreements - of particular concern to United States policy makers are the obligations under NAFTA, which specify a declining high-tariff rate for Mexico for raw and refined sugar over the transition period to free trade in 2008.*

Table 1. Percentage changes in world sugar prices

Study/trade liberalization scenario ¹	Developed countries only	US only	EU only	US and EU combined	Multilateral liberalization
Beghin et al (2003)		13.2			47 *
Koo (2003)		32.8	21.6	68.2	
Wohlgenant (1999)	10				43.2
Devadoss, Kropf (1996)					9 **
Sheales et al. (1999)		17.0			

*El-Obeid and Beghin (2004) use the model used in Beghin et al (2003).

**Simulation of Uruguay Round only.

¹ FAO Trade Policy Technical Note No. 6 provides the full set of references:

http://www.fao.org/trade/policy_en.asp.

Although the policy set likely to result from such pressures is complex, the policy specification in most models is simple, with the effect of trade and domestic policy generally captured by a price wedge between domestic and world prices. However, estimates of these wedges vary significantly across studies.

A series of WTO provisions are most likely to impose reductions in sugar market policies, particularly commitments with respect to market access, domestic support, and export subsidies. Market access will be of considerable concern during the Doha Round as sugar tariffs are amongst the most prohibitive relative to other agricultural products. Domestic support is also high and includes production quotas, producer price guarantees, processing loans, regulated consumer prices, limits on production of alternative sweeteners and state protection and/or intervention through ownership or investment in domestic industries. The WTO Uruguay Round negotiations resulted in minimal reductions in sugar trade distortions; as such, significant progress in the Doha Round is crucial for many countries.

2 What are the estimated world price impacts of reform?

Most contemporary studies focus on the world price impact.⁶ The price increases most often cited refer to full multilateral trade liberalization, but models have simulated a number of different scenarios. Table 1 shows a range of price changes from different studies for selected liberalization scenarios.

In the case of multilateral liberalization, estimates of world sugar price changes vary from 9 percent to 47 percent. Under a scenario where only the EU liberalizes, one study projected that world prices would rise by about 22 percent; while another estimated that if only the US liberalizes, changes in world sugar prices

would range between 13 percent to 33 percent, respectively. Results from a study conducted by FAO in 1999 showed that in the case where only the developed countries liberalize, world sugar prices would rise by 10 percent.

Among the three pillars of the agricultural negotiations - market access, export competition and domestic supports - studies suggest that market access is likely to have the largest impact on the sugar market. However, domestic support measures are also prominent in a number of producing countries. In the area of export competition, a recent WTO arbitration panel ruled in favour of Australia, Brazil and Thailand against export subsidies of the EU.

Negotiating positions of the major players under the current round of WTO negotiations on sugar will depend to a large extent on the nature and structure of their domestic sugar industry. The larger and more competitive exporters like Brazil are likely to gain from substantive cuts in sugar import tariffs. Therefore, they are likely to advocate improved market access through substantial tariff reductions, while other developing countries such as the ACP sugar producers, who benefit from preferences, are likely to argue for the continuation of their preferential access to markets like the EU.

The challenge in the current round of negotiations is to forge an agreement that balances the desire to cut back on trade distorting measures that limit production and trade opportunities with the need to counteract the negative impact of the erosion of trade preferences for developing countries, and in particular, for the smaller, export-dependent economies, which are unlikely to sustain rapid changes in resource allocation.

A basic conclusion that could be drawn from all of the model results is that the world sugar price will increase significantly following sugar sector reform. However, in addition to simulation differences, there are a number of reasons why the impacts appear so large as well

⁶ As FAO Trade Policy Technical Note No.6 explains, estimating impacts on trade flows is problematic.

as why the results differ, most notably assumptions about the responsiveness of supply among sugar producing countries.

3 Why the price predictions may be wrong - the responsiveness of supply

The responsiveness of different countries' sugar sectors to world price changes influences the estimated world price impact and the extent to which countries gain or lose from policy change. The supply response of Brazil is key to future global sugar market conditions. Brazil has not expanded exports significantly after previous cyclical price increases and empirical estimates of supply elasticities, which in turn are assumed in the various models, have been low. But experts have queried whether a similar response will recur. They believe that the sugar supply in Brazil now has the capacity to respond considerably to even small export price increases.

The supply response assumptions have obvious implications for model-based results and their interpretation. Sugar experts argue that Brazil's potential supply response would prevent significant price increases. Models predicting price increases of 40 percent or more do not accurately account for Brazil's supply response potential.

An alternative approach to using a modelling framework is to estimate production costs, comparing them to different hypothesized post-reform prices to determine at what point countries enter the market as competitive players. However, there are a number of problems with this. They include: a) limited focus on the profitability of a country's production, net of transport costs; b) little consideration of incentives to expand production which depend on more than just cost advantages; and c) the fact that the lowest cost producer will not necessarily have the greatest response to a price increase as many low cost developing country exporters have major supply constraints. The above imply that in addition to average costs it may be appropriate to also compute and compare marginal costs.

4 What are the implications of reform for individual countries?

Apart from the limitations of model based analyses of the world price impacts of sugar policy reform, the implications for individual countries is also an important policy issue.

Unfortunately, existing models do not disaggregate countries sufficiently to estimate the impact of, for example, trade preference erosion on ACP countries. Most studies focus on the major producing countries, but seldom disaggregate for developing countries likely to be affected by reform. This limits the use of the models to determine impacts beyond the world market price. Within the country groups defined in models, the benefits to winners can cancel out the costs to losers and the overall impacts on country groups can appear small. This makes identifying individual winners and losers difficult.

Available research analysis at a more disaggregate level suggests that the impact of EU reform on individual ACP countries is ambiguous, as the erosion of preferences may be compensated by higher world prices for some ACP producers, and by the extended market access brought about by the EBA preferential initiative. Quantitative assessments indicate the possibility that this will bring about some significant trade diversion⁷ effect between the ACP and the LDCs. However, the ability of this latter group to increase its presence in the EU market may be constrained by their ability to expand domestic supply, and by the availability of trade infrastructures. Recent scenario analysis suggests that additional exports from LDCs under the EBA are likely to be of the order of 500 000 tonnes.

A comparative analysis of the costs of production in ACP countries suggests that low cost producers, mainly in Africa, could survive if preferential access were removed. Some will need restructuring to improve their competitiveness, while the higher-cost producers are unlikely to survive. A variety of other factors including economic and political stability, weather, and appropriate marketing strategies which include an appropriate mix of product differentiation and effective value-addition, will impact on the sustainability of the ACP sugar sector.

⁷ Trade diversion involves the reduction of imports by an importing preference-giving country, from an alternate supplier who is more competitive than the one receiving preferences.