Distorted agricultural incentives and economic development: Asia’s experience

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Background


Disarray worsened for another dozen or so years, with agric protection growth in Europe, North America and Japan peaking in 1986 as a consequence of an agric export subsidy war.
Meanwhile, Korea and Taiwan transformed rapidly from taxing to protecting farmers, copying the trend in higher-income countries but in a far more compressed time frame.


This raised concerns that other newly industrializing countries would follow suit, thereby diminishing the prospects for poorer agrarian countries exporting their way out of poverty.
Questions

- To what extent have Asia’s developing economies moved from taxing to assisting agric. relative to other tradable sectors as they grow?
  - especially as a result of reforms since the early 1980s, particularly in China and India?
- What’s in prospect, given the evolving politics within the region?
- How does that prospect differ from what is needed if future policies are to be more efficient, more equitable, pro-poor, pro-growth, and pro-environment?
Some colleagues thought taxing farmers in poor countries made sense because “that’s where the money is.”

But why has agric been taxed proportionately more than other sectors?

Some thought the issue had gone away because of recent reforms.

Yet CGE global modelers find agric is where most of the potential gains from further goods trade policy reform are to be found, including in developing countries.
Menu for today

- **Appetizer:**
  - Brief history of agric and trade policies to the early 1980s, and past analyses of them

- **Main course (drawing on our research project):**
  - New estimates of distortion patterns over the past few decades (including for China and India)

- **Dessert:**
  - Prospects for less-distortionary policies instead of agric protection growth in the decades ahead
Appetizer

Brief history of agric and trade policies to the early 1980s, and past analyses
History, pre-World War II

- Trade policies have affected agricultural incentives for centuries. A few examples:
  - 1100-1660AD agric export taxes in Britain, but followed by its protective food import duties’ Acts, 1660-90
  - European foreign policy gyrations of 1300-1850, led to big swings in bilateral trade flows
    - including Britain’s wine import barriers in 18th and 19th century, in part to protect grain farmers and brewers but also to boost excise taxes and thereby military superiority over France (Nye)
  - Corn Laws repeal in 1846: a rare example of agric lib’n
  - Latter 19th century grain tariff policy responses in Europe to declining rail and ocean transport costs
  - Growth of agric protection in Europe from late 19th century …
  - … and in Japan from early 20th century
    - including imperial rice self-sufficiency policy (NRA>50% by 1930s)
Analyses and elements of explanation up to the mid-1980s

- Anderson and Hayami (1986) on rapid agric protection growth in NE Asia compared with that in Europe and US
- Krueger, Schiff and Valdes (1988, 1991) on anti-agric policies of 18 developing countries
- Tyers and Anderson (1986, 1992) on the econ effects of distortions to world food markets
  - Suggested the OECD countries’ agric policies depressed real international food prices in 1990 by 20%, but that developing countries’ food policies almost fully offset that (reducing the int’l price-depressing effect to just 1%)
  - Together the domestic-market-insulating nature of those anti-trade agric policies made international food prices >3 times more volatile than they otherwise would have been in early ‘80s
Nominal agric assistance, 1980-82
(from Tyers and Anderson 1986)
### Relative rate of agric assistance, %, 1960-84 (from Krueger/Schiff/Valdes 1988)

<table>
<thead>
<tr>
<th>Income group (lowest first):</th>
<th>Importables</th>
<th>Exportables</th>
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<tbody>
<tr>
<td>Group 1</td>
<td>-11</td>
<td>-49</td>
</tr>
<tr>
<td>Group II</td>
<td>-13</td>
<td>-40</td>
</tr>
<tr>
<td>Group III</td>
<td>-2</td>
<td>-14</td>
</tr>
<tr>
<td>Group IV</td>
<td>15</td>
<td>-1</td>
</tr>
<tr>
<td><strong>All DCs</strong></td>
<td><strong>-9</strong></td>
<td><strong>-35</strong></td>
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Main course

Estimating changes in distortion patterns over the past 50 years
Why a new World Bank research project?

Both the effective taxing of farm relative to non-farm output in many low-income countries, and govt. assistance to farmers in higher-income countries, allegedly have had large adverse economic effects. They are claimed to have:

- reduced economic growth,
- added to global inequality and poverty and, in particular,
- depressed farm incomes in developing countries

During the past two decades, these policies have been reformed, but to what extent?

- varies across countries depending on pressures from GATT/WTO, IFIs, donors, and unilaterally
Structure of the research project

Stage 1 (2006-07):
- Country case studies, to provide time series of the extent of distortions and an analytical narrative explaining the evolution of policies since mid-1950s
  - leading to 4 regional volumes (on Africa, Asia, Europe’s transition economies and Latin America) plus a global overview book (including the high-income countries)

Stage 2 (2007-08):
- More-intensive empirical analysis across countries and over time of causes, and of effects on net farm incomes, inequality and poverty, of chosen vs. alternative policies, retrospectively and prospectively
Why did we undertake this project now?

