Distortions to Agricultural Incentives: A Global Perspective, 1955 to 2007

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What is this book about?

- The extent to which governments can’t resist distorting prices in agricultural markets
- How that intervention has evolved since 1950s
- Why it matters
- What alternative, more cost-effective measures are available to deal with food security, inequality and poverty
Haberler Report to GATT in 1958 warned of agric protection growth in high-income countries (HICs)
- reducing market access opportunities for agric-exporting developing countries (DCs)

Meanwhile, newly independent DCs saw agric export taxes and multiple exchange rates as major sources of govt revenue to support their import-substituting industrialization strategy
- further reducing incomes of the world’s poor (DC farmers)

When D. Gale Johnson published his 1973 book on *World Agriculture in Disarray*, he added that both sets of countries were *insulating* their domestic food markets
- exacerbating international food price volatility and slowing global recovery to shocks
The early evidence

- The **anti-agric** and **anti-trade** policy biases of DCs were quantified for 1960-84 by the Krueger/Schiff/Valdes study of 18 developing countries
  - but not included were the 3 biggest (China, India, Indonesia)
- The **agric protection growth** of HICs that Haberler feared was documented for WE and NE Asia for select years to early 1980s by Anderson, Hayami & others (1986)
- The assistance to farmers in HICs has been ably documented by OECD’s PSEs/CSEs since 1986, but there was no comparable set of numbers for DCs
The good news of the past 2 decades, after the Krueger/Schiff/Valdes study:

- Many developing countries have undertaken major economic reforms since the 1980s
  - phased out their agric export taxes, reduced manuf protection, and allowed markets to determine the value of their currency
- Some rich countries also have begun to reduce trade-distorting supports for their farmers
  - partly through policy re-instrumentation towards somewhat decoupled measures
- Even so, there were believed to be many distortionary policies still in place
- One purpose of present study was to document more fully the extent of DC reforms
Conclusion: much achieved, but much reform still needed

- Global modeling results suggest the reforms since the early 1980s have taken the world at least halfway towards free goods markets.
- Remaining distortionary agric policies are responsible for 70% of the global welfare cost of 2004 merchandise trade distortions even though agric is only 3% of global GDP.
- They are also responsible for much of the instability in int’l agric markets.
- They appear to be net contributors to poverty in developing countries.
What did this study involve?

- 90 consultants covered 75 countries (>90% of world agriculture, population and GDP)

- Measured Nominal Rate of Assistance (NRA) for key farm products, covering 70% of production value
  
  NRA = percentage by which domestic prices for farm products exceed those in international markets

- Also generated a Relative Rate of Assistance (RRA) to producers of agric relative to non-agric tradable goods
  
  Defined as $RRA = [(1+NRA_{agt}/100)(1+NRA_{nonagt}/100)] – 1$

### Project’s focus countries: number and shares (%) of the global economy

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of countries</th>
<th>Pop’n share</th>
<th>AgGDP share</th>
<th>GDP share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>21</td>
<td>10</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Asia</td>
<td>12</td>
<td>51</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Latin America</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>European TEs</td>
<td>14</td>
<td>7</td>
<td>67</td>
<td>4</td>
</tr>
<tr>
<td>High-income</td>
<td>20</td>
<td>14</td>
<td>33</td>
<td>76</td>
</tr>
<tr>
<td><strong>WORLD TOTAL</strong></td>
<td><strong>75</strong></td>
<td><strong>90%</strong></td>
<td><strong>91%</strong></td>
<td><strong>96%</strong></td>
</tr>
</tbody>
</table>
### Global coverage of NRA estimates for 30 major agricultural products

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Share (%) of global ag production</th>
<th>Share (%) of global ag exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains (10 products)</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td>Oilseeds (6 products)</td>
<td>78</td>
<td>85</td>
</tr>
<tr>
<td>Tropical crops (7)</td>
<td>74</td>
<td>71</td>
</tr>
<tr>
<td>Livestock products (7)</td>
<td>72</td>
<td>88</td>
</tr>
<tr>
<td><strong>SUM OF ABOVE (30)</strong></td>
<td><strong>77</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>
Two summary indicators

- **Inter-sectoral neutrality** in assistance is least harmful to welfare (=> \( RRA=0 \))

- **Intra-agric sectoral neutrality**, at least in terms of equality of NRAs between agric exportables and agric import-competing sub-sectors, is least harmful to gains from agric trade and to ‘thinning’ int’l markets for agric goods (which adds to their instability)

  Measured by a trade bias index (\( TBI \)), defined as

  \[
  TBI = \frac{1 + \text{NRAagx}/100}{1 + \text{NRAagm}/100} - 1
  \]
Evolution from negative to zero average relative rate of assistance (RRA) for all DCs
RRA rise is steepest for Asia among the DC regions.
World’s RRAs and TBIs: 1980-84 vs 2000-04

Anti-trade bias: in DCs, NRA ag export taxation disappearing, but NRA ag import-competing is $>0$ & growing.
Long-run trend in NRA ag import-competing goods is growing as fast in DCs as in HICs: a worry for WTO
How far have policy reforms reduced the disarray in world agricultural markets? PE

