Food Price Changes, Price Insulation & Poverty

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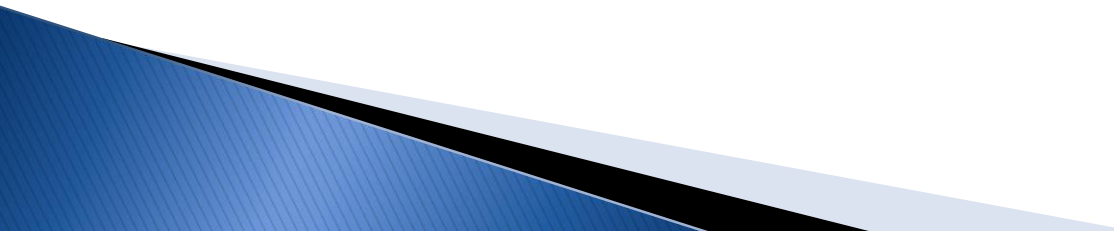
World Bank

World Bank Conference on Food Price Volatility, Food Security and Trade Policy
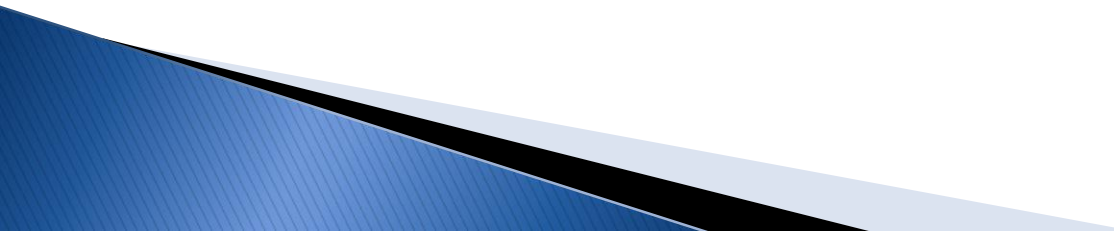
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Roadmap

▸ Price insulation as policy

▸ Impacts on world & domestic prices

▸ Poverty impacts of insulation

Price insulation

Price insulation

▶ Policy makers in many countries seem to strongly resist changes in world prices
  ◦ Adjust protection rates for key staples in order to avoid shocks to their prices

▶ Perhaps out of concern about the adverse impacts on poor net buyers of food when prices rise
  ◦ And on net sellers when prices fall?

