



Meeting the Demand for Food:
Prices or Productivity
by
Will Martin and Maros Ivanic

Power Point Presentation for the
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Analytic Symposium
*“Confronting Food Price Inflation:
Implications for Agricultural Trade and Policies”*

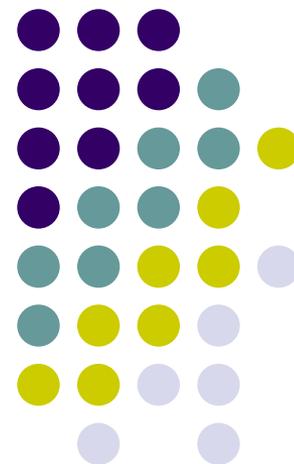
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Meeting the Demand for Food: Prices or Productivity?

Will Martin and Maros Ivanic*

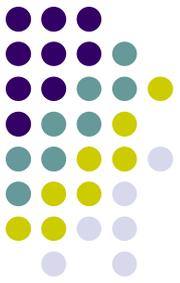
IATRC Seattle Symposium

22 June 2009



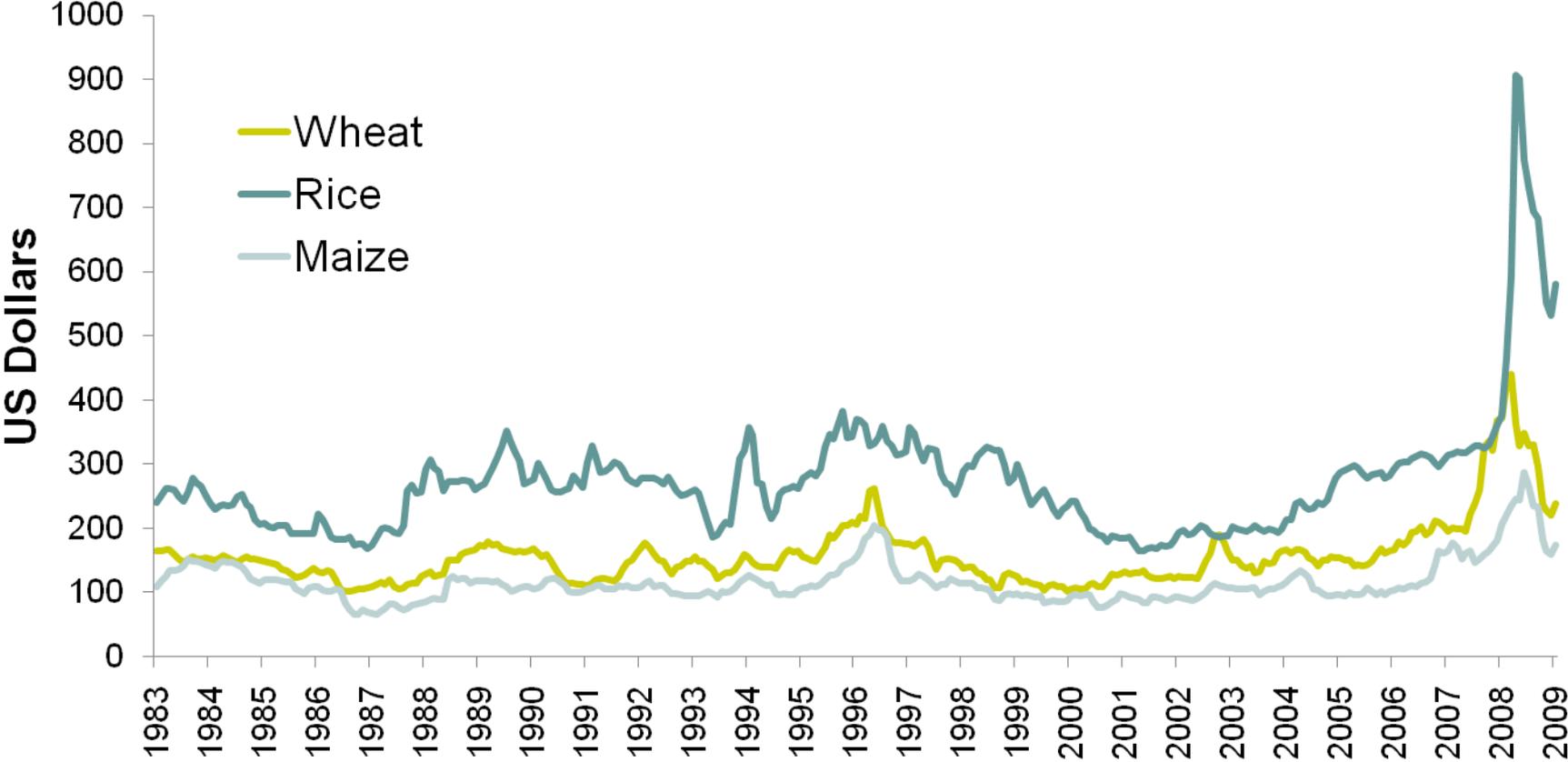
*This presentation reflects the views of the authors alone

Key issues



- Demand for food seems likely to grow strongly
 - Food, feed, fuel demand
- Demand can be met by
 - Higher prices or higher productivity
 - Domestic prices may be further increased by protection
- Price instability/vulnerability questions important
- Impacts of higher food prices and of productivity improvements for poverty in poor countries

Dramatic rise in food prices



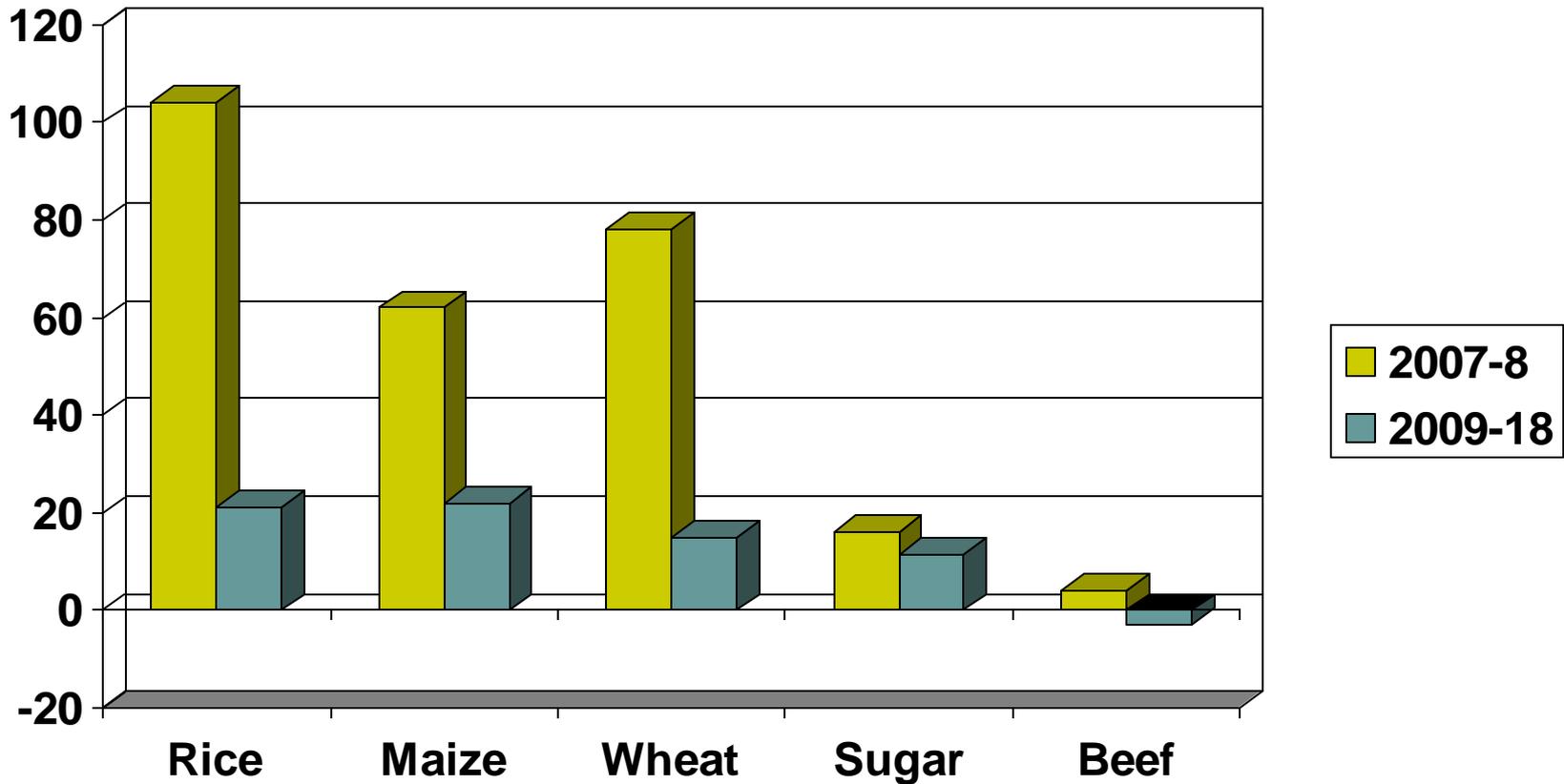
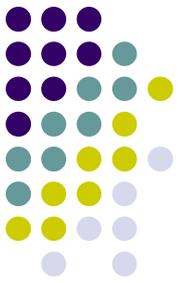
The spike is over



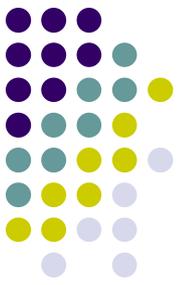
- Food prices seem likely to remain higher
 - Increasing demand for food, feedstuff, fuel
 - Higher energy prices
- What are the implications for poverty?
- How might policy responses affect poverty?