- New **partial equilibrium** measures, based on J. Anderson/P. Neary’s Trade Restrictiveness theory but modified to account for difference between ag NRAs and CTEs (both of which can be positive or negative), are estimated for each of our 75 countries:
  - a Welfare Reduction Index (WRI), and
  - a Trade Reduction Index (TRI)

- We also estimate global WRI and TRI for each of our commodities
Welfare reduction index: DCs, HICs and ETEs, 1960 to 2007 (percent)
Trade reduction index: DCs, ETEs and HICs, 1960 to 2007 (percent)
Global WRI & TRI (%), by product, 2000-04

- Rice
- Sugar
- Milk
- Beef
- Poultry
- Cotton
- Groundnut
- Sorghum
- Sesame
- Cocoa
- Barley
- Millet
- Sheepmeat
- Oat
- Tea
- Pignut
- Egg
- Rapeseed
- Soybean
- Maize
- Wheat
- Sunflower
- Coffee
- Palm oil
- Coconut
- Rubber
- Cassava
- Wool
How far have policy reforms reduced the disarray in world agricultural markets? GE

New **global, economy-wide CGE modeling** results on effects of distortions also suggest that, since the early 1980s, the world has gone **more than half way** towards fully liberalizing goods markets, in terms of welfare and trade effects of policies affecting goods markets.

But agric now account for 70% of the global welfare cost of goods-trade-distorting policies even though agric and food account for only 3% of global GDP and 6% of global trade.

Reflecting in part the wide dispersion in agric NRAs not only between countries but also across products.
Reform effects: retrospective since 1980-84, and prospectively as of 2004

<table>
<thead>
<tr>
<th></th>
<th>Reform from 1980-84 to 2004</th>
<th>Move to free trade as of 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global econ welfare, $b (%)</td>
<td>$233 (0.8%)</td>
<td>$168b (0.6%)</td>
</tr>
<tr>
<td>DCs’ econ welfare, $b (%)</td>
<td>$73b (1.0%)</td>
<td>$65b (0.9%)</td>
</tr>
<tr>
<td>DC share of global ag output</td>
<td>58% → 62%</td>
<td>62% → 65%</td>
</tr>
<tr>
<td>DC share of global ag exports</td>
<td>43% → 55%</td>
<td>55% → 64%</td>
</tr>
<tr>
<td>% rise in DC ag (nonag) sectoral value added</td>
<td>4.9%(0.4%)</td>
<td>5.6%(1.9%)</td>
</tr>
</tbody>
</table>
Insulation of food markets persists, so volatility of int’l food prices continues

- Fluctuations around trend NRAag from year to year remain common
- Consider the case of rice: insulating policies have ‘thinned’ its int’l market
  - <7% of global production is exported, versus 24% for wheat
  - So year-to-year coefficient of variation of int’l rice price is high: 0.63 compared with 0.44 for wheat
Rice NRA for South Asia is inversely correlated with int’l price
... and also for Southeast Asia
True for non-rice products too

Most farm product NRAs tend to be negatively correlated with movements in international product price

- On average, barely half of the change in an international price is transmitted to the domestic market within the first year, for the top dozen traded farm products

- This is becoming a bigger issue as climate change adds to volatility of crop seasons
Some research questions still to be addressed

1. Political economy question: Will trend RRAs for HICs and DCs converge above zero, rather than at zero (where intersectoral distortion is zero)?
Will DCs move, like HICs did, to positive RRAs as their incomes rise?
Korea and Taiwan followed Japan ...
... so will China and India too, to avoid social unrest from widening urban-rural income gap?
Will growth in emerging economies continue to push up int’l food prices?

- China’s impact so far has been much less on int’l prices for food than for minerals and energy
  - But partly because of rising RRA over the past 3 decades
- True also of India, where Green Revolution also contributed to food self sufficiency after the 1960s
- Now with China’s and India’s RAAs close to zero, future agric import growth could accelerate if, on the one hand, they chose to not raise their RRA any more
- On the other hand, what if China and India (and other DCs) choose to follow Korea and Taiwan with agric protection growth?
  - which their WTO commitments would allow for some time yet, especially if Doha does not dramatically reduce tariff binding overhangs
What are the implications for WTO negotiations?

- Need large cuts to bound tariffs and subsidies so as to **reduce binding overhang & thus prospect of:**
  - **agric protection growth** in DCs as their incomes rise, and
  - **NRA fluctuations around trend** via variable trade barriers (because lib’n would ‘thicken’ int’l food markets)

- Need to not only ban agric export subsidies but also **discipline agric export restrictions at WTO?**

- Proposed ‘Special Products’ and ‘Special Safeguard Mechanism’ would **add to** agric protection growth, to dispersion of NRAs, and to int’l food price volatility
What alternative policy initiatives would boost food security and reduce poverty?

- Instead of variable trade measures, encourage governments to pour more of their support into boosting agric R&D, rural health & education, and rural infrastructure, and improving agric factor and product markets.

- Payoff from ag R&D investments has risen with higher prices & spectre of climate change.
  - Hotter, drier, more volatile seasons adds to need for:
    - more-integrated global food markets so as to better share the burden of fluctuating weather, and
    - efficient water markets.
For all Agric Distortions Research Project working papers and global distortions database, see [www.worldbank.org/agdistortions](http://www.worldbank.org/agdistortions)

Two forthcoming books are:
