# Effects of EU Sugar Trade Reforms on Poor Households in Africa
# A General Equilibrium Analysis

*Elisabetta Gotor & Marinos Tsigas*

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# Policy Questions

- Is trade liberalization a vehicle for poverty reduction in developing economies?
  - Particularly when certain countries are highly dependent on a single export crop that enjoys preferential access to protected markets

- Why do we use trade to analyse poverty?
  - trade spillovers affect government decisions and households behaviours.

# How do we address these policy questions?

- EU & Sugar

- Describe the sugar trade scenario involving ACP countries.

- Analyse the impact of the EU sugar trade preferences erosion in ACP household income distribution.

# The EU Sugar regime with ACPs

- 17 ACP States ( both LDCs and non-LDCs) have country specific TRQs at a zero duty

  - EPAs from 2009
    - Duty and Quota free access for all ACP (under negotiation)

  - EBA from 2009
    - Duty and Quota free access for all LDCs

# …Its Effects - Hierarchy of Preference

■ Certain developing countries have access to the EU market at the expense of other developing countries.

■ This created a twofold result:

- ■ Special preferences boosted production and exports of sugar independently of world price fluctuations, favouring continued use of old technologies.

- ■ Developing countries that do not enjoy special preferences, (e.g. Brazil) have developed new sugar production strategies in order to strengthen comparative advantages by attracting foreign investment and by developing modern refining technologies that are more cost efficient.

# EU sugar Reform has begun

- 36% cut in domestic support price over 4 years

- Export Subsidies will be eliminated by 2013 under Doha Round

- Sizeable cuts in import tariffs to be expected as a result of Doha.

# …affecting ACP households

- The EU intervention price will be cut by 36 per cent over four years. The minimum guaranteed import price for ACP countries signatories of the SP will move in line with the EU intervention price.

- Will ACPs be able to produce and export sugar into the EU market at € 404 per tonne rather than € 632 per tonne?

- How will different households be affected?

# Objective of the Study

The aim of this paper is to analyse the impact of the EU sugar trade regime reform in the Sugar Protocol (SP) on poor households in Africa.

# Methodology

- Our analysis is based on an appropriately modified version of the GTAP global trade, AGE framework (Hertel, 1997).

- Our modifications involved the introduction of
  - a *HOUSEHOLDS* set in the GTAP model;
  - an $h$ index, with $h$ in *HOUSEHOLDS*, in all household commodity demand and factor-service supply variables and equations.
  - Final demand         are changed
  - Factor ownership