OECD-FAO projections to 2018

% change relative to previous decade

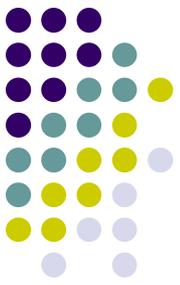


Impacts of high food prices on poor people an empirical question



- Rural people are almost always poorer than urban, but
 - Poorest spend 75% of their income on staple foods
 - Poor farmers don't gain much from higher food prices
 - Many are net buyers of staple foods
- Impacts on poverty depend on gains to poor net sellers relative to losses of poor net buyers
 - Not enough to know whether poor people are predominantly net buyers or sellers
 - Which commodity prices change may be important

In our first look at this question



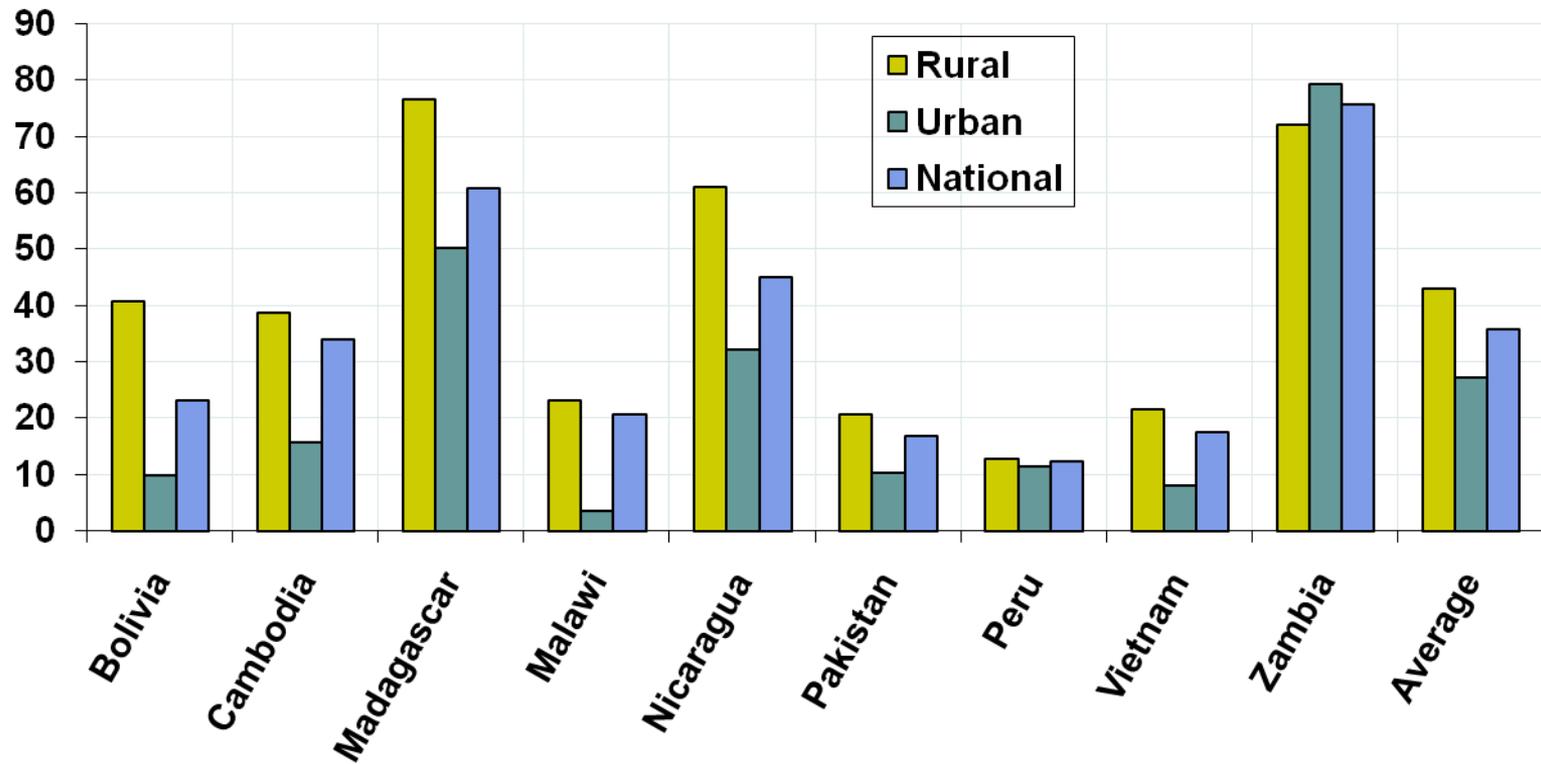
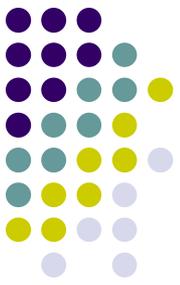
- Obtained data on household production, purchases & sales of major staple foods
 - maize, wheat, dairy, rice, sugar, beef, & chicken
 - sales of unskilled labor
- Obtained household survey data for ten low-income country-periods
 - Bolivia, Cambodia, Madagascar, Malawi, Nicaragua, Pakistan, Peru, Vietnam, Zambia
- Used World Bank \$1 per day poverty rates

