



Asia's Role in Stabilizing Food and Agricultural Prices

Kym Anderson

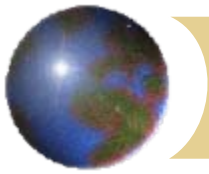
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Research project details are at www.worldbank.org/agdistortions

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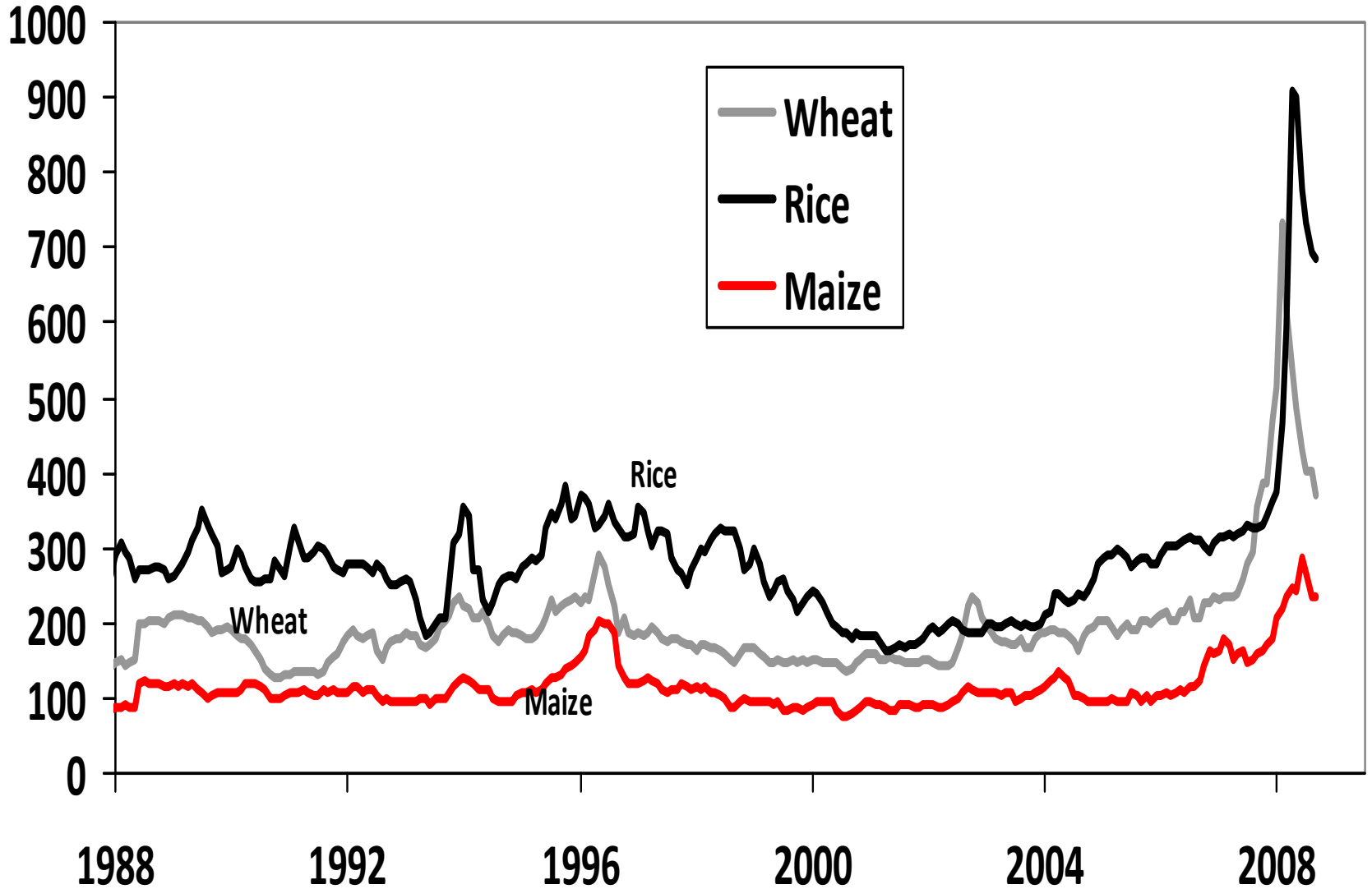


Motivation for topic

- Food prices spiked in 2nd quarter of 2008
 - International **rice** price nearly trebled between Feb and May (in nominal US\$)
 - Int'l **food** price index in 2nd quarter was 55% above that for 2007 (in nominal US\$)
- High food prices hurt non-farm households, especially poor ones; and low agric prices hurt farm households
 - Hence governments seek to stabilize domestic food prices
- However, domestic price stability – generated often by variable border taxes – imposes greater price variability on the rest of the world, as does any other anti-trade bias in policies that make global agric markets ‘thin’
 - Such beggar-thy-neighbor policies thus generate an international public ‘bad’



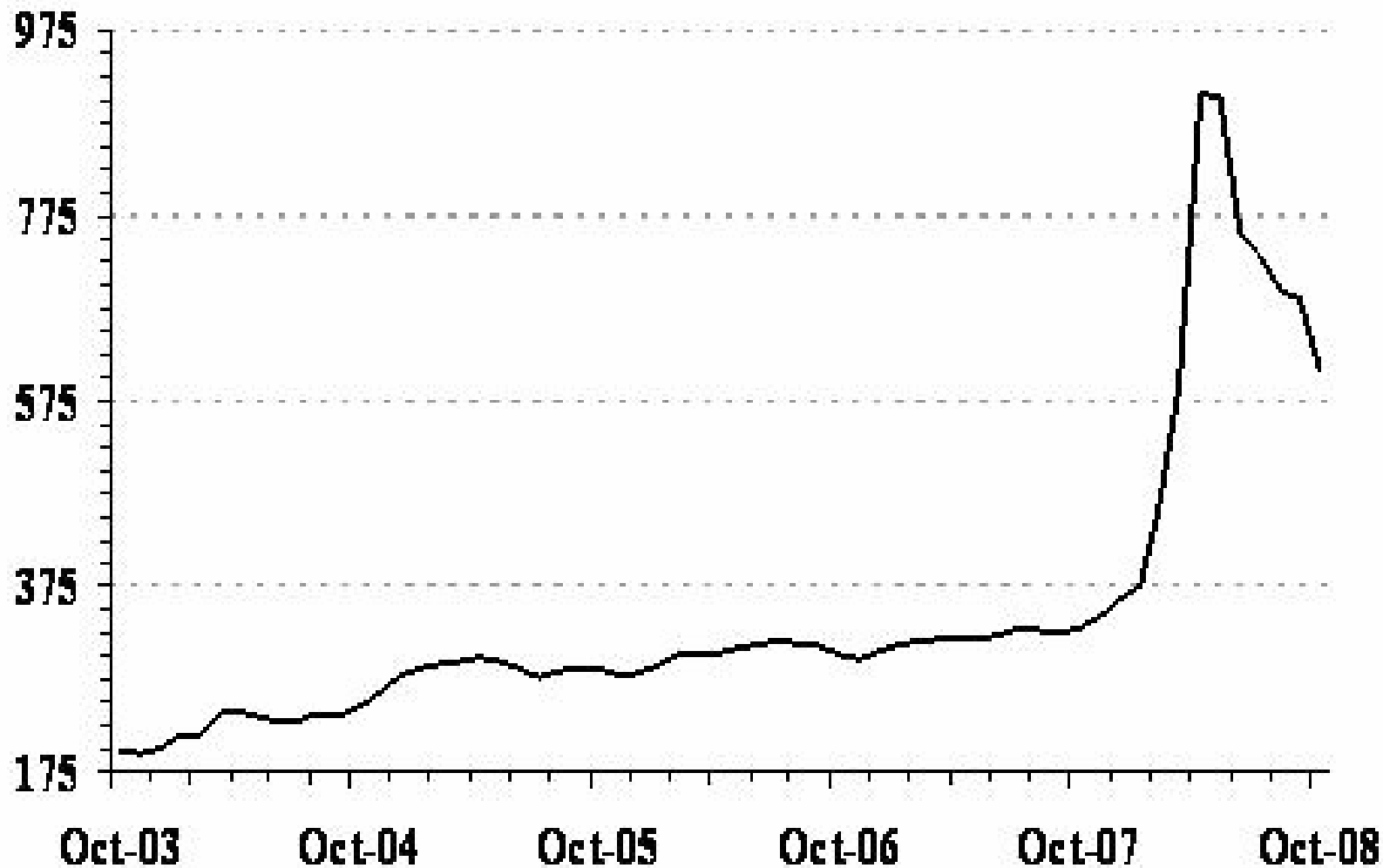
Nominal prices, 1988-mid 2008 (US\$/ton)





Rice price rose from \$375 to >\$900/ton

Rice, Thai 5% (\$/mt)

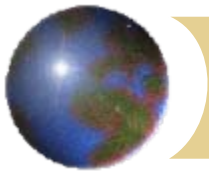




Palm oil price rose over 2 years but, like grain, has halved between June and October 2008

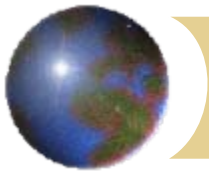
Palm Oil (\$/mt)





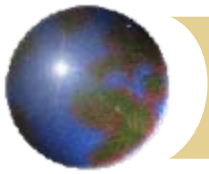
Motivation for topic (continued)

- Furthermore, agric prices in int'l markets may be far **more volatile in the future**, for at least 2 reasons: **biofuels**, and **climate change**
- At the recent high petroleum prices (>\$70/barrel), biofuels are profitable (a new, and huge, market)
 - and user prices of fossil fuels will become higher as and when taxes on greenhouse gases are stepped up
- Climate change is adding also to the demand for renewable energy support policies
 - and biofuel production subsidies, and mandates on their use, mean that biofuels are profitable at petroleum prices <\$70
- As well, climate change is adding volatility to weather patterns and hence to crop yields

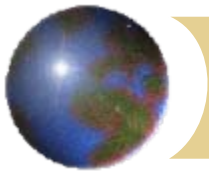


Outline of presentation

- How unusual is this spike in agricultural prices in international markets?
 - and how does it compare with other primary product prices?
- What contributions have government distortions to farmer incentives in Asia made to the problem?
 - Need to look at distortion trends, as well as fluctuations from year to year around trend
- What could Asia (and other regions) do to reduce agricultural price instability?
 - and simultaneously boost growth and alleviate poverty

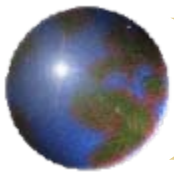


How unusual is this spike in agricultural relative to other primary product prices?