- Much has changed in the 20 years since the Anderson and Hayami (1986) and Krueger, Schiff and Valdes (1988) studies:
  - in policies of both DCs and HICs
  - in our capacity to analyze the effects of, and in the reasons behind, those interventions and their reform

- Client governments and hence operational parts of the World Bank want a more-detailed understanding in order to fine-tune views on optimal strategies for
  - unilateral policy reform by developing countries
  - preferential and multilateral reforms for sustainable development and poverty alleviation

- This year’s *World Development Report 2008* is focusing on agriculture (first time since 1982 and ‘86)
Why the issue is still important in Asia, despite its rapid non-ag growth

- 75% of South Asia’s and 93% of East Asia’s poor still live in rural areas and depend directly or indirectly on agric. for their livelihood (>560 million people in 2002 live on less than $1 a day)
- Govt policies, in the past at least, have depressed farm incomes in developing Asian countries
- But with more of the rural poor in Asia and elsewhere depending on cash crops or non-agric activities, would agric and trade policy reform raise or lower aggregate poverty and inequality today?
Why the Asia story is important for the global story to 2030+ ...
... with Asia’s per capita income rising rapidly towards HIC level

Source: World Bank simulations using the Linkage model.
Note: Ratio of PPP-adjusted per capita incomes relative to high-income average. PPP is fixed at base year (2001) level.
Some specific questions on the extent of distortions in Asia

- To what extent have policy reforms resulted in Asian (and other) developing countries:
  - reducing their anti-agricultural biases?
    - Are they ‘overshooting’ to become agricultural protectionists?
  - reducing their anti-trade bias?

- To what extent are changes in distortions to agric incentives due to agric versus non-agric policy reforms?
How do we define a distortion?

- Any trade tax, subsidy, quantitative restriction or multiple/overvalued exchange rate system
  - Assumes developing countries do not have sustainable monopoly power in int’l markets
- Any domestic producer or consumer price tax/subsidy/restraint on outputs, productive factors or intermediate inputs
  - except where it directly overcomes an externality, or is set optimally across all products or factors to raise government revenue (e.g. VAT)
We measure nominal (NRA) and relative (RRA) rates of assistance to producers

- NRA as revealed through domestic-to-border price comparisons for about 70% of farm products
  - appropriately adjusted for transport costs, processing and marketing margins, quality differences, etc.
- A ‘guesstimate’ for NRA for non-covered products, to get an average NRA for all agriculture, and for tradable parts of the sector (NRA_{ag}^t)
- NRA for non-agric tradables also is estimated
- Then the *relative rate of assistance* (RRA) is calculated to proxy the impact on the relative price of farm products:
  \[
  RRA = 100 \left[ \frac{(100+NRA_{ag}^t)/(100+NRA_{nonag}^t) - 1}{1} \right]
  \]
How do we define ‘anti-agricultural bias’?

- Simplest criterion: Is NRAag < 0?
- Better (relative price) criterion: Is RRA < 0?
  - That is, even if NRAag > 0, is NRAag<sup>t</sup> < NRA<sub>non-ag</sub><sup>t</sup>?
- Even better (general equilibrium) criterion: would agric output or value added rise if all national goods market distortions were removed?
  - Not just in absolute terms, but relative to non-ag goods?
- And what if the rest of world’s goods market distortions also were removed?
- Time series for the first two (NRA and RRA) have been generated (still subject to revision), and we’ll also use a global CGE model for addressing the latter questions as of 2004
NRAag, high-income and developing countries, 1955-2004 (weighted averages)
NRAag: anti-trade bias in developing country ag policies persists: less export taxation, but slightly more import protection since the 1970s
NRAag, dev. countries: reductions in anti-agric bias (weighted averages)
Dispersion in NRAs is still high

- Across countries and sub-regions
- And across commodities

- Which means resources in agric are far from efficiently allocated between or within countries
**NRAag, SOUTHEAST ASIA**

*Data not available for 1980-84*
NRA by product, Japan, Korea & Taiwan

* Data not available for 1980-84
NRA by product, SOUTH EAST ASIA

- Data not available for 1980-84

1980-84 2000-04

SUGAR
MAIZE
RICE
AVERAGE
POULTRY
BEEF
SOYBEANS
RUBBER
COCOA
COFFEE
PIGMEAT
COCONUT
CASSAVA
TEA

* Data not available for 1980-84
What about relative rates of assistance?