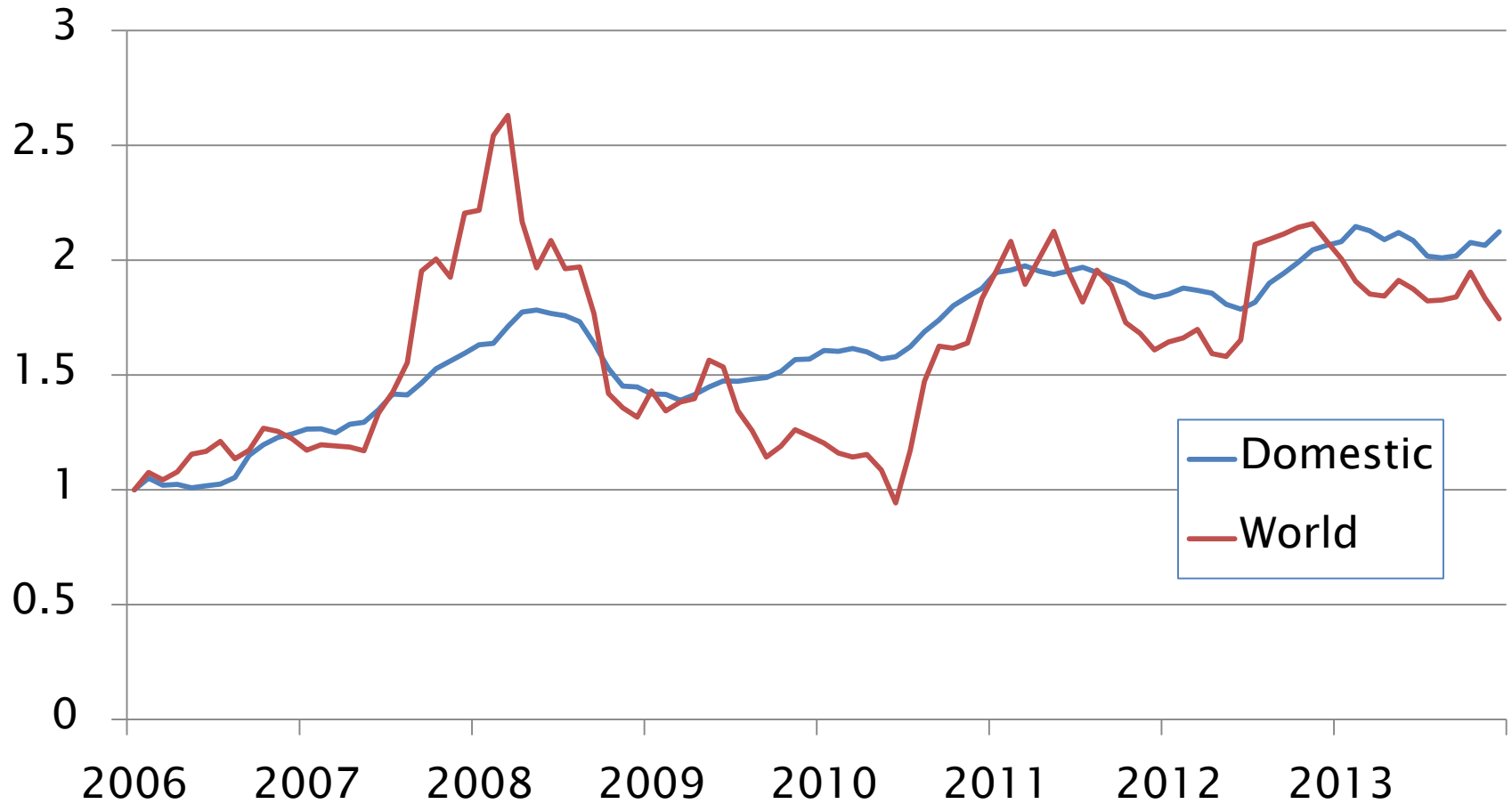▶ Tend to transmit longer-term price changes