Assessing impacts in poor countries

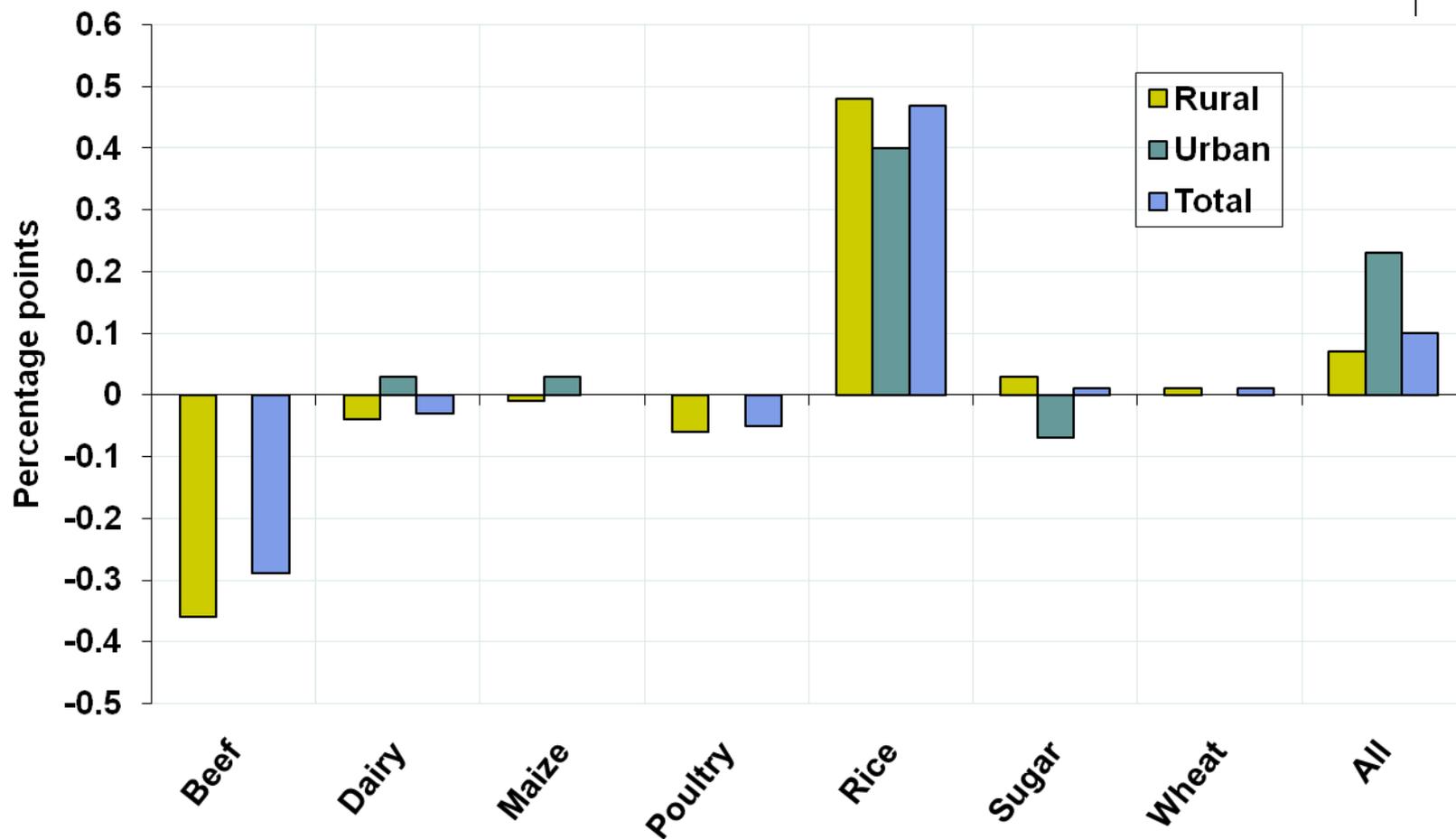


1. First check whether rural poverty rates are higher than urban
2. Assess impacts of 10 % price changes of staple foods to see which are important
 - Take into account impacts through commodity prices & unskilled wages
 - Assess impacts on household welfare
 - Calculate impacts on poverty rates & gaps
3. Consider food price changes 2005- 2008(Q1)