- Assistance to non-agric sectors can be as important as direct agric policies, in terms of encouraging/discouraging resource use in agric
Evolution from negative to positive average relative rate of assistance for DCs …
... especially in Asia. For example, reduction in China’s anti-agric bias.
... and in India: half due to cuts in non-ag protection, which is now very low.
Dessert

Prospects for more reform in the decades ahead
Will more DCs move to positive RRAs, like higher-income countries did, as their incomes rise?
Regression of RRA on real income per capita (YPC) and agric. comparative advantage (NAE), 2000-04

\[ RRA = -141.67^{** *} + 18.09^{** *} \ln(YPC) - 36.39^{** *} \text{NAE} - 5.08 \text{NAE}^2 \]

\[ R^2 = 0.49 \quad N = 65 \]
Strong tendency for DCs to move to positive RRAs as their incomes rise?

Developing (with Taiwan and Korea) $R^2 = 0.29$

HICs and ECA $R^2 = 0.00$

Total $R^2 = 0.11$
Korea and Taiwan followed Japan...
so will China and India too, to avoid social unrest from widening urban-rural income gap?
China’s RRA trend helps explain two apparent paradoxes

1. China has remained close to self-sufficient in farm products over the past three decades
   - ... yet was expected to experience declining self-sufficiency in food and fibre, given its relatively low endowment of agric land per capita and rapid industrialization

2. China’s commitments under WTO to cut agric tariffs was expected to reduce agric self-sufficiency and add to farm household poverty
   - That hasn’t happened either. Instead, self-sufficiency has hardly moved, and farm household incomes have been rising in all deciles and in all regions of that country
## China’s trade in 11 agric products (valued at undistorted border prices)

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<thead>
<tr>
<th></th>
<th>1980s</th>
<th>1990s</th>
<th>2000-05</th>
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<tbody>
<tr>
<td>% share of prod’n exported</td>
<td>1.3</td>
<td>1.7</td>
<td>2.1</td>
</tr>
<tr>
<td>% share of cons’m imported</td>
<td>2.2</td>
<td>1.5</td>
<td>3.3</td>
</tr>
<tr>
<td>% self-sufficiency</td>
<td>99</td>
<td>100</td>
<td>99</td>
</tr>
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</table>
### All agric and processed food: \((X-M)/(X+M)\)

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</thead>
<tbody>
<tr>
<td>China</td>
<td>0.09</td>
<td>0.07</td>
<td>0.19</td>
<td>0.01</td>
<td>-0.16</td>
</tr>
<tr>
<td>South Asia</td>
<td>0.08</td>
<td>0.03</td>
<td>0.10</td>
<td>0.01</td>
<td>-0.06</td>
</tr>
</tbody>
</table>
Are WTO bindings helping to prevent agric protection growth in developing countries?

- Most DCs have very high binding overhang in agric (gap between WTO-bound and applied tariff or domestic subsidy), following the Uruguay Round Agreement on Agriculture.
- China has little overhang on tariffs on average, but plenty where it matters, and also lots of overhang in binding of domestic farm subsidies.
Simple average ag. tariffs and weighted average rates of assistance to agric (%)

<table>
<thead>
<tr>
<th></th>
<th>Bound ag tariff, 2005</th>
<th>MFN applied ag tariff, 2005</th>
<th>NRA, agric importables, 2000-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>16</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>India</td>
<td>114</td>
<td>38</td>
<td>16</td>
</tr>
<tr>
<td>Pakistan</td>
<td>96</td>
<td>16</td>
<td>-2</td>
</tr>
</tbody>
</table>
Even China’s WTO commitments allow scope for agric protection growth

- Out-of-quota tariffs are high (currently prohibitive):
  - 65% for grains
  - 50% for sugar
  - 40% for cotton

- Allowed up to 8.5% product-specific domestic support, plus another 8.5% non-product-specific assistance (or more if ‘decoupled’ somewhat from production)
China’s appetite for minerals and energy raw materials is clear ...
… but is China pushing up international prices for food too?

China’s impact on int’l food prices has been much less than on minerals and energy, because of:

- low income elasticities of demand for food
- rising RRA (i.e. reduction in anti-ag policy bias) over the past 30 years, that has added to domestic agricultural production and productivity growth
- And now with RAA>0 (3% in 2005), China’s policy regime is slightly *depressing* int’l food prices (while raising domestic food prices)
  - and could do so more in future if ag protection keeps rising
What is the food price hike of 2007 going to do to Asian NRAag?

- The encouragement of biofuel demand in high-income countries, in the wake of petroleum price hike, is contributing to the food price spike.

- Fearing a consumer backlash, India and some other Asian governments are not transmitting the price hike domestically, i.e. reducing NRAag, denying farmers a chance to benefit from the high price.
Yet at the same time Asian DC govts. are insisting on ‘special product’ exceptions in Doha agric talks

- They just want policy space, or do they want to become more protectionist of their farmers in the longer term?
- Will it help or hurt the poor?
- Will it lead to OECD countries demanding more exceptions for ‘sensitive’ farm products?
  - If so, that could eliminate most of the potential gains from agric reform under Doha
Thanks!

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