# The revised model allows us to assess welfare effects among 10 household groups in each region.

| Rural Medium Poor | Rural Medium | Rural Medium Rich |

Rural Poor

**WELFARE EFFECTS**

Rural Rich

Urban Poor

Urban Rich

| Urban Medium Poor | Urban Medium | Urban Medium Rich |
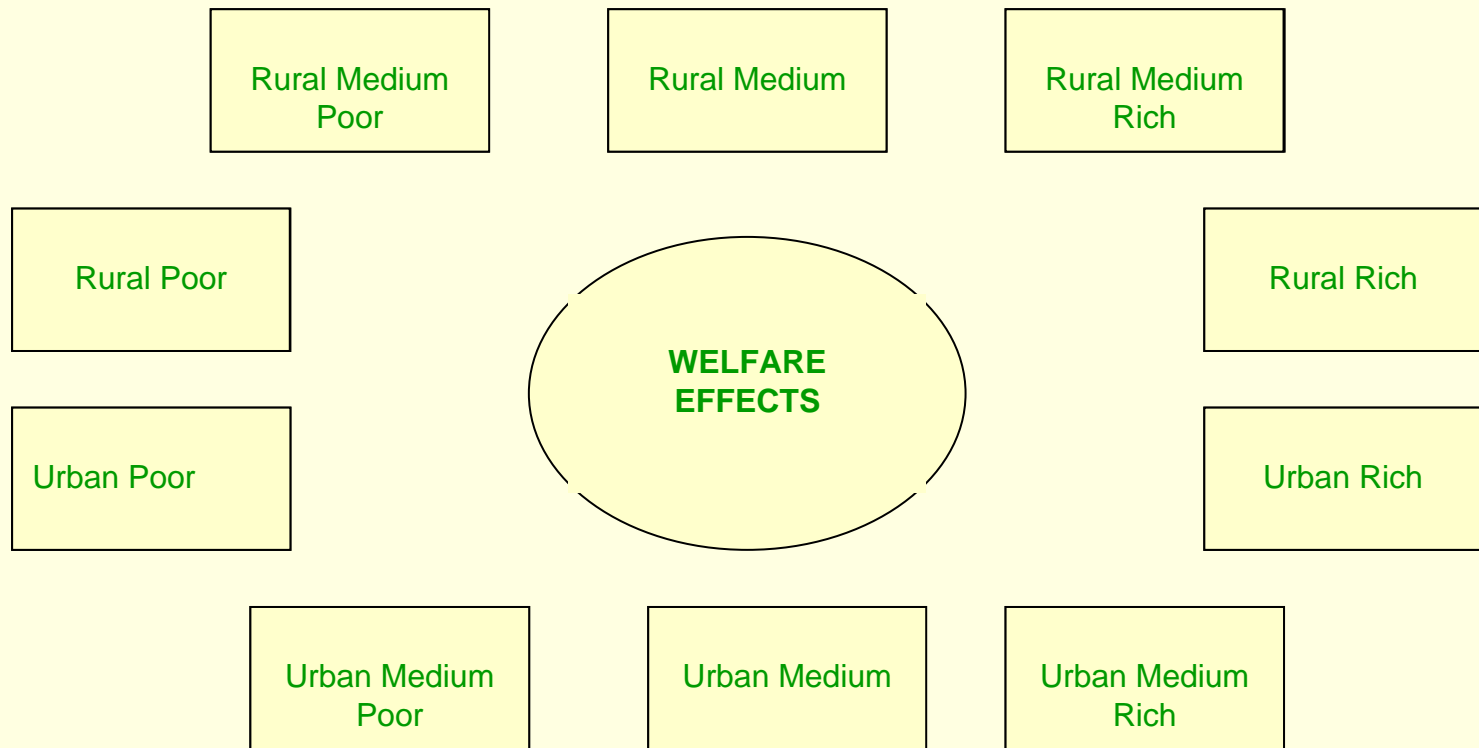
# Simulation

- The results reported here are from a simulation where

    - domestic assistance for EU sugar crop producers is reduced by 50 percent and
    - the EU sugar TRQ is removed.

# Country Aggregation

| GTAP Aggregation | Multi Household Region Identified |
|---|---|
| EU25 | |
| X-Developed | South Africa. |
| Brazil | Brazil |
| Botswana | Botswana |
| Mauritius | Mauritius |
| Nigeria | Nigeria |
| Zimbabwe | Zimbabwe |
| Caribbean | |
| Pacific | |
| X-Developing | |
| X-Sub-Saharan | Burkina Faso, Central African Republic, Cote d'Ivoire, Djibouti, Ethiopia, Guinea, Guinea Bissau, Ghana, Gambia, Mauritania, Mali, Niger, Senegal, Sierra Leone. |
| Mozambique | |
| XSACU | Lesotho, Namibia, Swaziland |
| Malawi | Malawi |
| XSADC | Angola |
| Tanzania | Tanzania |
| Madagascar | Madagascar |
| Zambia | Zambia |
| Uganda | Uganda |
| X-LDCs | |

# *Aggregate Welfare Results From Reducing Tariff of EU sugar Imports ($US million)*

| Region | % Change in Welfare | Welfare Effect | Allocative Effects | ToT Effects |
|---|---|---|---|---|
| XSC - All non LDC but ACP. Only Swaziland benefits from the SP | 1.83 | 81.90 | 5.24 | 76.60 |
| Malawi - LDC and SP | -0.07 | -1.08 | -0.25 | -0.82 |
| Tanzania - LDC and SP | -0.01 | -0.67 | -0.17 | -0.50 |
| Zimbabwe - SP | 0.03 | 2.43 | 0.27 | 2.16 |
| XSD - Seychelles ACP, non SP, Angola and Congo LDCs | -0.04 | -7.52 | -0.95 | -6.57 |
| Madagascar - LDC and SP | 0.00 | -0.11 | -0.03 | -0.08 |
| Uganda - LDC and SP | 0.00 | -0.09 | -0.02 | -0.07 |
| Brazil- Sugar exporter but neither ACP non LDC | 0.00 | 20.98 | 4.92 | 16.06 |
| EU25 | 0.01 | 486.81 | 586.45 | -99.64 |
| ROW | 0.00 | 18.44 | 6.21 | 12.23 |

# *Primary factor Prices*

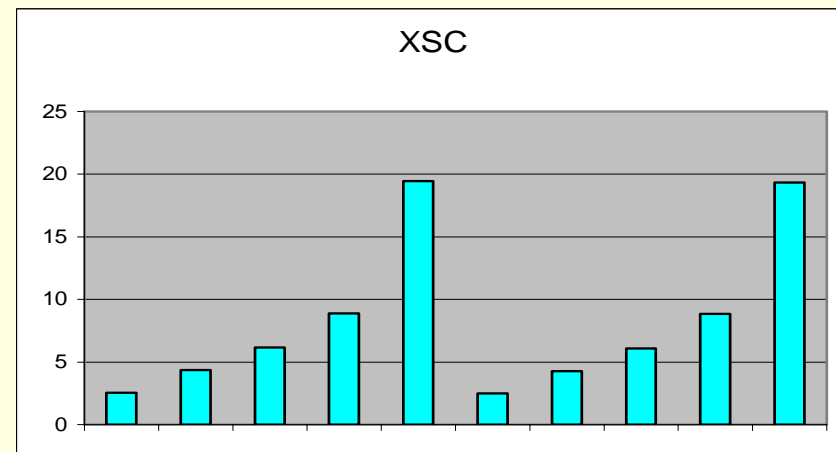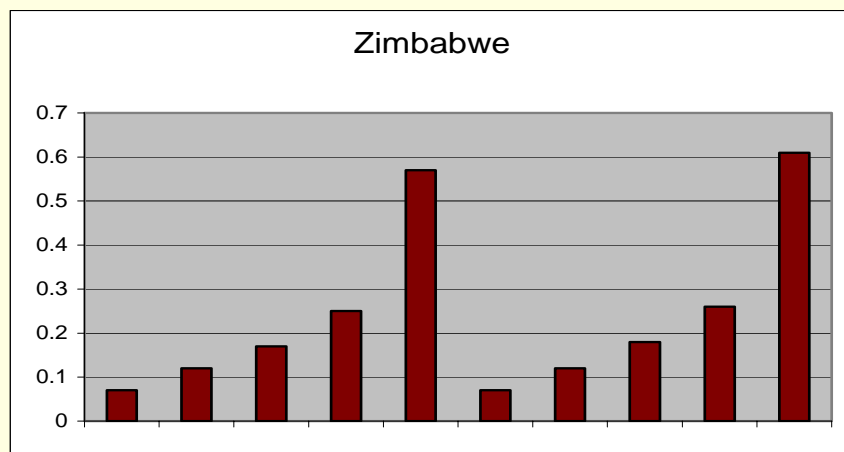| | XSC | Malawi | Tanzania | Zimbabwe | XSD | Madagascar | Uganda | Brazil | EU25 | ROW |
|---|---|---|---|---|---|---|---|---|---|---|
| Land | 84.58 | 0.56 | -0.03 | 0.94 | -2.92 | -0.02 | 0.01 | 0.20 | -0.10 | 0.02 |
| UnSkLab | 2.29 | -0.17 | -0.02 | 0.11 | -0.13 | -0.01 | 0.00 | 0.03 | 0.00 | 0.00 |
| SkLab | 2.16 | -0.24 | -0.02 | 0.10 | -0.05 | -0.01 | 0.00 | 0.03 | 0.00 | 0.00 |
| Capital | 2.11 | -0.23 | -0.02 | 0.09 | -0.03 | -0.01 | 0.00 | 0.02 | -0.01 | 0.00 |
| NatRes | -10.67 | 0.25 | 0.01 | -0.53 | 0.13 | 0.00 | 0.00 | -0.12 | 0.03 | 0.00 |

Land prices in XSC aggregation increase substantially

# … *because they own a relatively large share of land resources.*
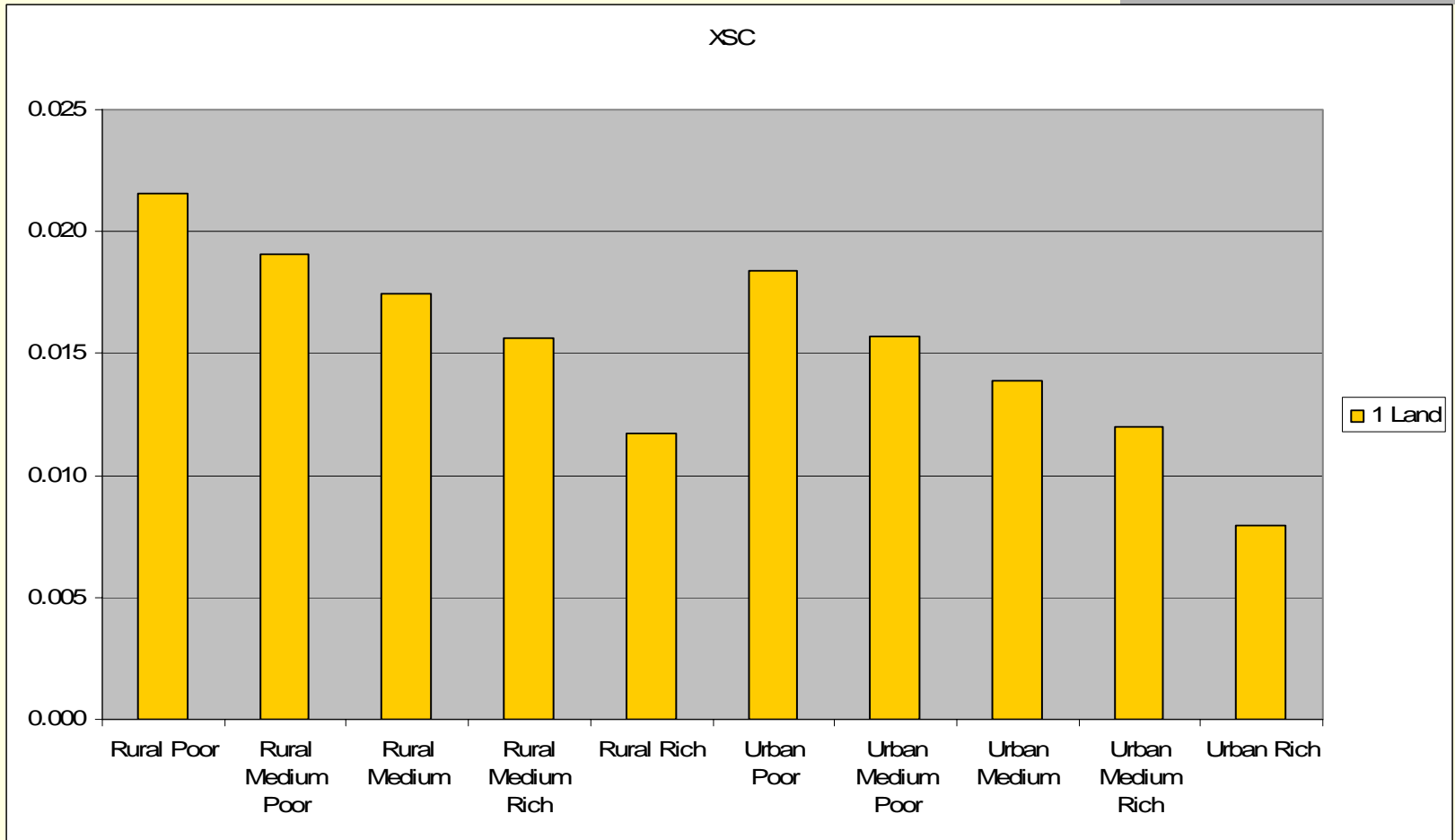
# Welfare effect at household level in African countries.