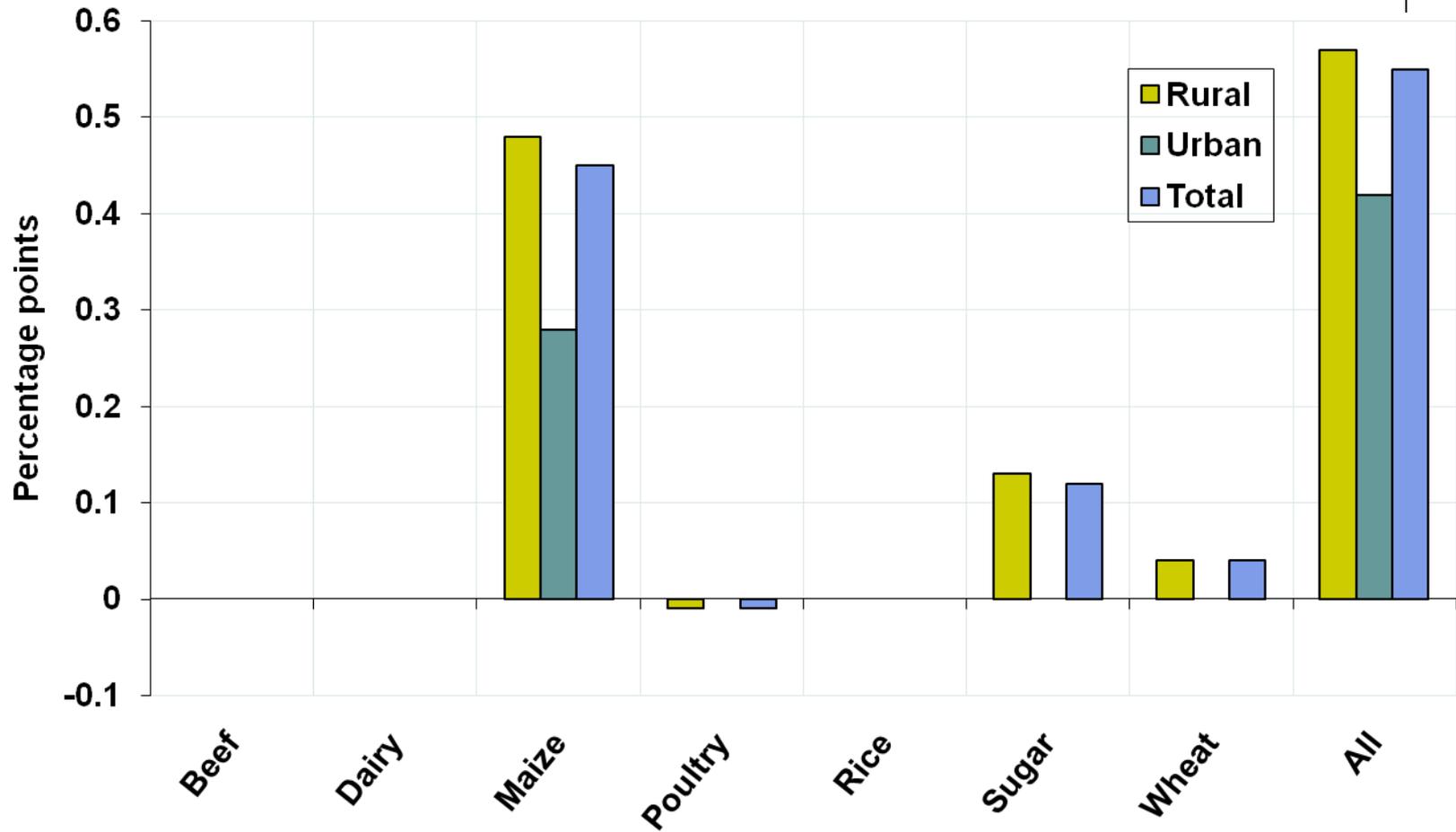
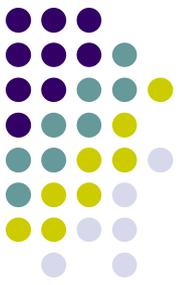
Rural poverty rates higher in 8 of 9 countries



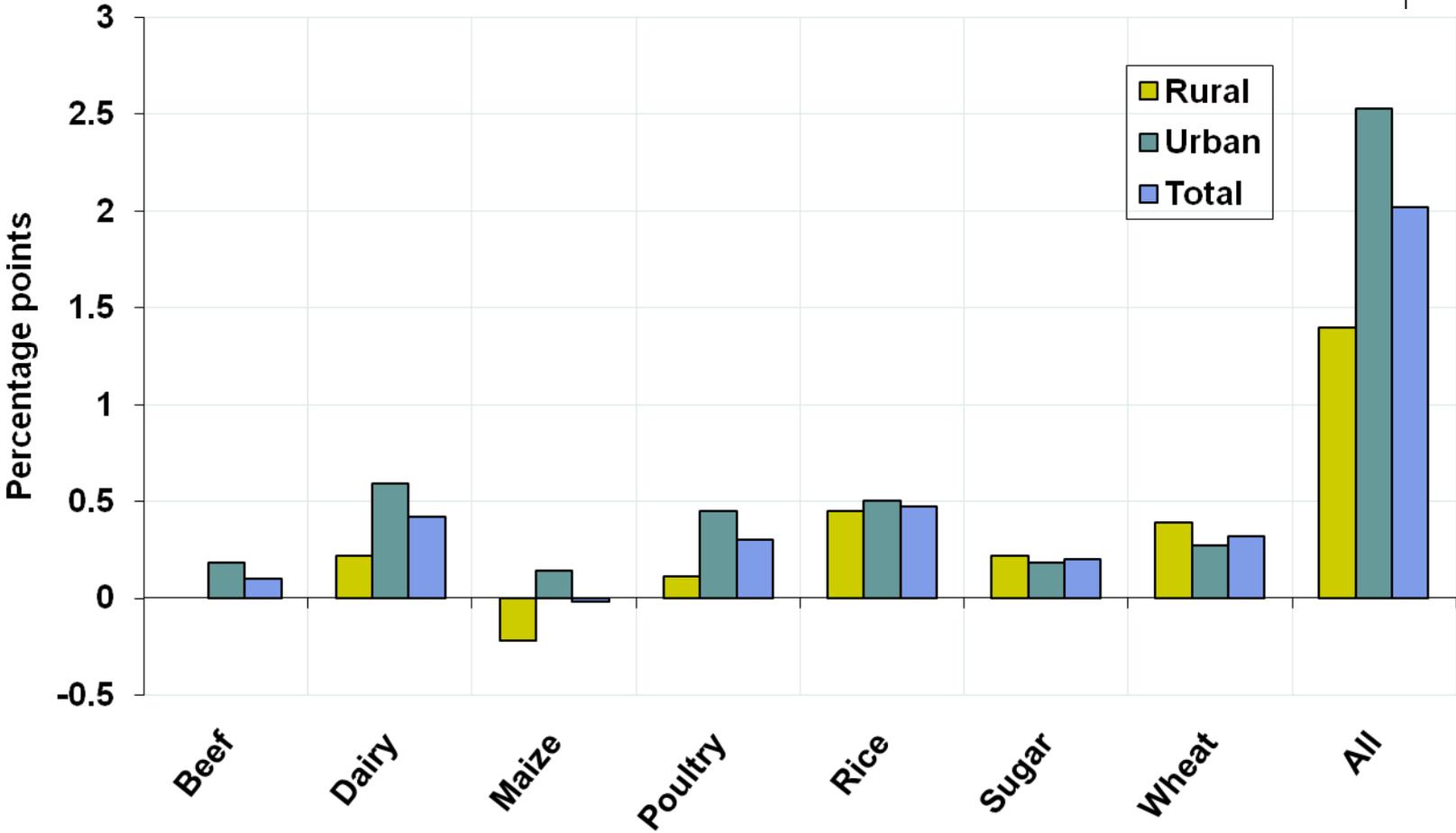
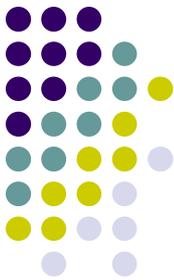
Change in poverty rates: Cambodia