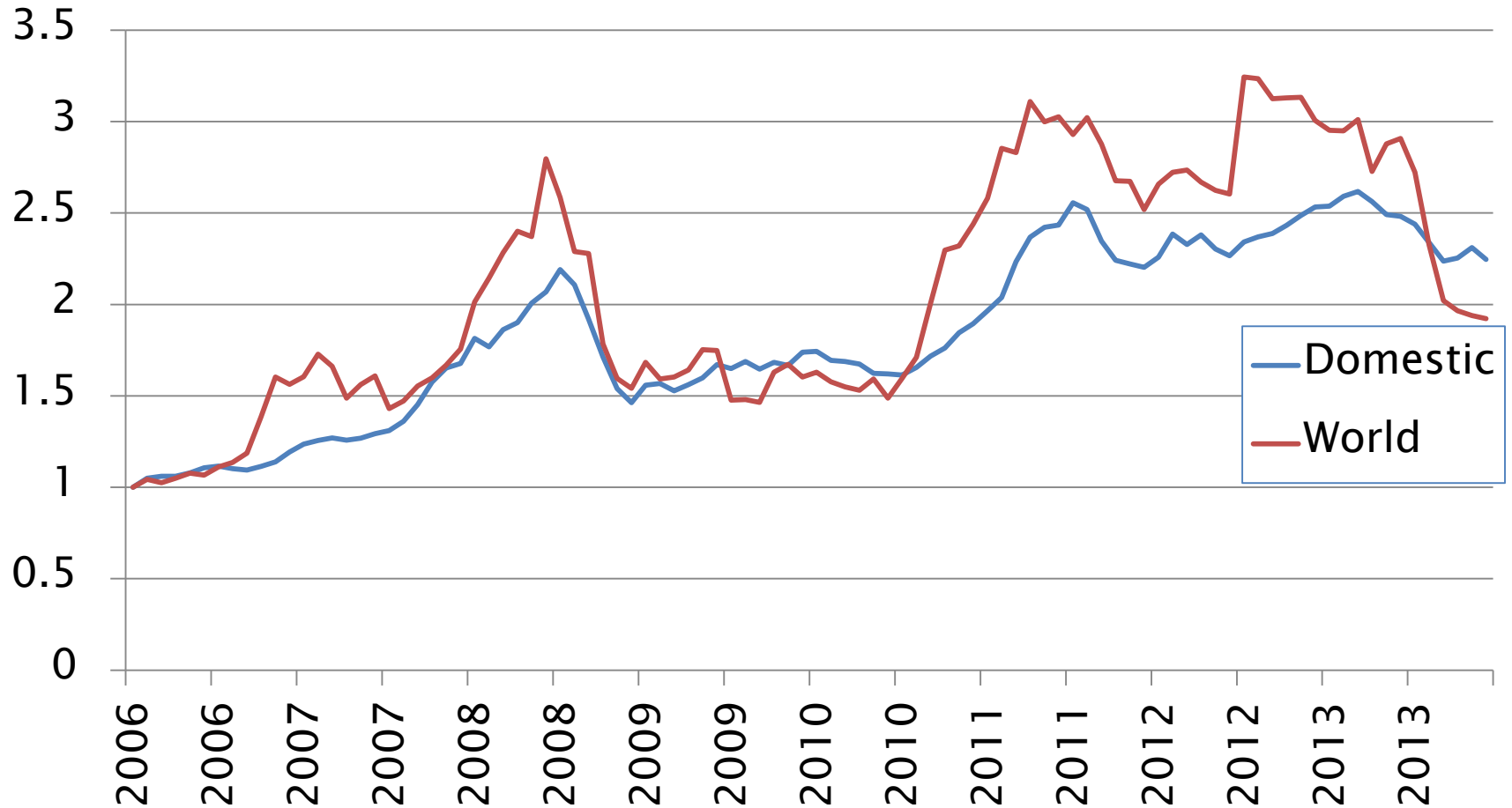
Food CPIs in developing countries
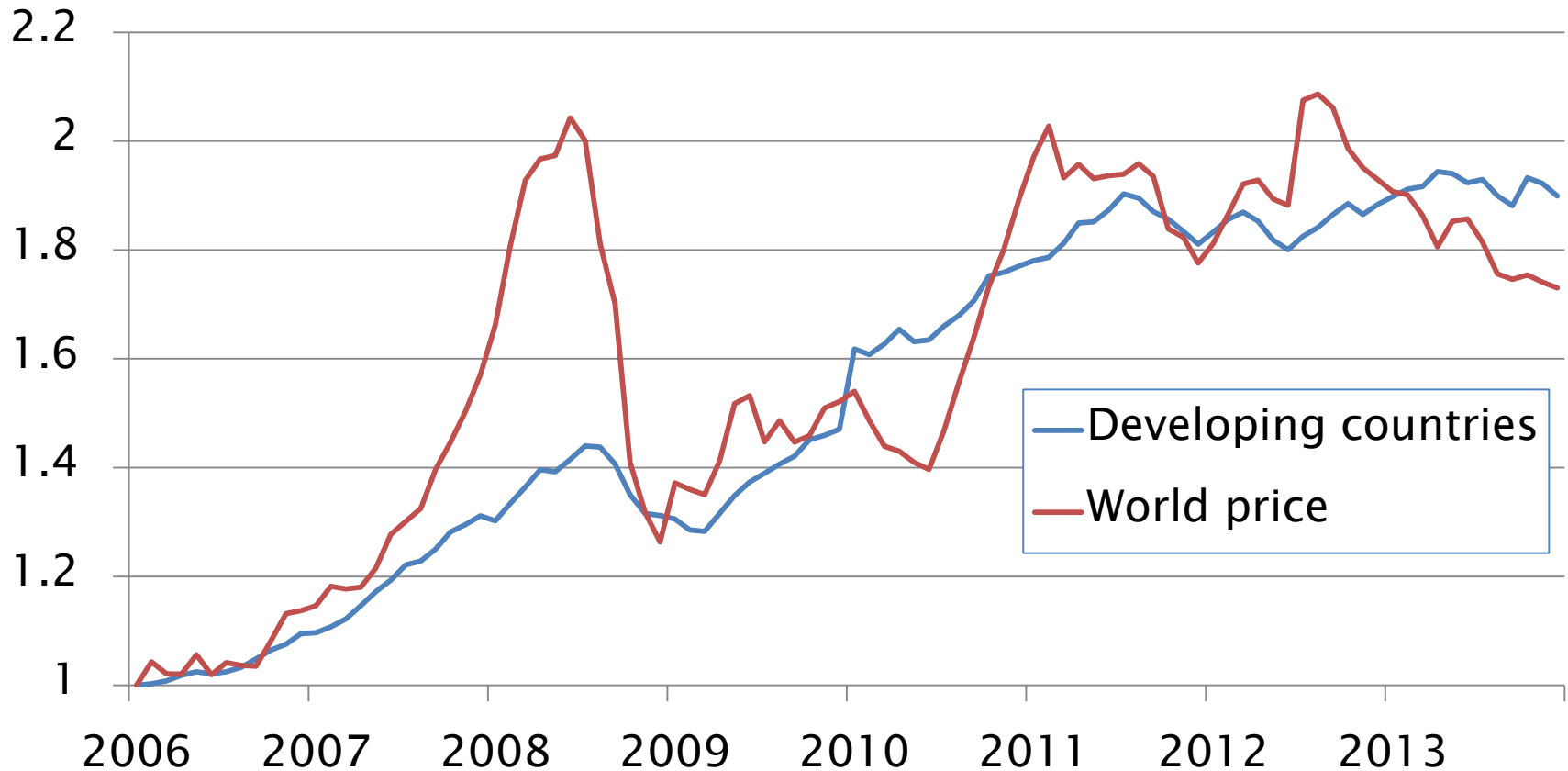