|  | XSC | Malawi | Tanzania | Zimbabwe | XSD | Madagascar | Uganda |
|---|---|---|---|---|---|---|---|
| Rural Poor | 2.54 | -0.03 | -0.03 | 0.07 | -0.18 | 0 | -0.01 |
| Rural Medium Poor | 4.36 | -0.05 | -0.04 | 0.12 | -0.33 | -0.01 | -0.01 |
| Rural Medium | 6.15 | -0.08 | -0.06 | 0.17 | -0.49 | -0.01 | -0.01 |
| Rural Medium Rich | 8.89 | -0.12 | -0.08 | 0.25 | -0.75 | -0.02 | -0.01 |
| Rural Rich | 19.44 | -0.35 | -0.16 | 0.57 | -1.84 | -0.03 | -0.02 |
| Urban Poor | 2.49 | -0.02 | -0.02 | 0.07 | -0.19 | 0 | 0 |
| Urban Medium Poor | 4.26 | -0.04 | -0.03 | 0.12 | -0.36 | 0 | 0 |
| Urban Medium | 6.09 | -0.06 | -0.04 | 0.18 | -0.54 | 0 | 0 |
| Urban Medium Rich | 8.84 | -0.09 | -0.06 | 0.26 | -0.83 | -0.01 | 0 |
| Urban Rich | 19.33 | -0.25 | -0.14 | 0.61 | -2.03 | -0.02 | -0.01 |

# Welfare effect at household level in African countries.
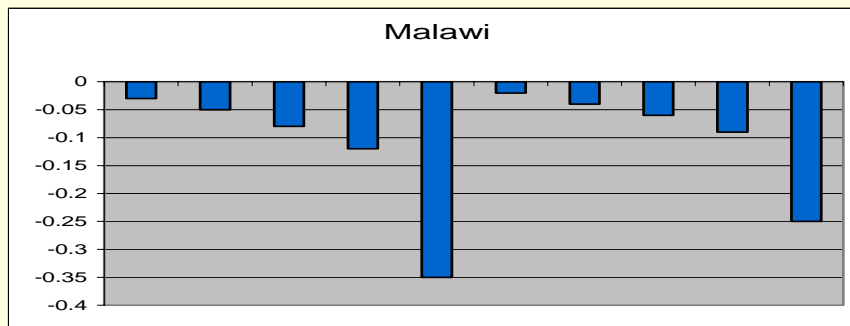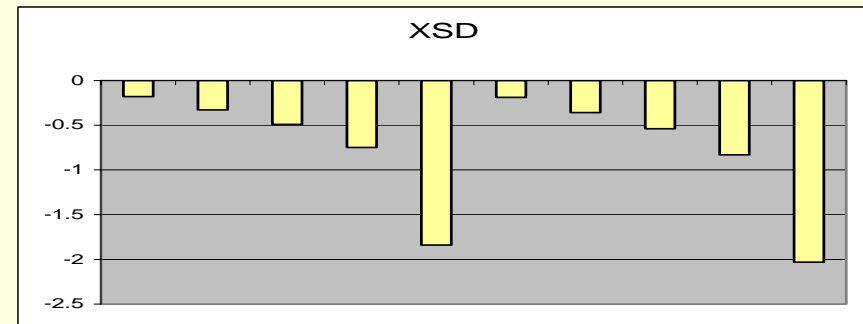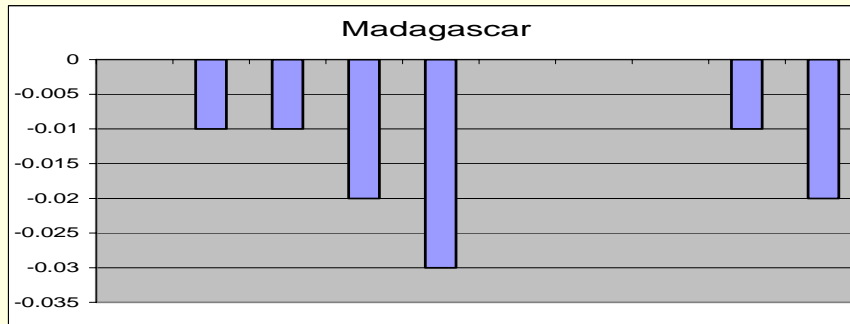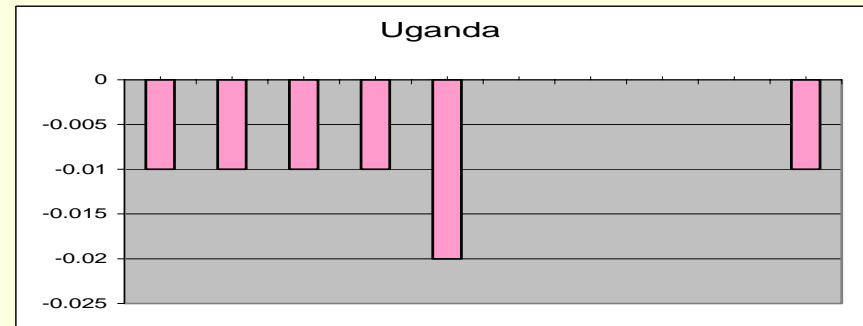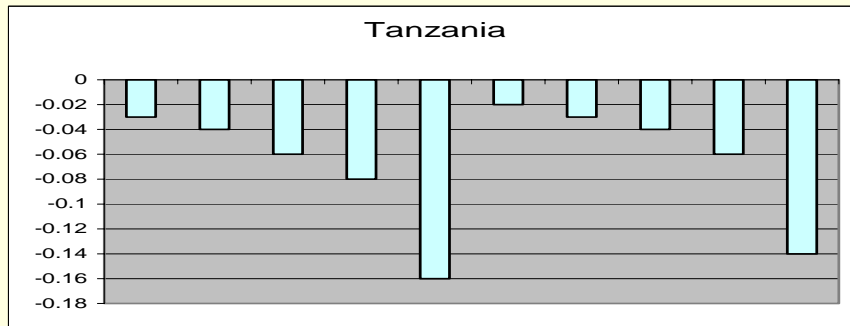
# Disaggregated Household Income