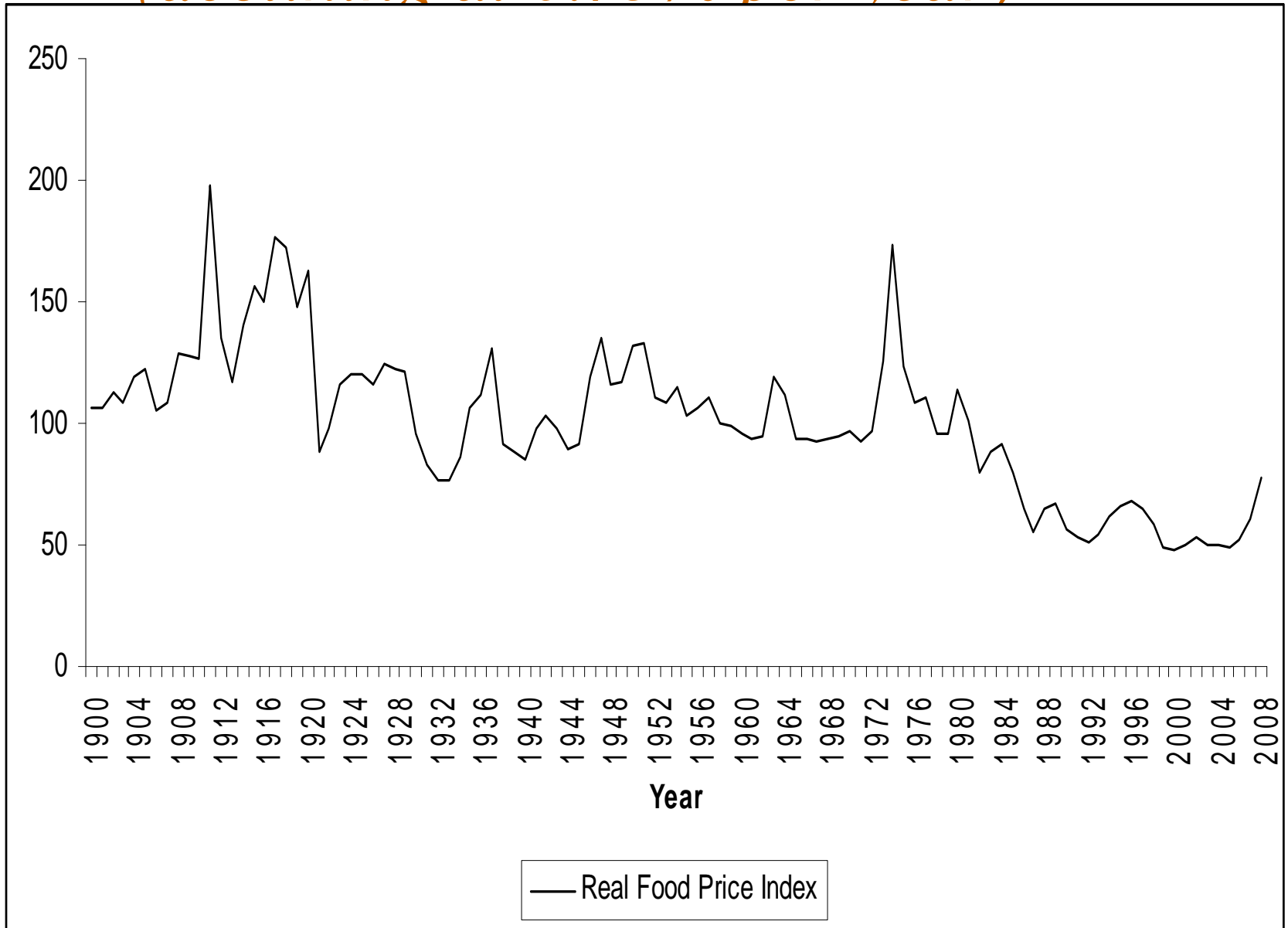
The very long view

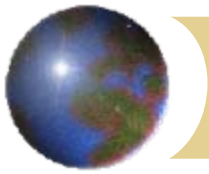
- Over the 20th century, the real price of food in int'l markets declined at 0.75% per year
 - using the World Bank's price of manuf. exports from 5 HICs to developing countries as the deflator
- More fluctuations in first half of century, faster decline in second half



Real food price index, 1900-2008

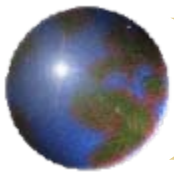
(declining at 0.75% per year)





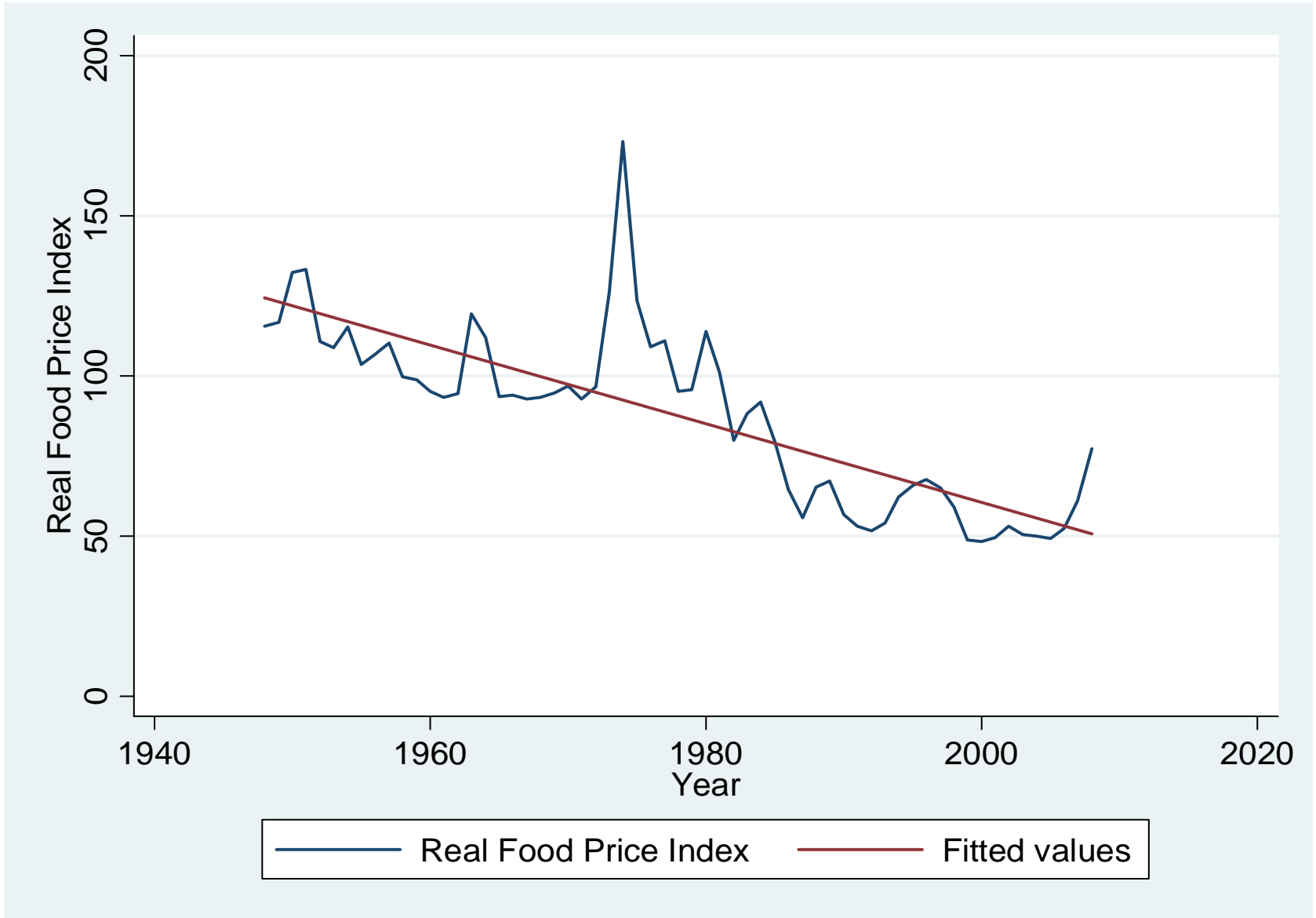
Price spikes post-World War II

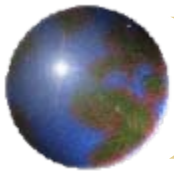
- Since 1948, the real int'l food price has declined at 1.5%
 - During which there have been six previous price spikes (average of 1 per decade)
 - but only one bigger than the 2008 spike
 - in 1973-74, when real food prices almost doubled and from a level twice that of 2008 (c.f. <one-third projected rise in 2008, given the downward plunge in 2nd half of 2008)



Real food price index, 1948-2008

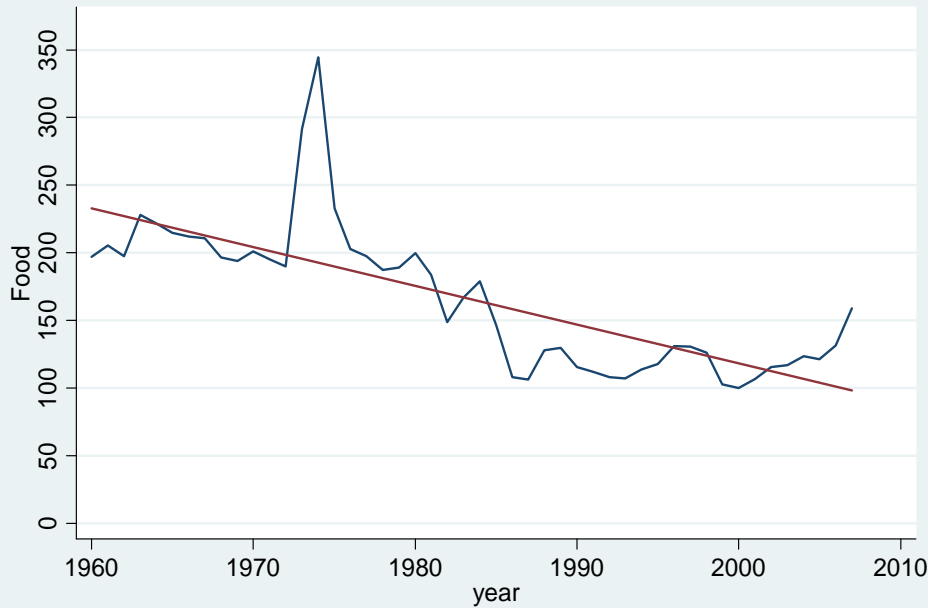
(declining at 1.5% per year)



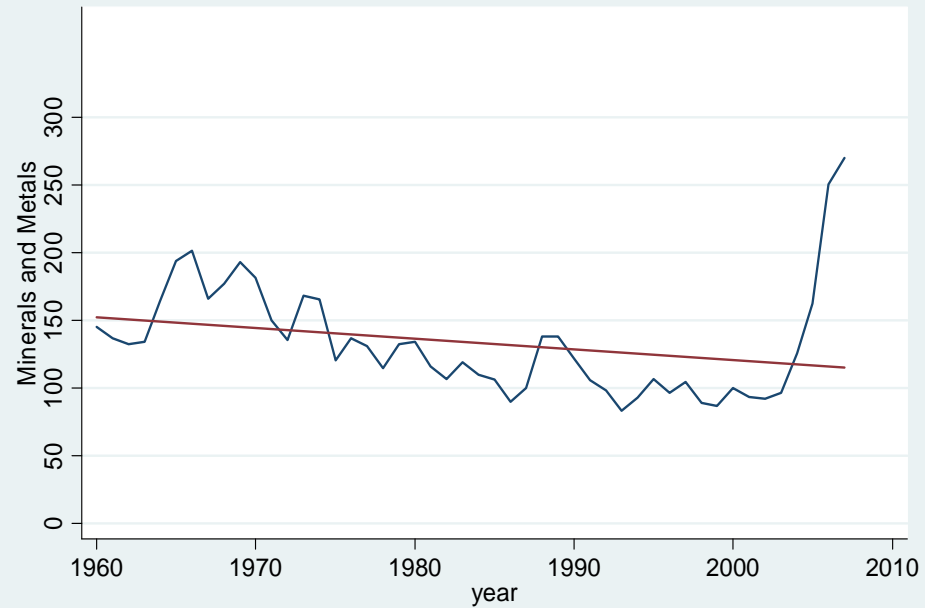


Until recently, real food prices behaved differently from real prices of other primary product

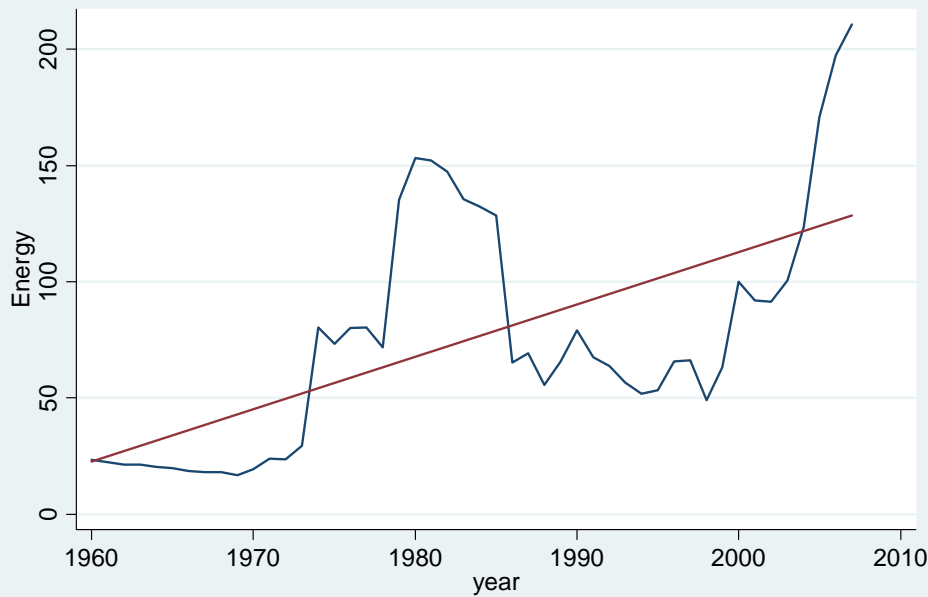
- Int'l food price decline contrasts with the steep rise in energy prices
- Its decline is steeper than for minerals or other primary products
 - demand more price inelastic; faster TFP growth
- Int'l prices also fluctuate more for food than for minerals or other primary products
 - see next slides for 1960-2007



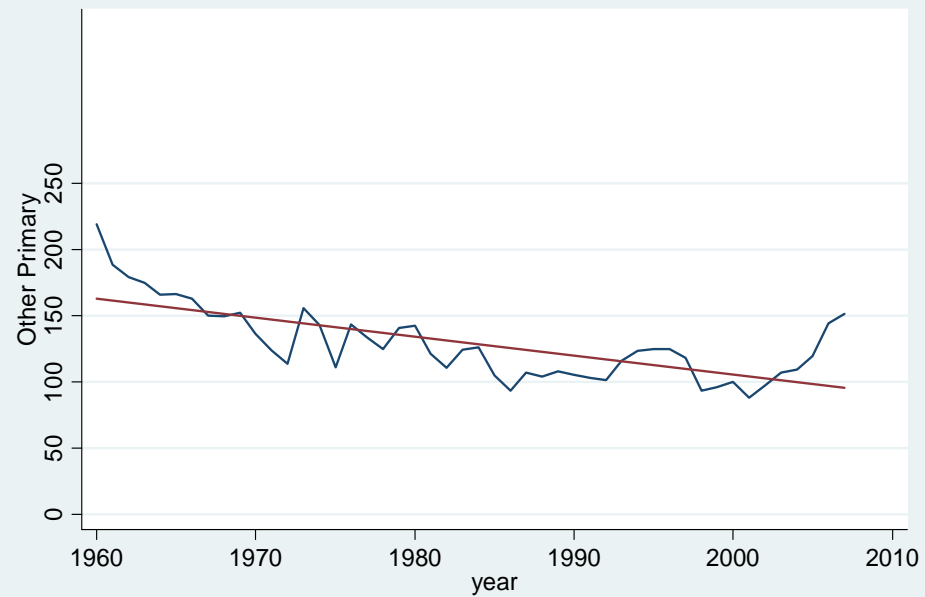
Food Fitted values



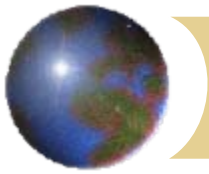
Minerals&metals Fitted values



Energy Fitted values



Other_Primary Fitted values



But at high-enough petroleum prices, food and fuel prices are now linked

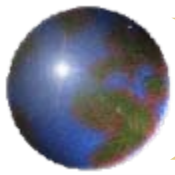
- Link has come with the advent of biofuels, which in turn have been highly stimulated by recent renewable energy subsidies and mandates
 - All grains (for ethanol) and oilseeds (for biodiesel) are affected, as land use moves towards eg corn in US and rapeseed in EU



Wheat price now tracks more closely the petroleum price

Wheat, US HRW (\$/mt)

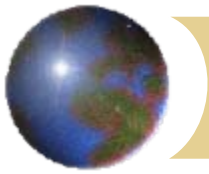




Petroleum price, past five years

Crude Oil, Average (\$/bbl)





Other causes of the latest food price spike

● Supply-side factors:

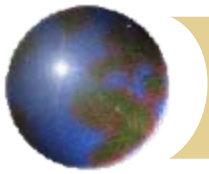
- Grain stock depletion during 2001-06 was followed by crop shortfalls in 2006-07
- Rising prices of petroleum and hence urea and diesel have raised farm costs and so dampened the supply response to rising agricultural prices



Fertilizer price, past 5 years

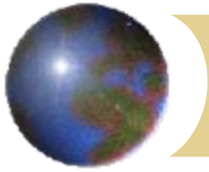
Urea (\$/mt)



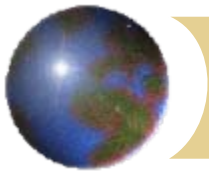


Causes of the latest price spike (cont.)