Very strong insulation for rice
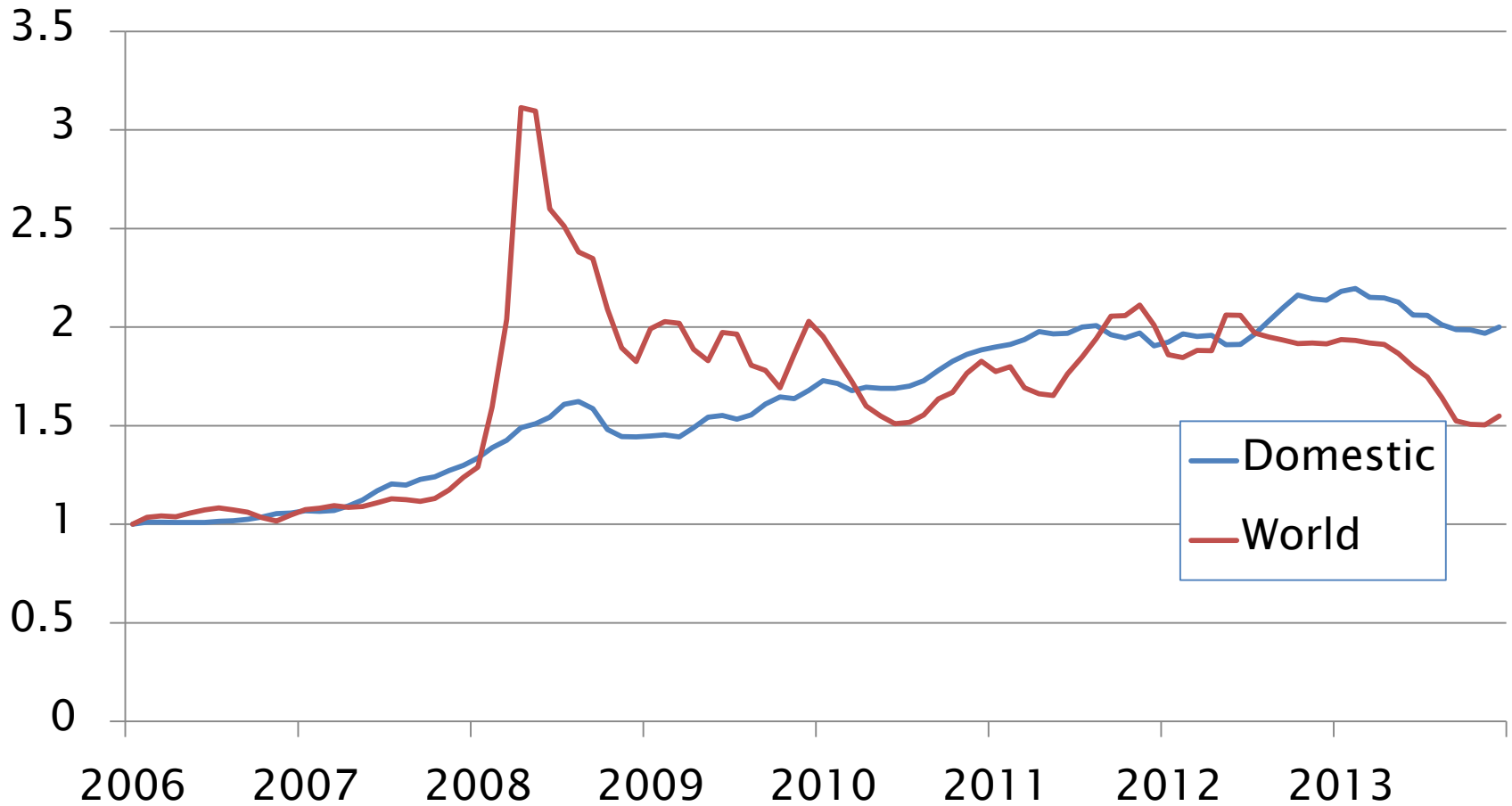
Also strong for wheat