| | XSC | Malawi | Tanzania | Zimbabwe | XSD | Madagascar | Uganda |
|---|---|---|---|---|---|---|---|
| Rural Poor | 4.132 | -0.165 | -0.016 | 0.132 | -0.106 | -0.01 | -0.002 |
| Rural Medium Poor | 3.932 | -0.172 | -0.016 | 0.128 | -0.102 | -0.01 | -0.002 |
| Rural Medium | 3.805 | -0.175 | -0.016 | 0.126 | -0.099 | -0.01 | -0.002 |
| Rural Medium Rich | 3.665 | -0.179 | -0.017 | 0.124 | -0.096 | -0.009 | -0.002 |
| Rural Rich | 3.363 | -0.186 | -0.017 | 0.119 | -0.089 | -0.009 | -0.002 |
| Urban Poor | 3.877 | -0.178 | -0.016 | 0.127 | -0.101 | -0.01 | -0.002 |
| Urban Medium Poor | 3.67 | -0.183 | -0.016 | 0.124 | -0.096 | -0.009 | -0.002 |
| Urban Medium | 3.531 | -0.185 | -0.017 | 0.122 | -0.093 | -0.009 | -0.002 |
| Urban Medium Rich | 3.386 | -0.189 | -0.017 | 0.12 | -0.09 | -0.009 | -0.002 |
| Urban Rich | 3.068 | -0.196 | -0.017 | 0.115 | -0.083 | -0.009 | -0.002 |

Income gains in Lesotho, Namibia and Swaziland are reflected by an increase in consumer prices

# Consumer prices by Households

|  | XSC | Malawi | Tanzania | Zimbabwe | XSD | Madagascar | Uganda |
|---|---|---|---|---|---|---|---|
| Rural Poor | 2.18 | -0.11 | -0.01 | 0.10 | -0.08 | -0.01 | 0.00 |
| Rural Medium Poor | 1.97 | -0.11 | -0.01 | 0.10 | -0.07 | -0.01 | 0.00 |
| Rural Medium | 1.85 | -0.11 | -0.01 | 0.10 | -0.06 | -0.01 | 0.00 |
| Rural Medium Rich | 1.73 | -0.11 | -0.01 | 0.09 | -0.06 | -0.01 | 0.00 |
| Rural Rich | 1.53 | -0.11 | -0.01 | 0.09 | -0.05 | -0.01 | 0.00 |
| Urban Poor | 1.91 | -0.11 | -0.01 | 0.10 | -0.07 | -0.01 | 0.00 |
| Urban Medium Poor | 1.74 | -0.11 | -0.01 | 0.09 | -0.06 | -0.01 | 0.00 |
| Urban Medium | 1.63 | -0.11 | -0.01 | 0.09 | -0.05 | -0.01 | 0.00 |
| Urban Medium Rich | 1.54 | -0.11 | -0.01 | 0.09 | -0.05 | -0.01 | 0.00 |
| Urban Rich | 1.39 | -0.12 | -0.01 | 0.09 | -0.04 | -0.01 | 0.00 |