- Other demand-side factors:
 - Rapid **income growth** in Asia expanded demand for livestock products hence feedgrains and oilseeds
 - **Biofuel subsidies** and mandates (for energy security) added hugely to grain, oilseed & sugar demand
 - **Rice panic buying/hoarding** in 2nd quarter of 2008
- Weakening value of the US dollar against the Euro and other currencies added to nominal US\$ price rises

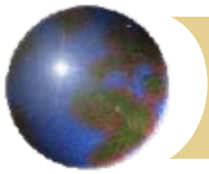


*Why have international
agric prices always been so variable?*



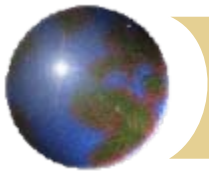
Weather variations are not the reason

- Not supply-induced by weather, but rather due to lack of integration across countries' agric markets:
 - Since 1974, real goods trade has grown at nearly twice the pace of real global GDP
 - For agric, however, the share of global production that is traded internationally has grown very little apart from intra-EU trade
 - Agriculture's 2004 share of global prod'n exported (excl. intra-EU) of 8% contrasts with 31% for other primary products and 25% for all other goods
- ⇒ 'thin' international market for price-inelastic food products
- ⇒ volatile int'l prices



Why are international markets for agric products so 'thin'?

- Partly because of insulating nature of variable taxes/restrictions on agric trade
- Also because of an anti-trade bias in the way governments seek to alter the trend level of domestic (relative to int'l) agric prices as their economy develops
 - See evidence shortly

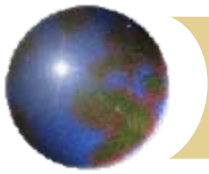


What contributions have government distortions to Asian farmer incentives made to the problem?



The World Bank's agricultural distortions research project

- Stage 1 undertaken by 90 consultants, covering 75 countries (>90% of world agriculture), of which 13 are Asian (95% of Asian agric)
- Results are in 4 regional books and a global overview book
 - Latin America and Eastern Europe/Central Asia both now published
 - Asia and Africa volumes due next February and March
 - Global book is with publisher, due for release mid-2009
- Working paper versions of all country case studies, and e-books, freely available at **www.worldbank.org/agdistortions**
- Global database and national spreadsheets also available at that site
- Starts by measuring Nominal Rate of Assistance for farmers (NRA)
 - the percentage by which domestic prices for farm products exceed those in international markets
- Also generates a Relative Rate of Assistance (RRA)
 - to producers of agric relative to non-agric tradable goods
 - Defined as $RRA = (1 + NRA_{ag}^t/100)(1 + NRA_{nonag}^t/100) - 1$

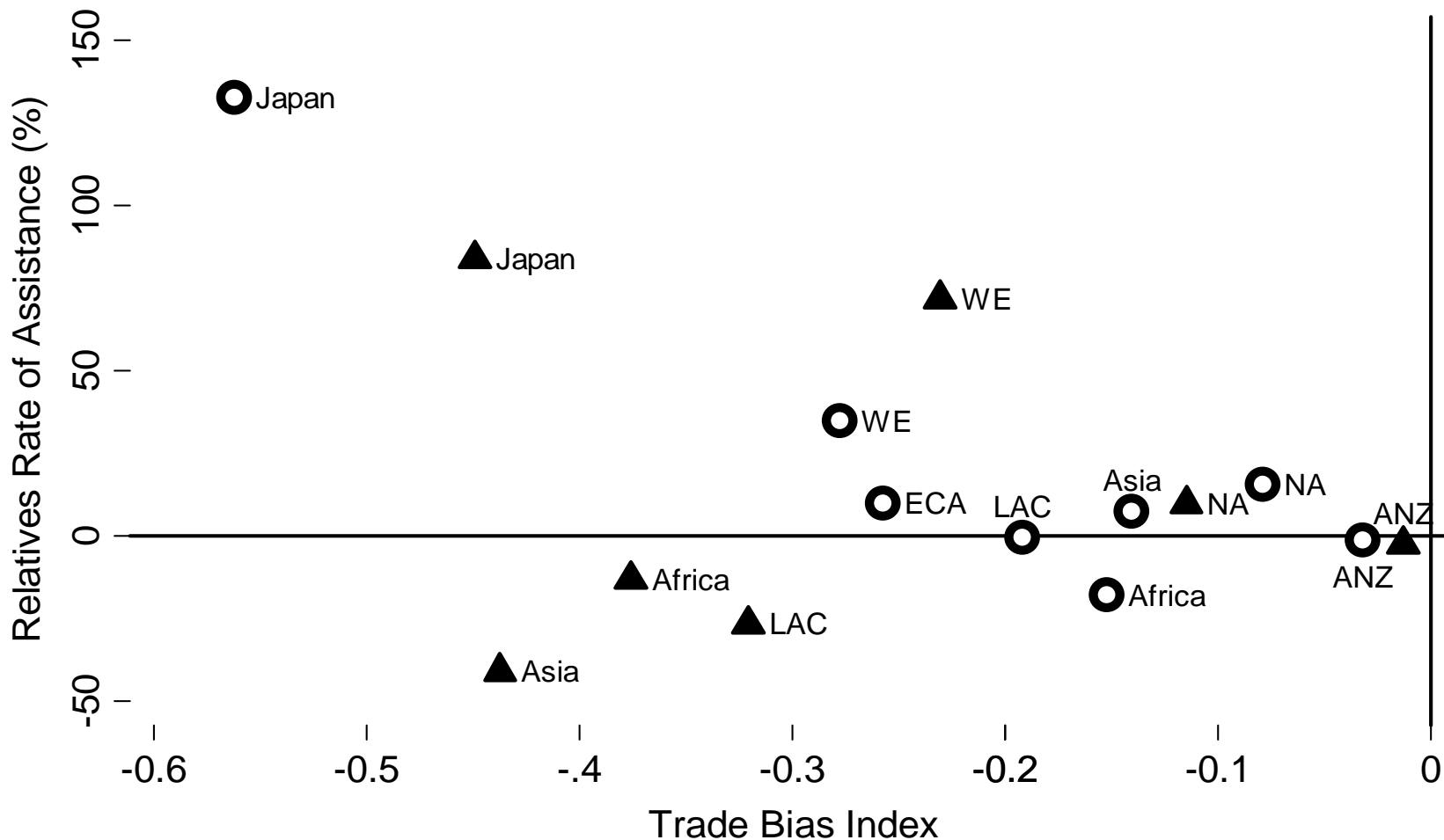


Indicators of relevance to Asia's contributions to global economic development and stability

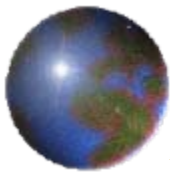
- Inter-sectoral neutrality in assistance is least harmful to welfare ($= > RRA=0$)
- Equality of NRAs between ag exportables and ag import-competing sub-sectors (that is, no trade bias) is least harmful to trade
 - and hence to 'thinning' int'l markets for ag goods, which adds to their instability
 - Measured by a trade bias index, defined as
$$TBI = (1 + NRA_{agx}/100) / (1 + NRA_{agm}/100) - 1$$