Weaker for maize

What drives food trade policy?

- Partly an inverse relationship between world prices and protection rates
  - With the goal of stabilizing domestic prices

- Also a centripetal force holding domestic prices in a stable relationship with world prices?
  - Perhaps driven by Grossman-Helpman political-economy (PE) forces
    - The relative strength of producers and consumers in particular industries
      - Tending to result in high average protection in rich importers, low protection in poor exporters

Price insulation, rice, all countries
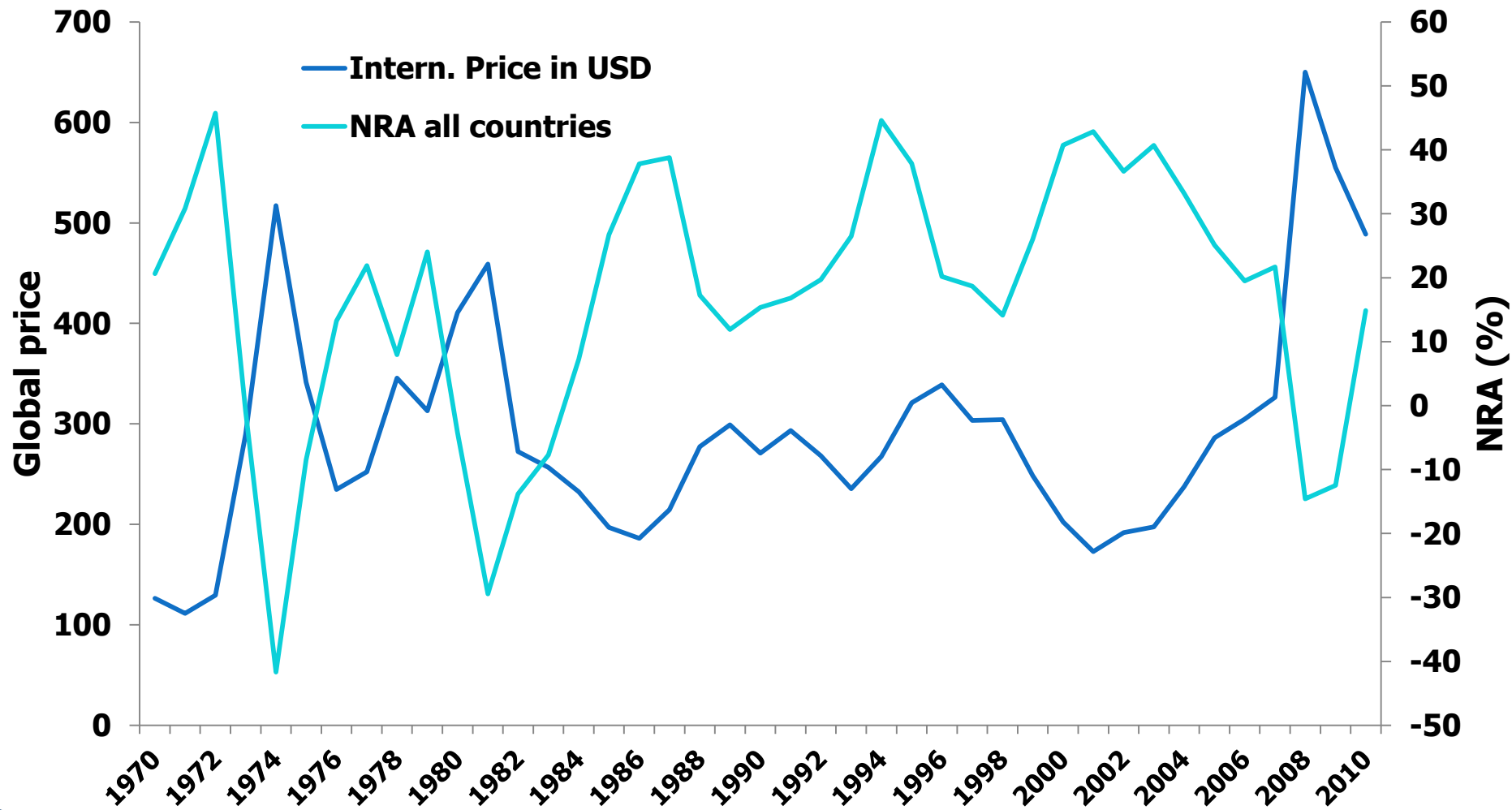
Source: Kym Anderson
(www.worldbank.org/agdistortions)

Features of price transmission

- Governments seem averse to sharp changes in prices
  - But also to moving too far from the Political Economy (PE) equilibrium

- Perhaps like an Error Correction Model?
  - $\Delta\tau = \alpha.\Delta p^w_t + \beta[p_{t-1} - \gamma.p^w_{t-1}]$

    - Where $\tau=(p-p^w)$; α reflects costs of adjustment; $[p_{t-1} - \gamma.p^w_{t-1}]$ is the deviation from the PE equilibrium; β reflects costs of being out of equilibrium. All variables in logs
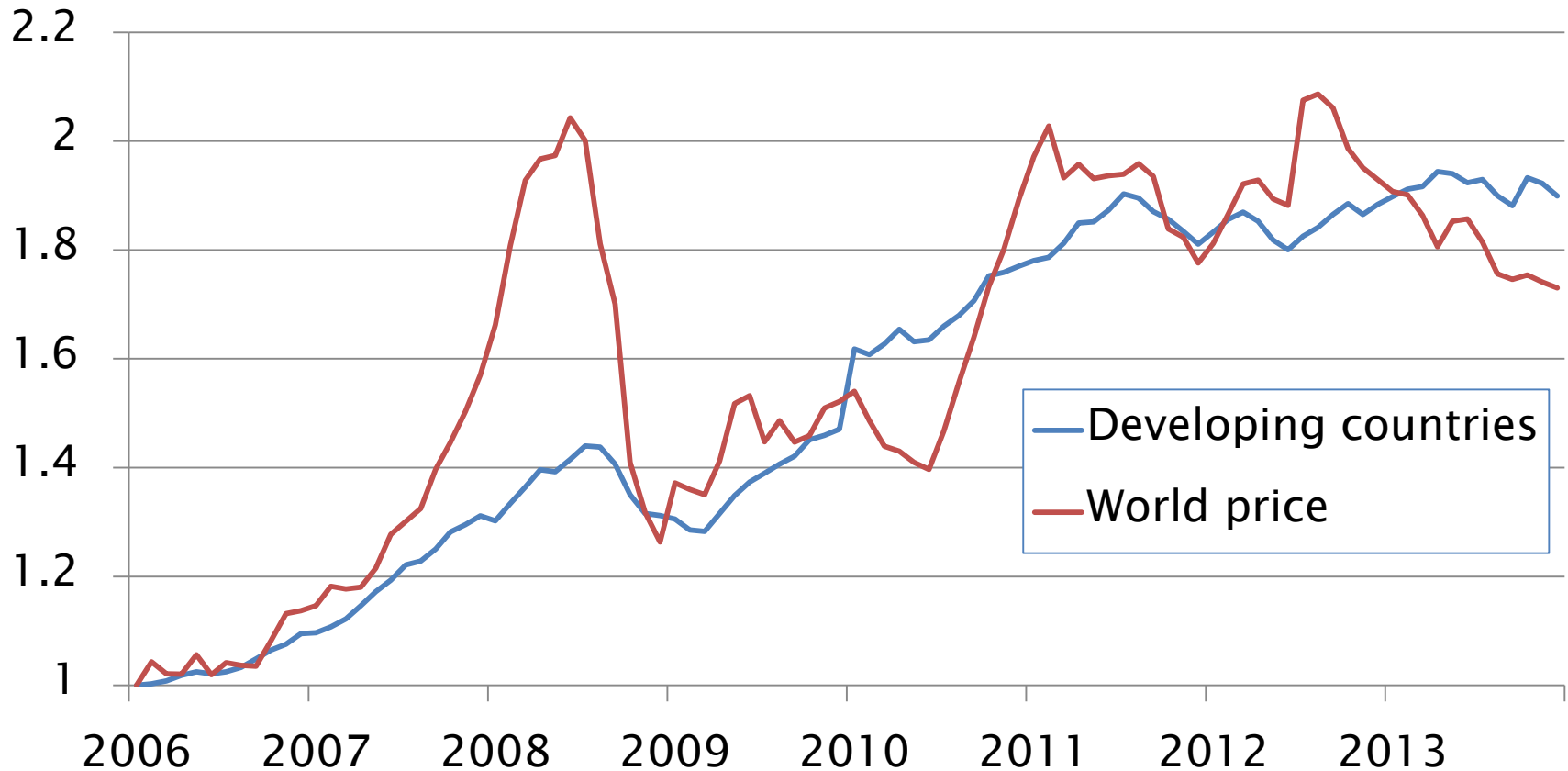
ECM estimates– simple averages