# *Private consumption Price in Poor Household in XSC aggregation.*
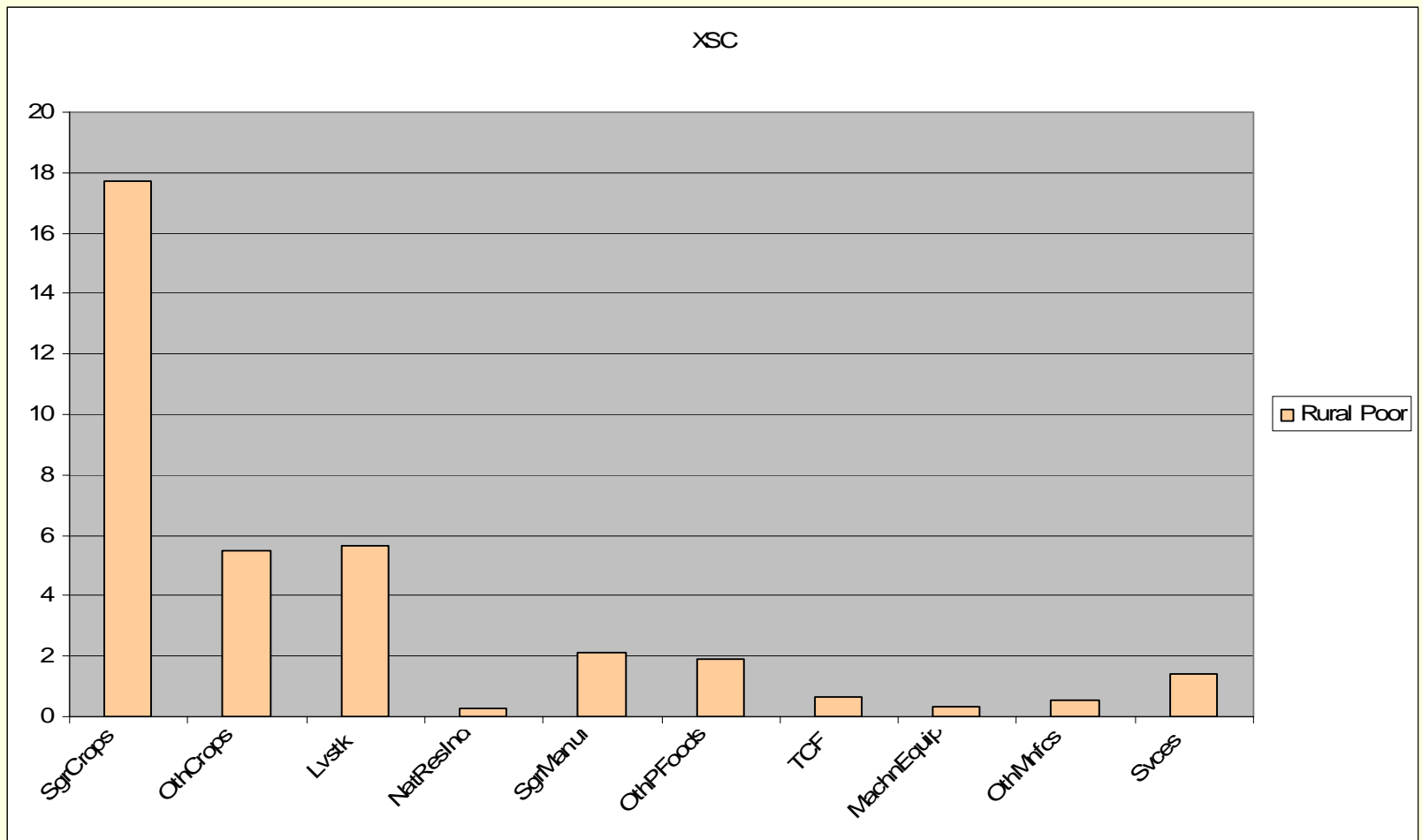
## *Preliminary Conclusions*

The households which gain from the EU sugar reform are those that derive a large share of their income from factors that benefit from the reform.

# ...*What is Next?*

- For raw cane sugar (a commodity which is not consumed by households in big quantities), the effects are from primary factor markets and factor ownership patterns. Thus priority is to make sure that those data and those model mechanisms are satisfactory.

- For studies of Doha effects on the poor (where all markets are affected), improving the demand system would be priority.

# THANK YOU!!