World's RRAs and TBIs: 1980-84 vs 2000-04

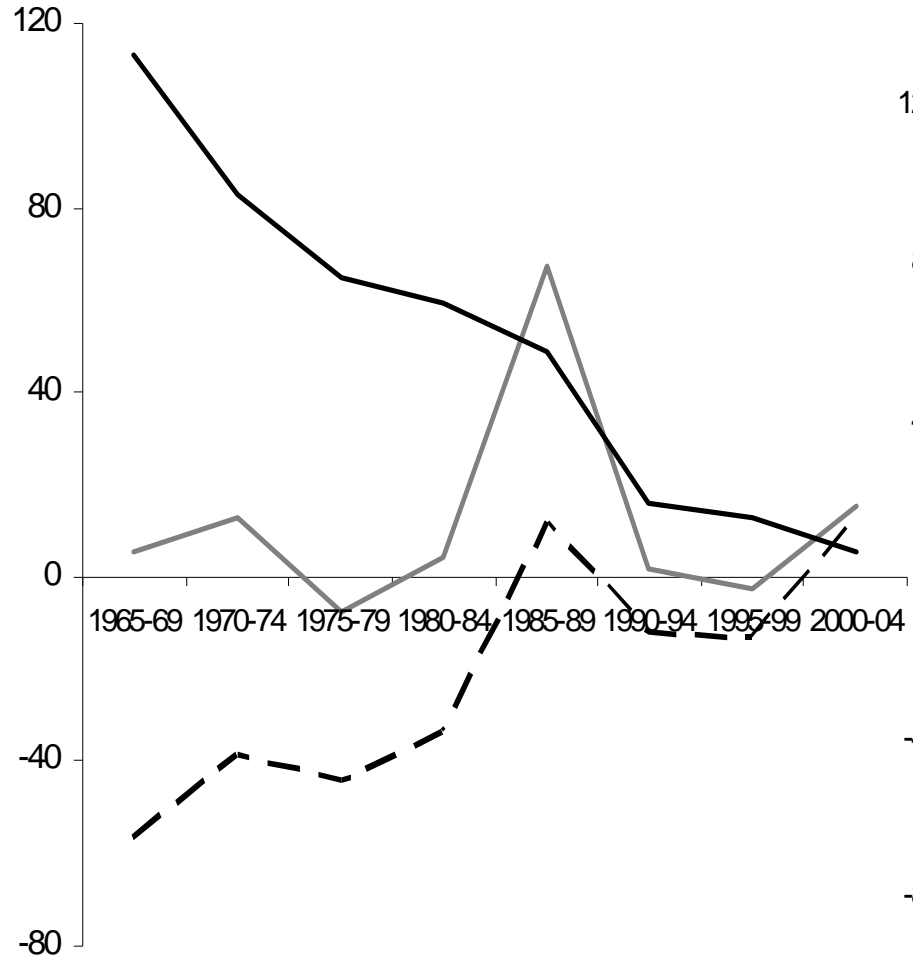


Triangle: 1980-84, Circle: 2000-04

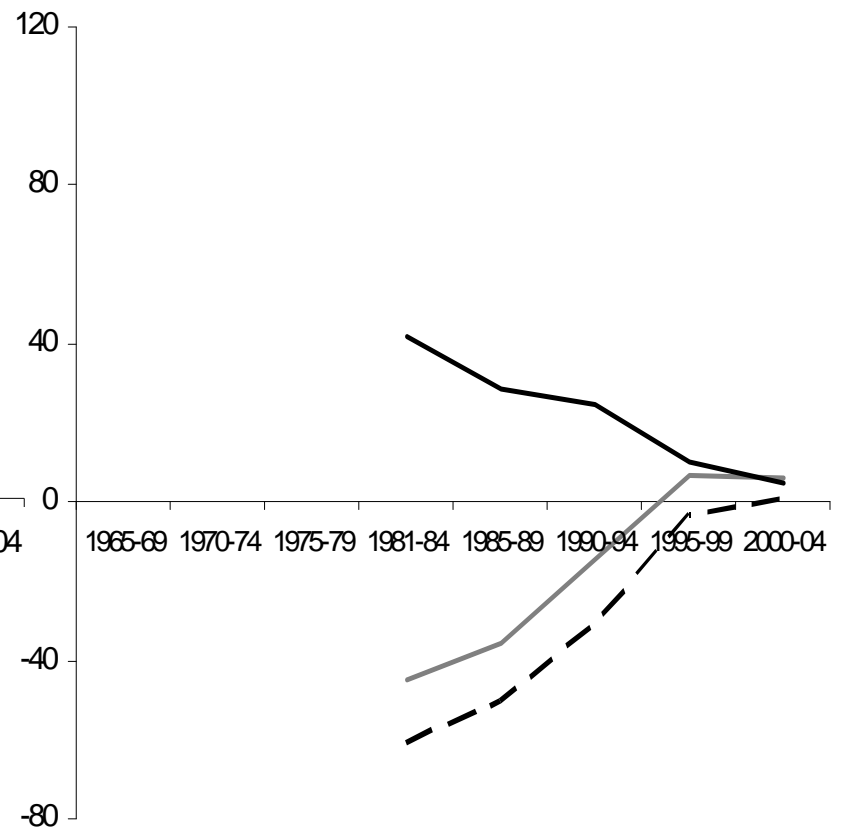


RRA reform greatest in China & India

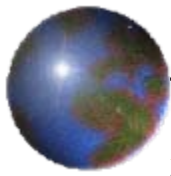
INDIA



CHINA



— NRA Agriculture — NRA Non-agriculture - - - RRA



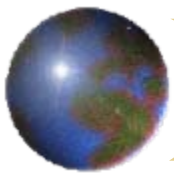
How far have policy reforms reduced the disarray in world agricultural markets?

- New global, economy-wide modeling results on *effects* of distortions suggest that, since the early 1980s, the world has gone more than **half way** towards fully liberalizing goods markets, in terms of welfare effects of policies affecting goods markets
- But agric now account for 60% 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
- Freeing up agric trade not only would boost welfare but also would ‘thicken’ int’l agric markets
 - It would raise share of global prod’n traded from 8% to 13%

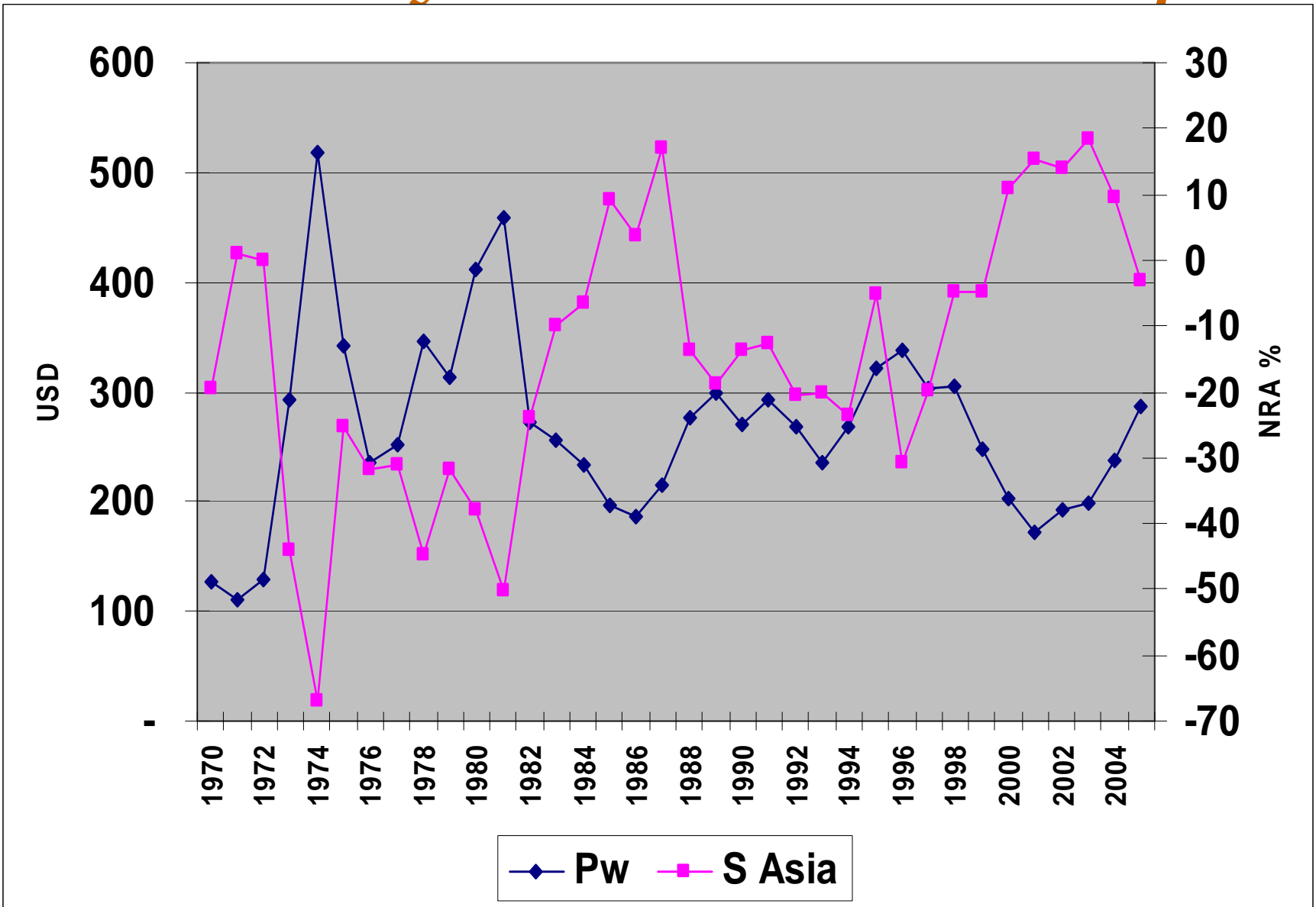


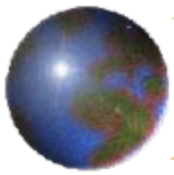
Insulating of domestic food markets persists, so volatility of int'l food prices continues

- **Fluctuations around trend NRAag** from year to year remain common, esp. for staples such as rice
- This beggar-thy-neighbour reluctance to import instability from int'l food market imposes an international public 'bad' on the rest of the world
- Consider the case of rice, 80% of which is produced and consumed in Asia
 - Insulating policies have 'thinned' its int'l market (<7% of global production is exported, versus 24% for wheat), so coefficient of variation of int'l price is high (0.63, compared with 0.44 for wheat)