	α	β
Rice	-0.50	-0.36
Wheat	-0.52	-0.31
Sugar	-0.53	-0.20
Maize	-0.35	-0.44
Soybeans	-0.40	-0.46
Beef	-0.39	-0.31
Poultry	-0.34	-0.46

ECM estimates

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Strong insulation for staples

Food CPIs in developing countries

Impacts on price volatility

Insulation raises world price volatility –Simulated Std Dev of world prices

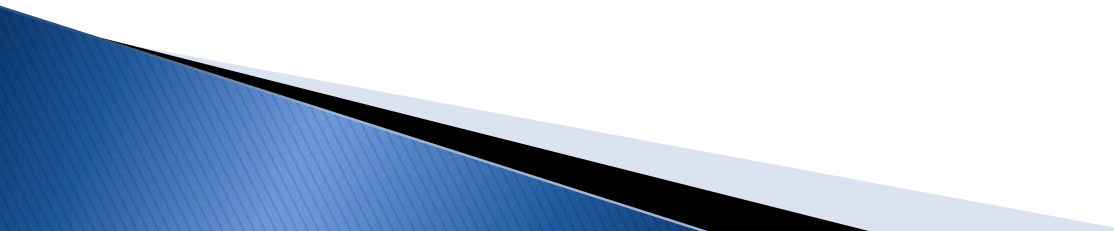| Commodity	No insulation	Insulation
Rice	2.1	5.0
Wheat	3.8	6.7
Sugar	2.7	8.2
Beef	1.6	2.3
Maize	5.1	7.4
Soybeans	3.8	4.9
Pork	0.6	0.9

But no change in the distribution of domestic prices
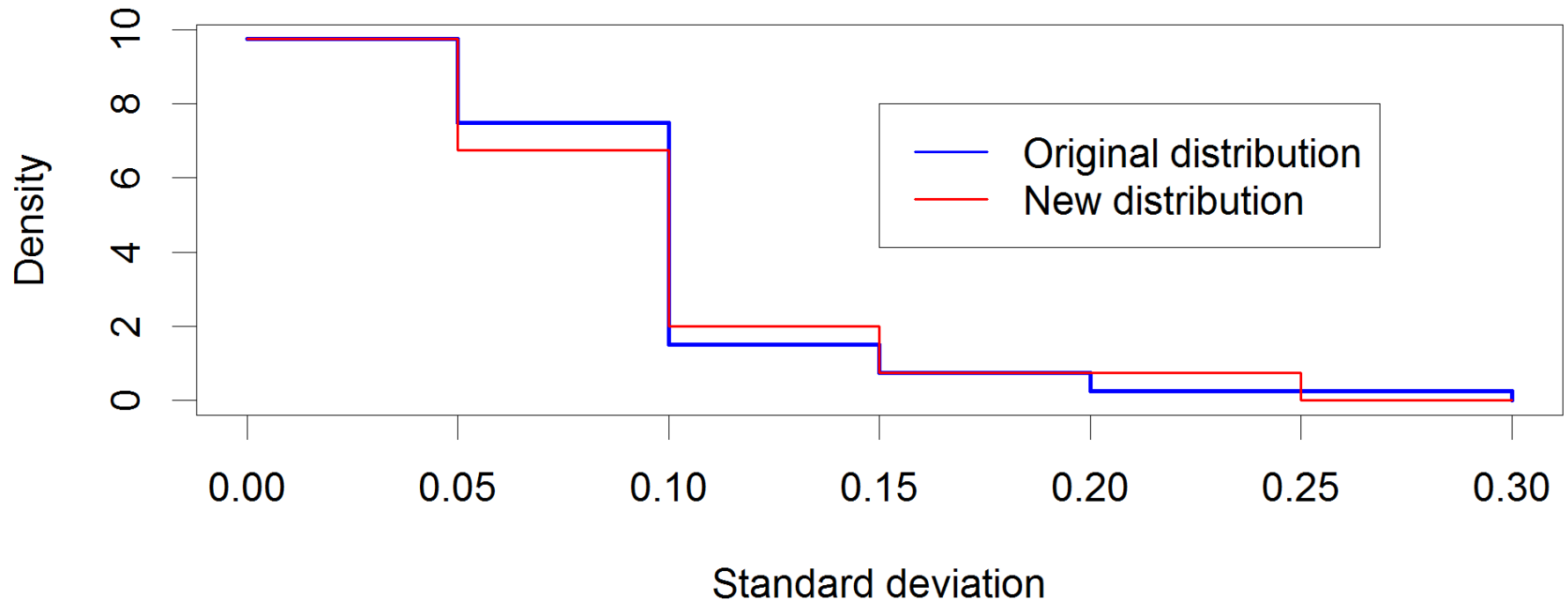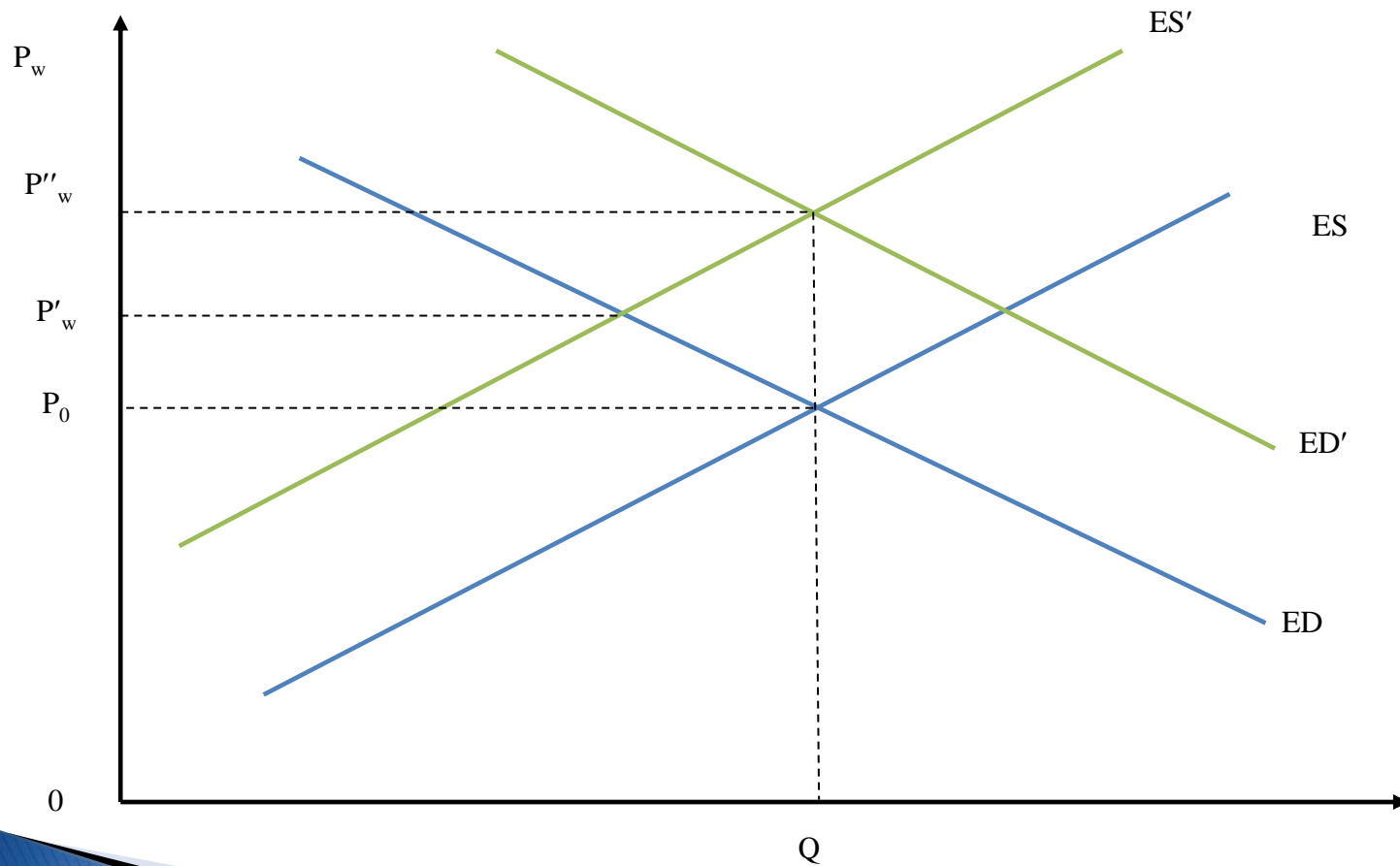
Poverty impacts of insulation