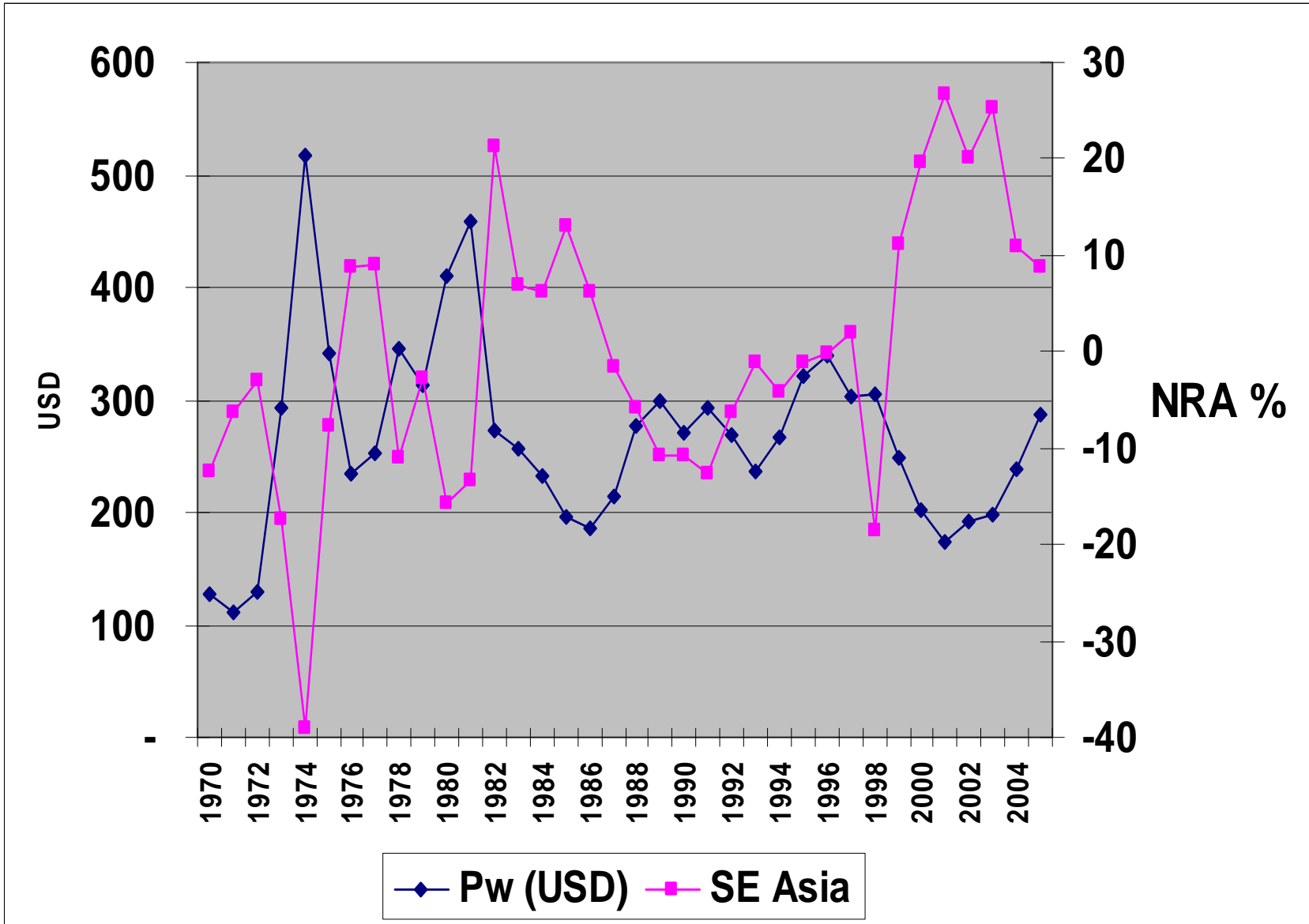


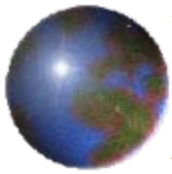
Rice NRA for South Asia is inversely correlated with int'l price



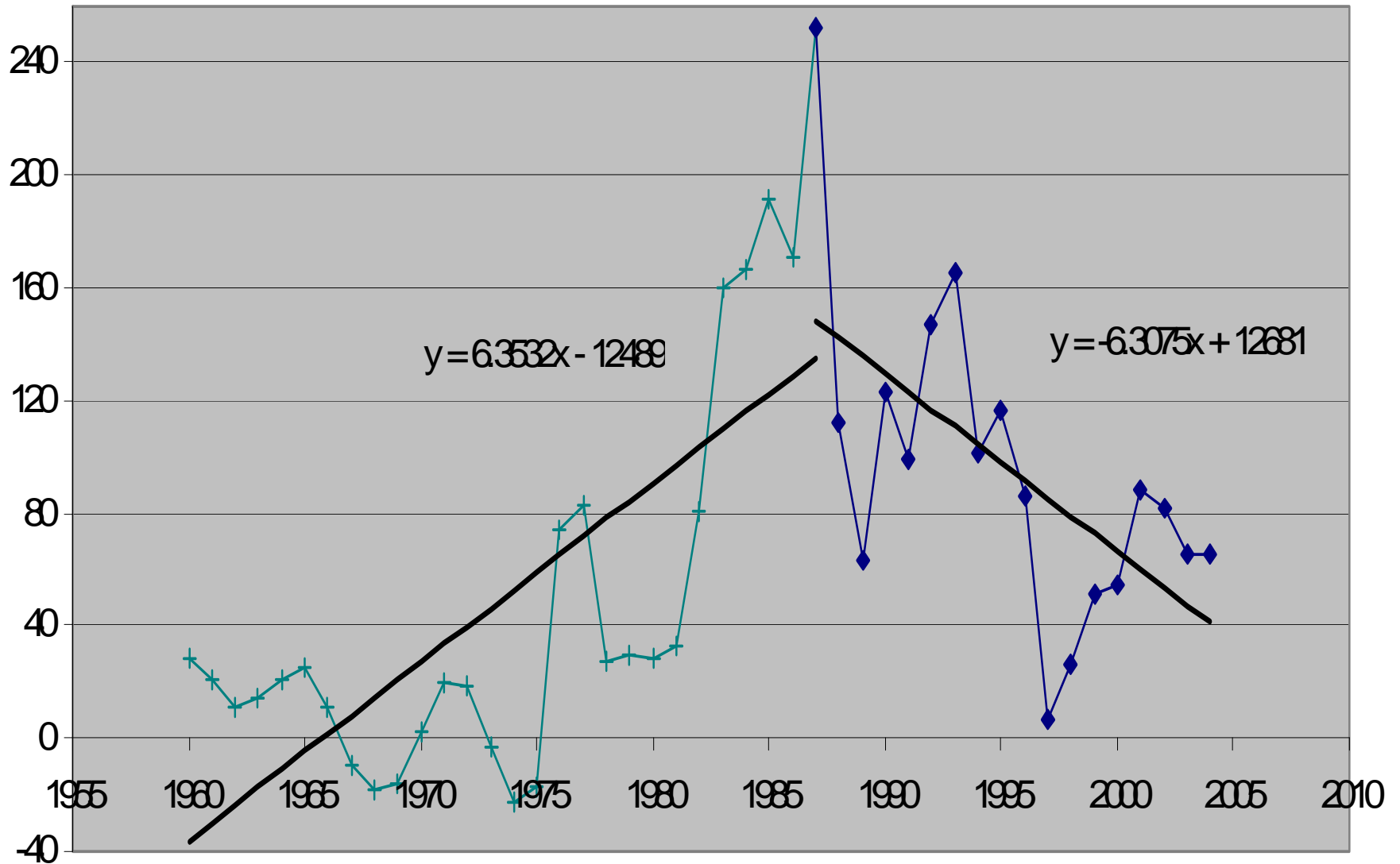


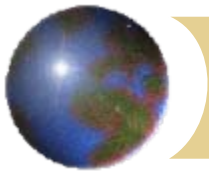
... and also for Southeast Asia



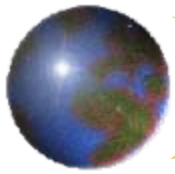


NRA for rice, Malaysia, 1955 to 2005

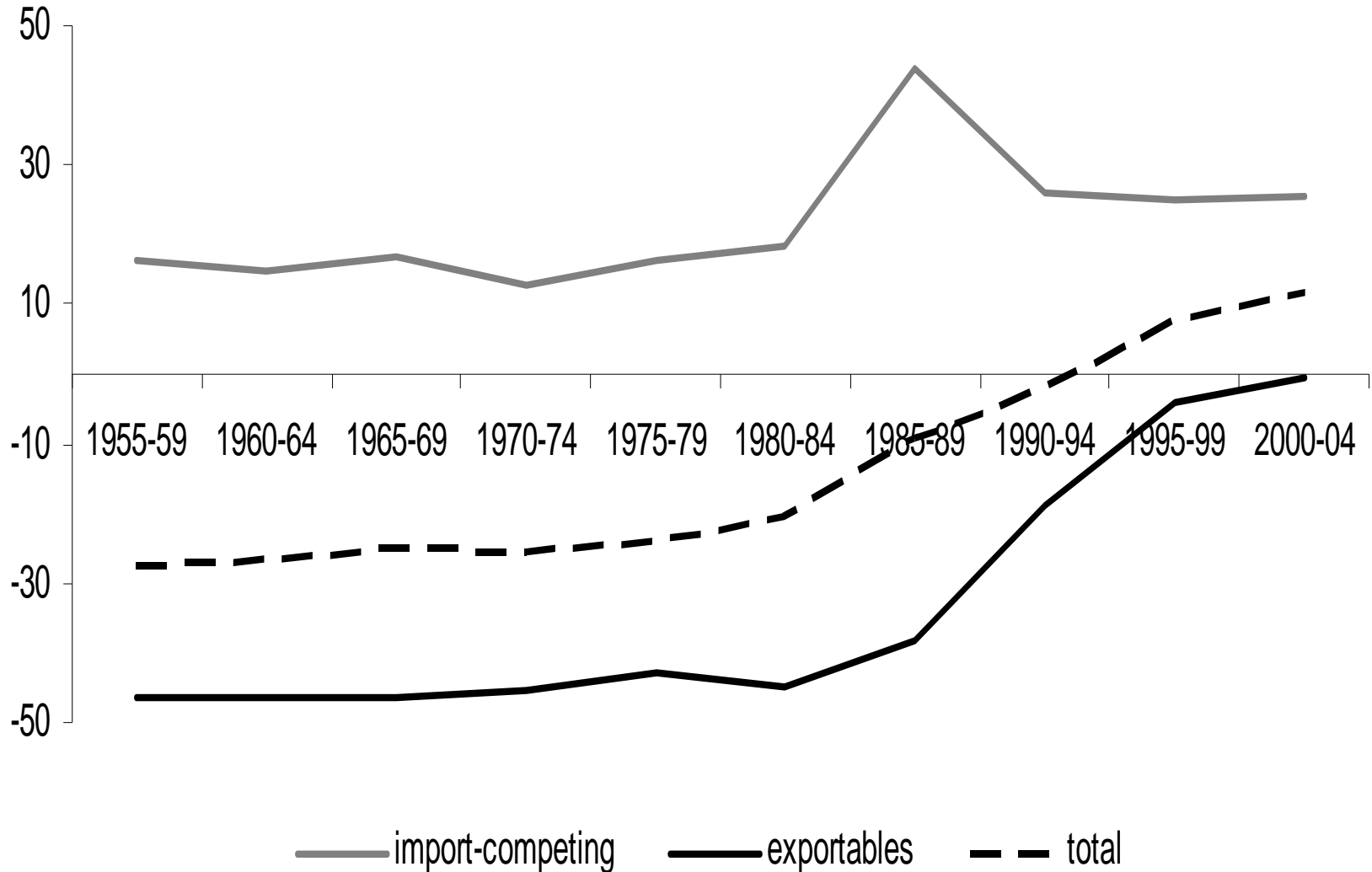




What could Asian (and other) governments do to reduce agricultural price instability?