Each country's response is sensible

- Rapid price increases raise poverty because poor producers have little time to adjust
  - And there isn't time for wages to adjust

- Rapid price declines create similar vulnerabilities for producers
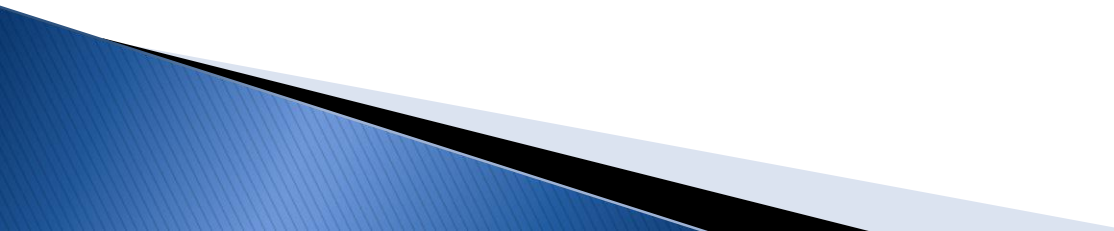
- Longer run price adjustments allow time to adjust

Cumulative effects of interventions

- Countries' own interventions tend to lower domestic prices when world prices rise
  - Export restrictions/cuts in import duties
  - Very consistent response across many countries

- But combined effect is to raise world prices
  - If all countries do it, completely ineffective
  - … even though it looks effective to each country

- But countries reacted in many different ways
  - What was the effect on prices & poverty?

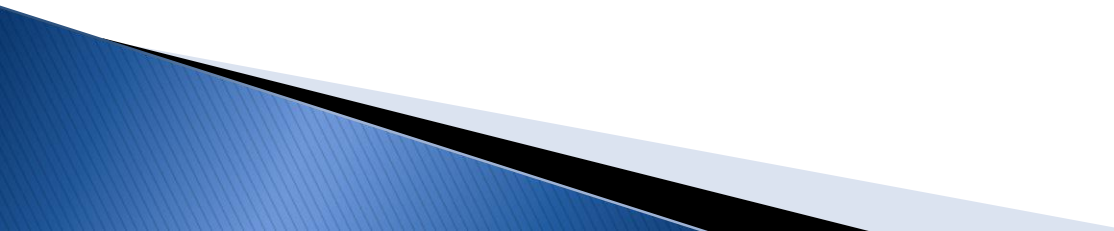# Ineffectiveness: equal export tax & import duty reduction

Methodology

- Calculate the changes in trade distortions between 2006 & 2008 for each country

- Calculate impacts of these changes on world & domestic prices

- Calculate counterfactual poverty implications
  ◦ Poverty impacts of each country's own policies alone
  ◦ Poverty impacts of all actions

Poverty impacts at $1.25/day, % pts
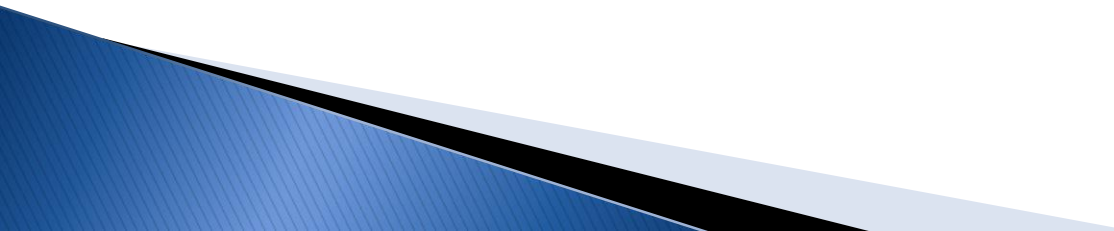
	Everyone's action	Own actions
China	0.4	-0.6
Côte d'Ivoire	0.5	-1.8
Indonesia	0	-1.4
India	0.1	-4.2
Malawi	2.4	0.7
Niger	1.0	-0.5
Nigeria	-0.9	-1.9
Tanzania	0.1	-0.3
Viet Nam	-2.6	0.3
Zambia	-1.9	-1.5
World (million)	8	-84

Policy issues

- Policies such as social safety nets are individually and collectively effective
  - There is an income effect that adds to price volatility
    - – but this is tiny relative to insulation

- Need to take into account desire to insulate

- Can we devise rules/approaches that reduce the collective action problem?

Conclusions

- Price increases raise poverty in short run
  - Longer term impacts reversed by wage impacts & second-order terms

- Policy makers seem to insulate from world price changes in the short run
  - But to transmit price changes within a few years

- Insulation reduces poverty impacts individually
  - But appears to be collectively ineffective
  - Need to develop policies that work

References

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