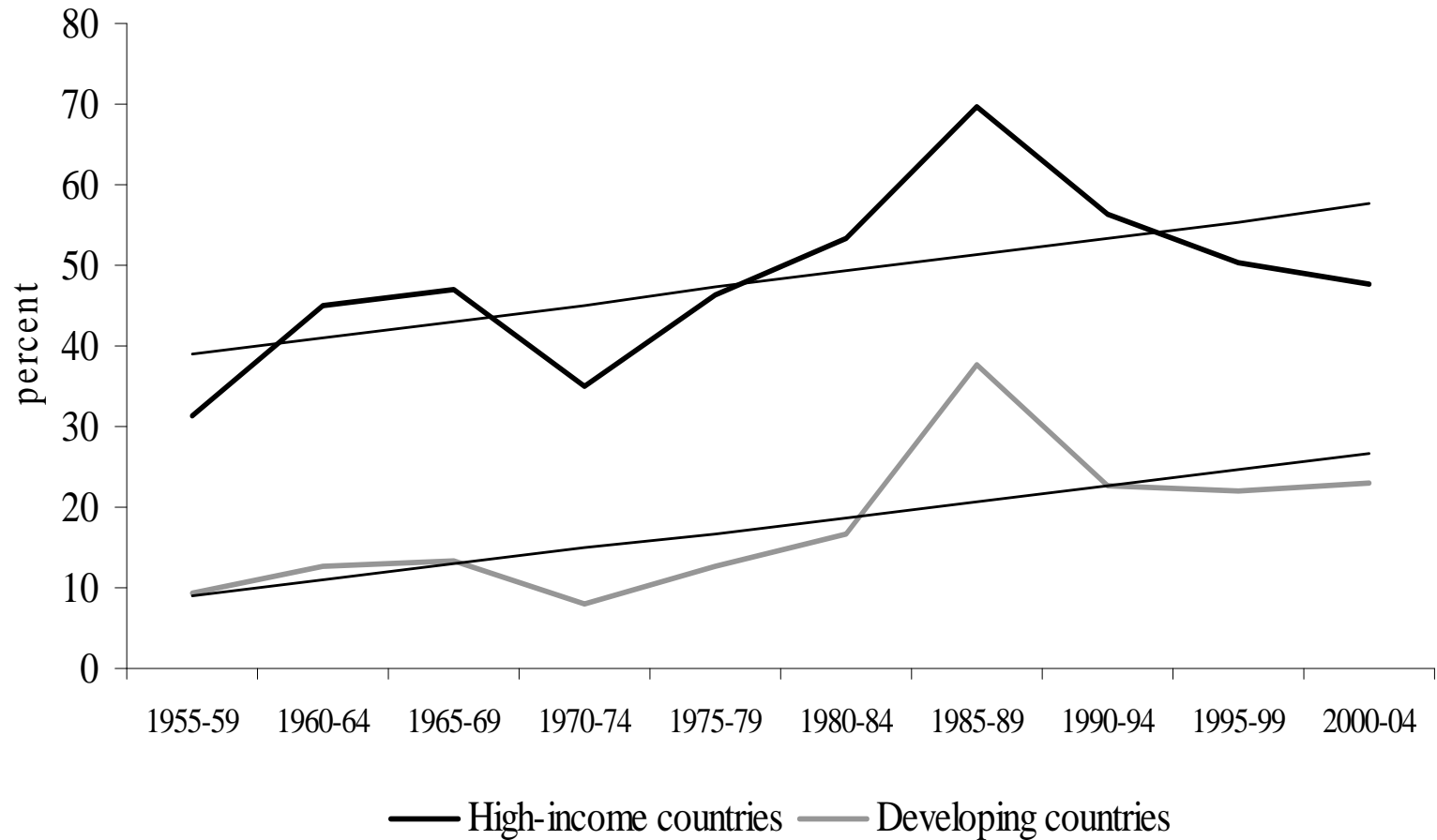


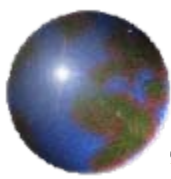
*In developing countries (DCs), NRA ag
export taxation disappearing, **but** NRA ag
import-competing is >0 & growing*



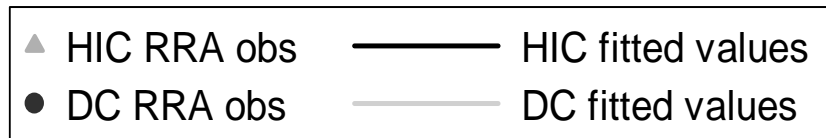
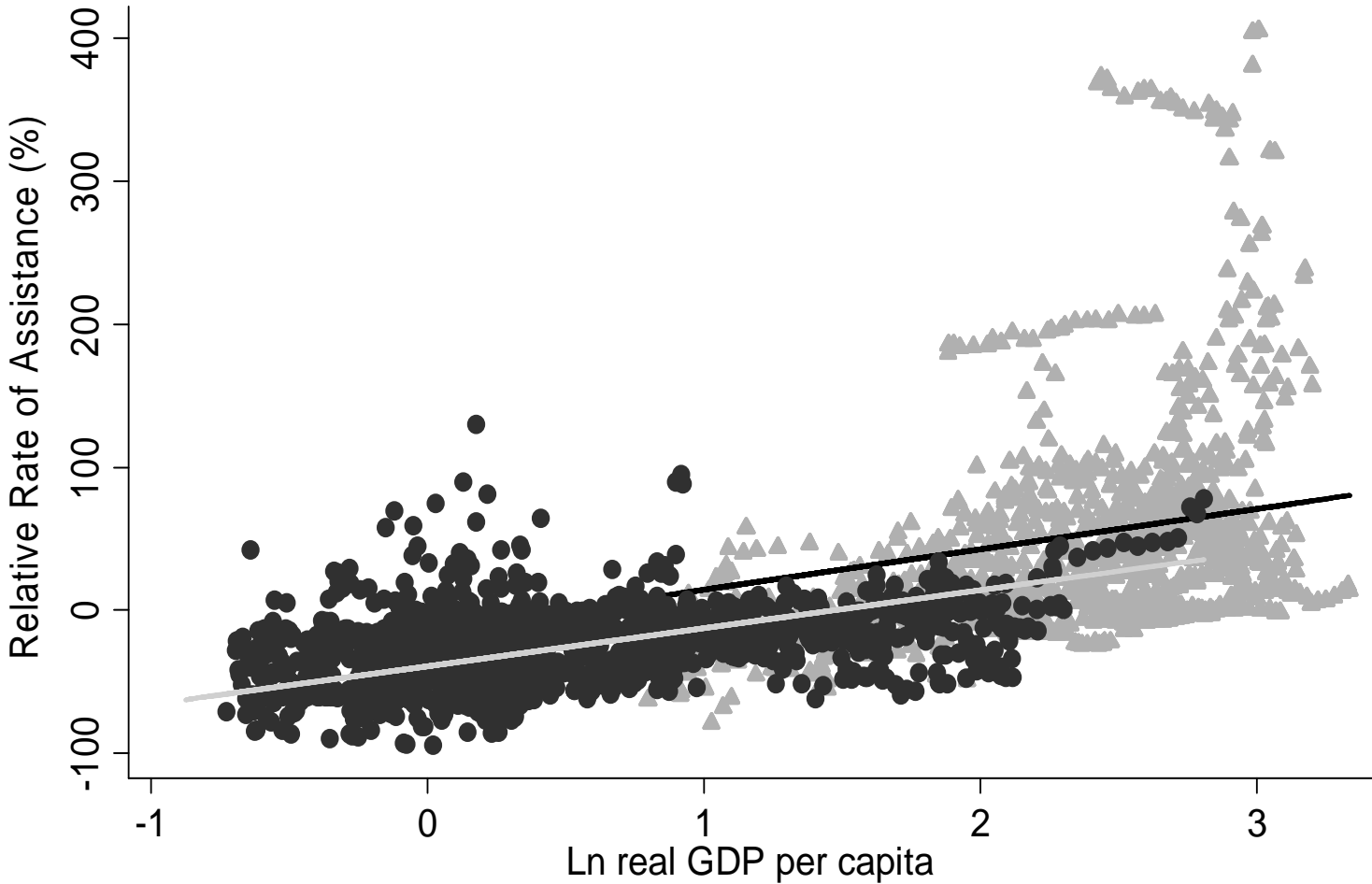


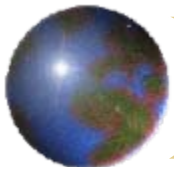
Long-run trend in NRA ag import-competing goods is growing as fast in DCs as in high-income countries



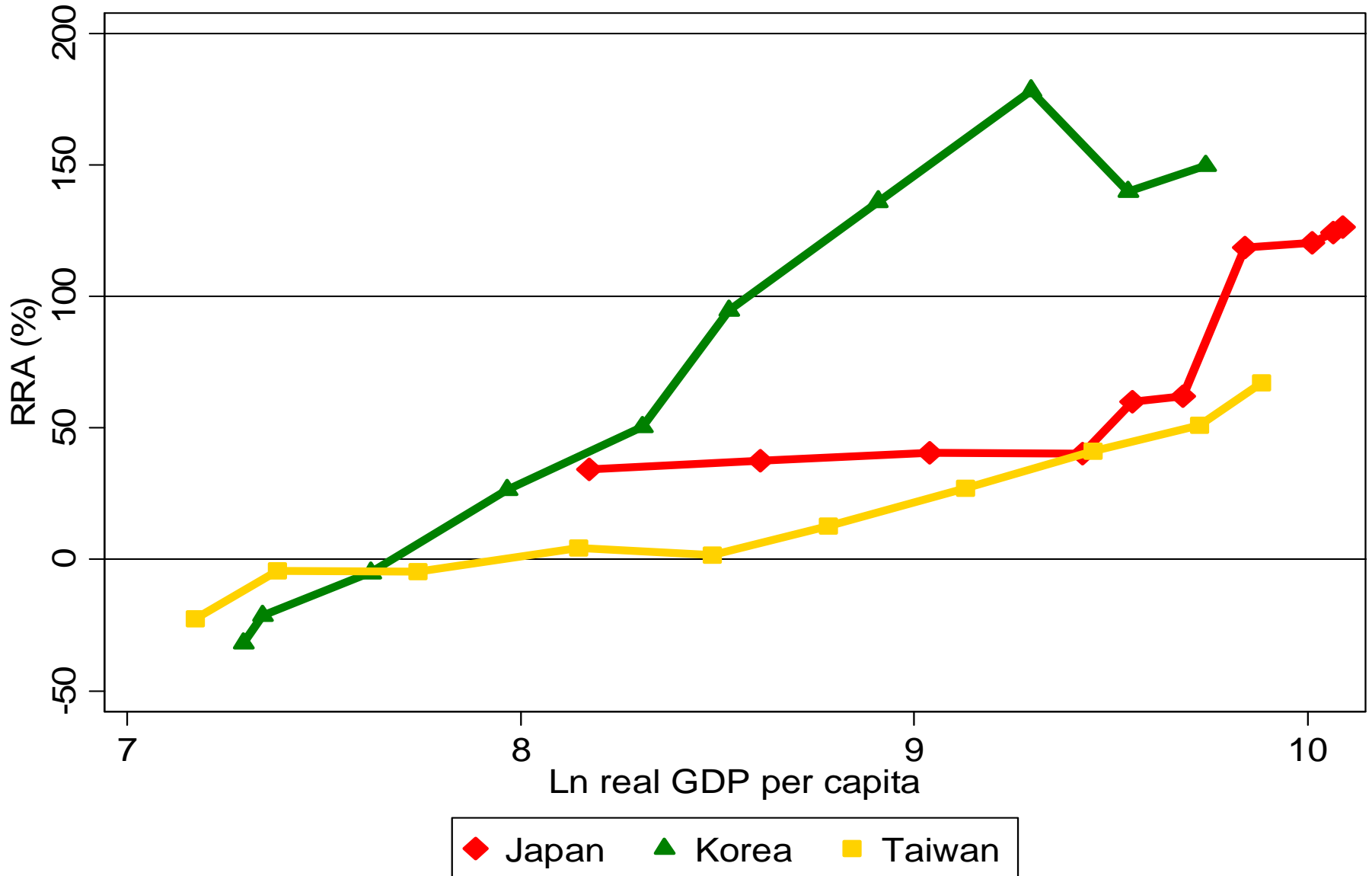


Similar tendency for DCs to move, like HICs did, to positive RRAs as their incomes rise?



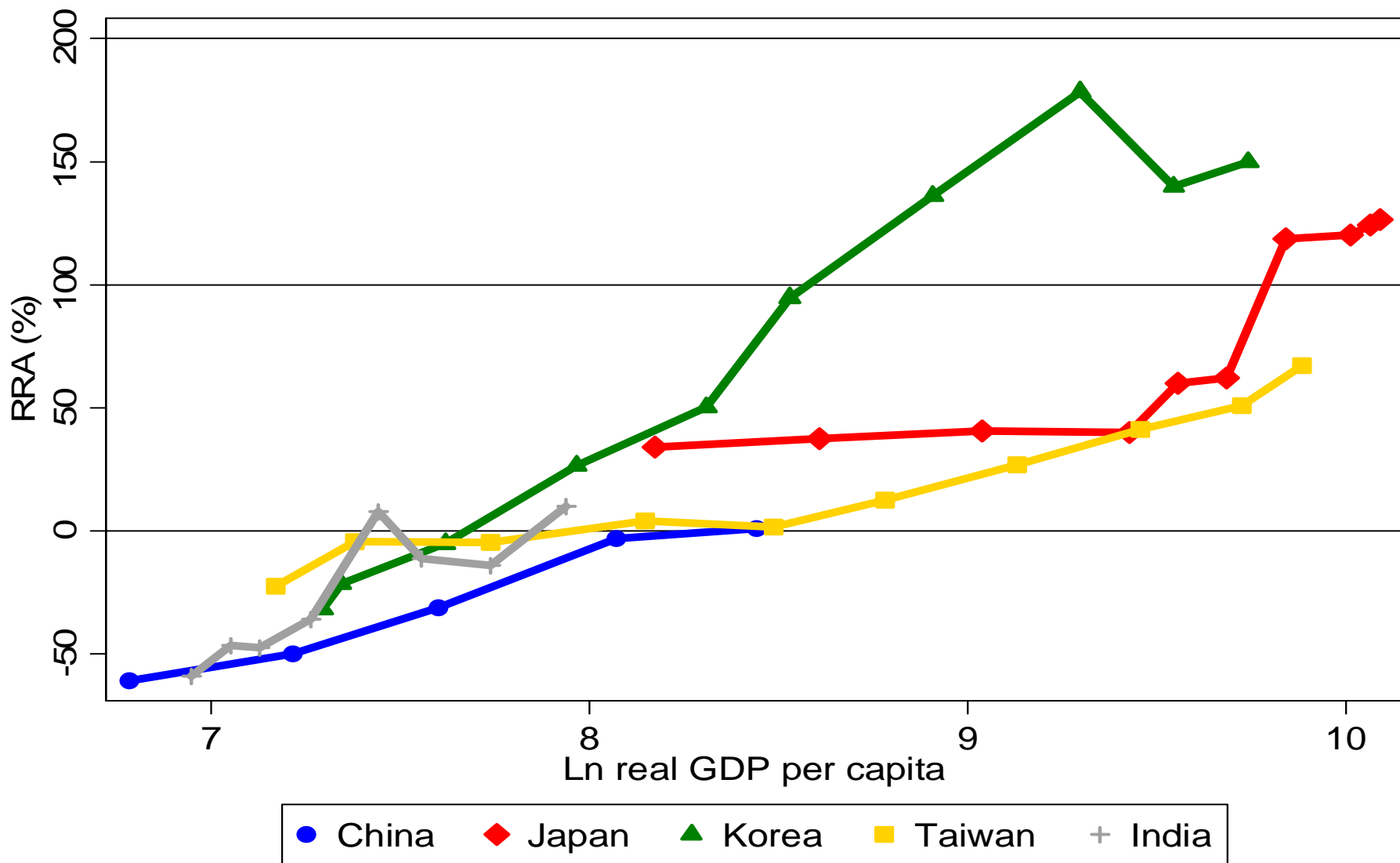


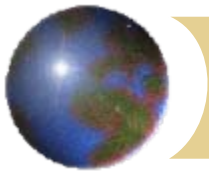
Korea and Taiwan followed Japan ...





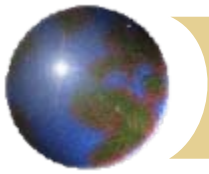
... so will China and India too, to avoid social unrest from widening urban-rural income gap?





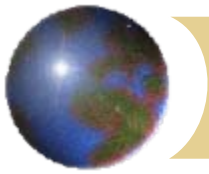
Implications for WTO negotiations

- Need large cuts to bound tariffs and subsidies so as to **reduce prospect of:**
 - **agric protection growth** in DCs as their incomes rise
 - continuing **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
 - Might it be better now to seek a much simpler 'critical mass' agric agreement among willing WTO members?



What alternative policy initiatives would boost food security

- Instead of variable trade measures, encourage governments to pour more of their support into agric R&D, rural education and infrastructure
- Payoff from ag R&D investments has risen with the spectre of climate change
 - Hotter, drier, more volatile seasonal conditions in some areas, more floods, hail, hurricanes in other areas
 - which also underlines the need for more-integrated global food markets so as to better share the burden of fluctuating weather (a form of global social insurance)



Thanks!

- For all Agric Distortions Research Project working papers and (by end-October) the global agric distortions database, see **www.worldbank.org/agdistortions**
- kym.anderson@adelaide.edu.au