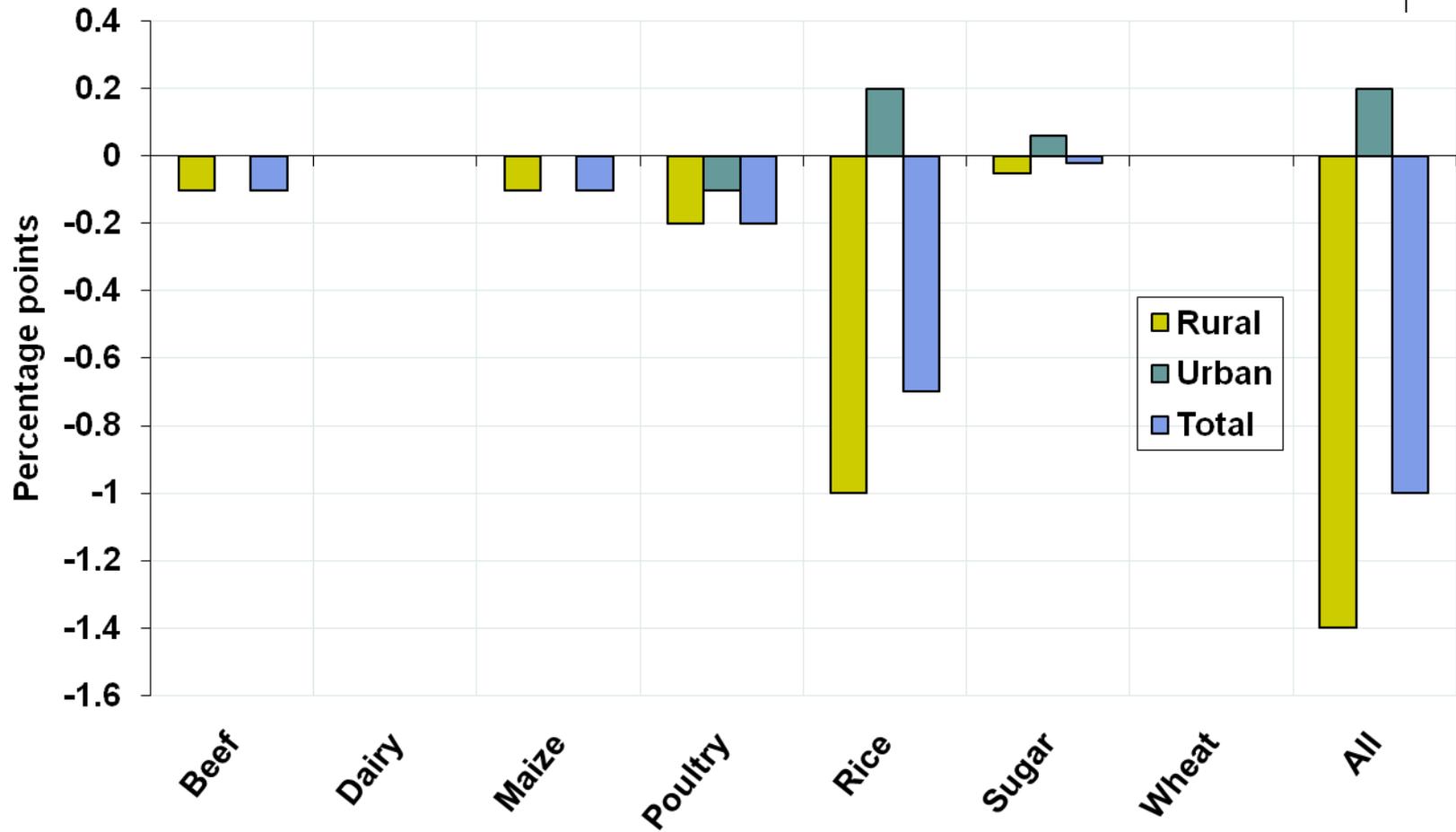
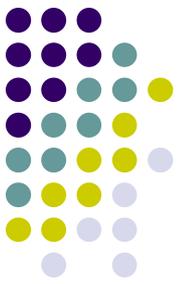
Change in poverty rates: Malawi



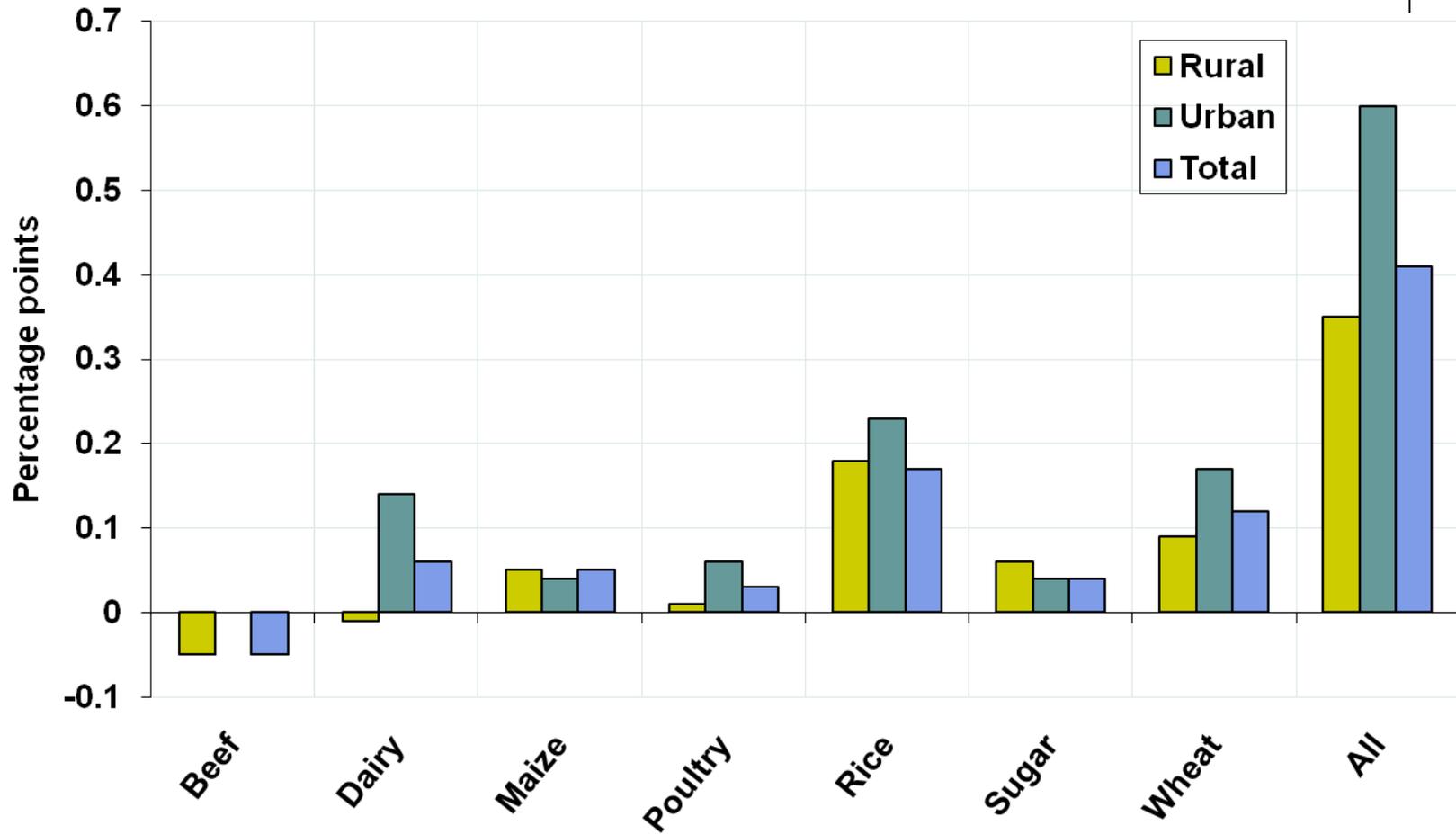
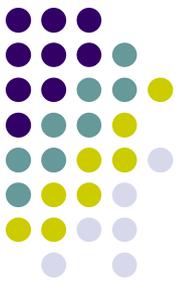
Change in poverty rates: Nicaragua



Change in poverty rates: Vietnam



Change in poverty rates: Average

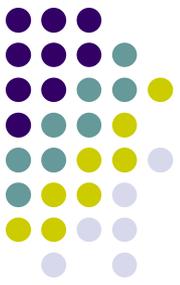


Effects of food price surge: 2005–2008.Q1



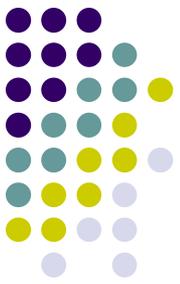
- Big increases in world prices
 - US dollar devaluation & increases in other prices reduce the impact
- Many countries had changed trade policies
 - Export restrictions lowered prices in Vietnam & others
 - Tariff reductions lowered domestic prices in many cases
 - Assume only 66% of price rise transmitted from world prices to domestic

Percentage point change in poverty rates at \$1/day:



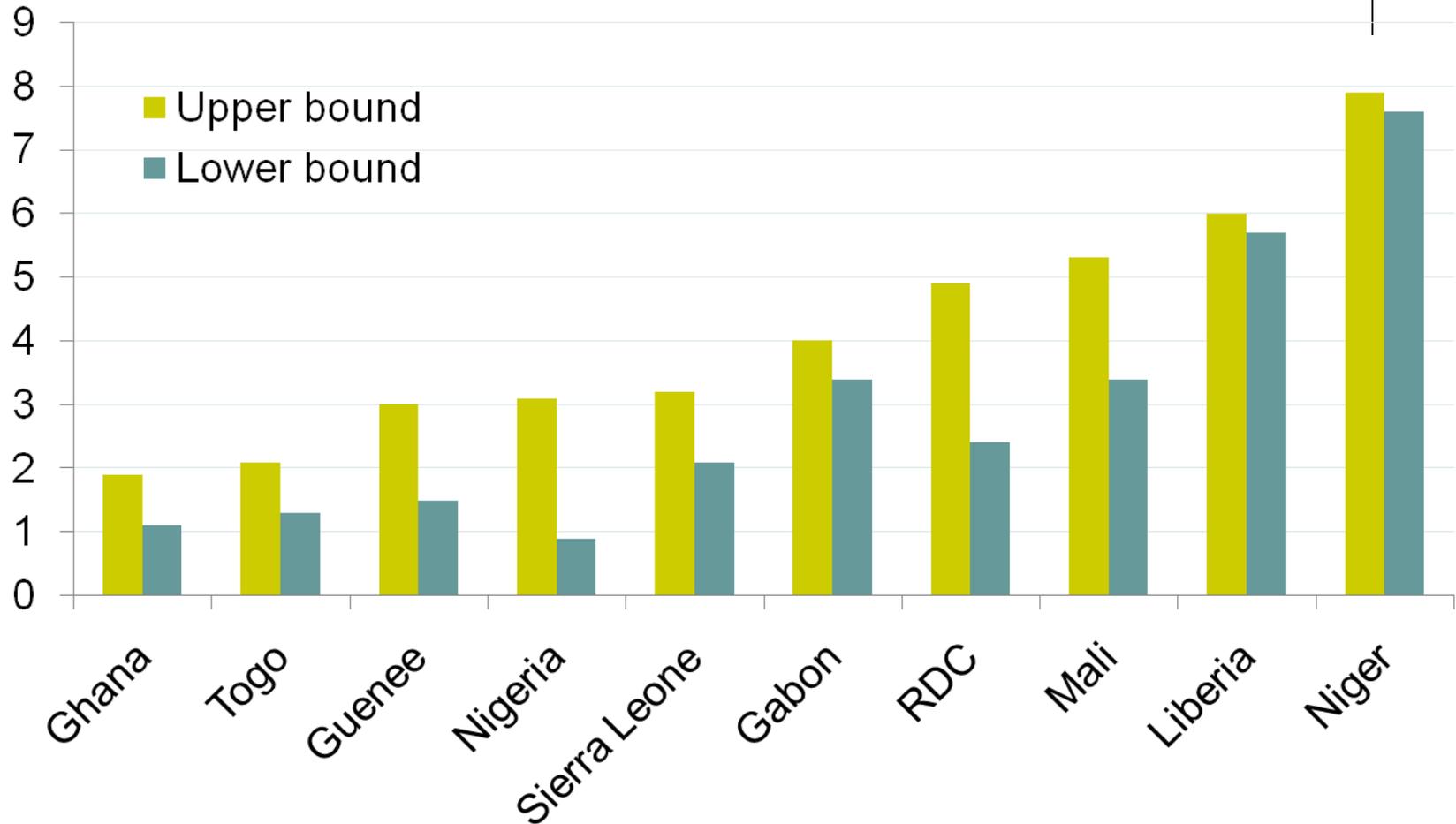
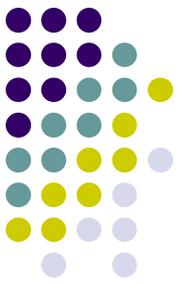
- Raises average poverty rates in our sample of nine countries (in percentage points)
 - Rural: 4.2, urban 5.0, total 4.5
 - With 2.3 billion people in low-income countries = **105 million** people thrown into poverty
- Historical rate of poverty reduction since 1984 0.7 percentage points/ year
 - Suggests a loss of about **7 years** in poverty reduction
- Based only on short-run impacts
 - Longer-term impacts may be more favorable

What do other studies find?



- Most obtain similar results
 - Food price rises raise poverty in most low-income countries
 - But may lower it in cases like Vietnam
 - Supported by Minot and Goletti 1998; Glewwe 2008
- Wodon and Zaman for Africa, Inter-American Development Bank for LAC, AsianDevB for Asia
- Aksoy and Izik-Dikmelik highlight the diversity of net buyers/sellers

Wodon & Zaman—poverty impact of 50% price rise



Some thoughts on policy



- Protection generally unhelpful for food security
- Taxation of export crops—usually cash— can raise poverty
- The desirability of price insulation debated
 - Potentially helpful for individual countries, but increases the instability of world markets
- Stabilization of world market prices is very difficult
 - Domestic storage may be inadequate
 - May be a role for some national public storage
- Long-term food security comes from raising incomes
- Investments in agricultural R&D attractive

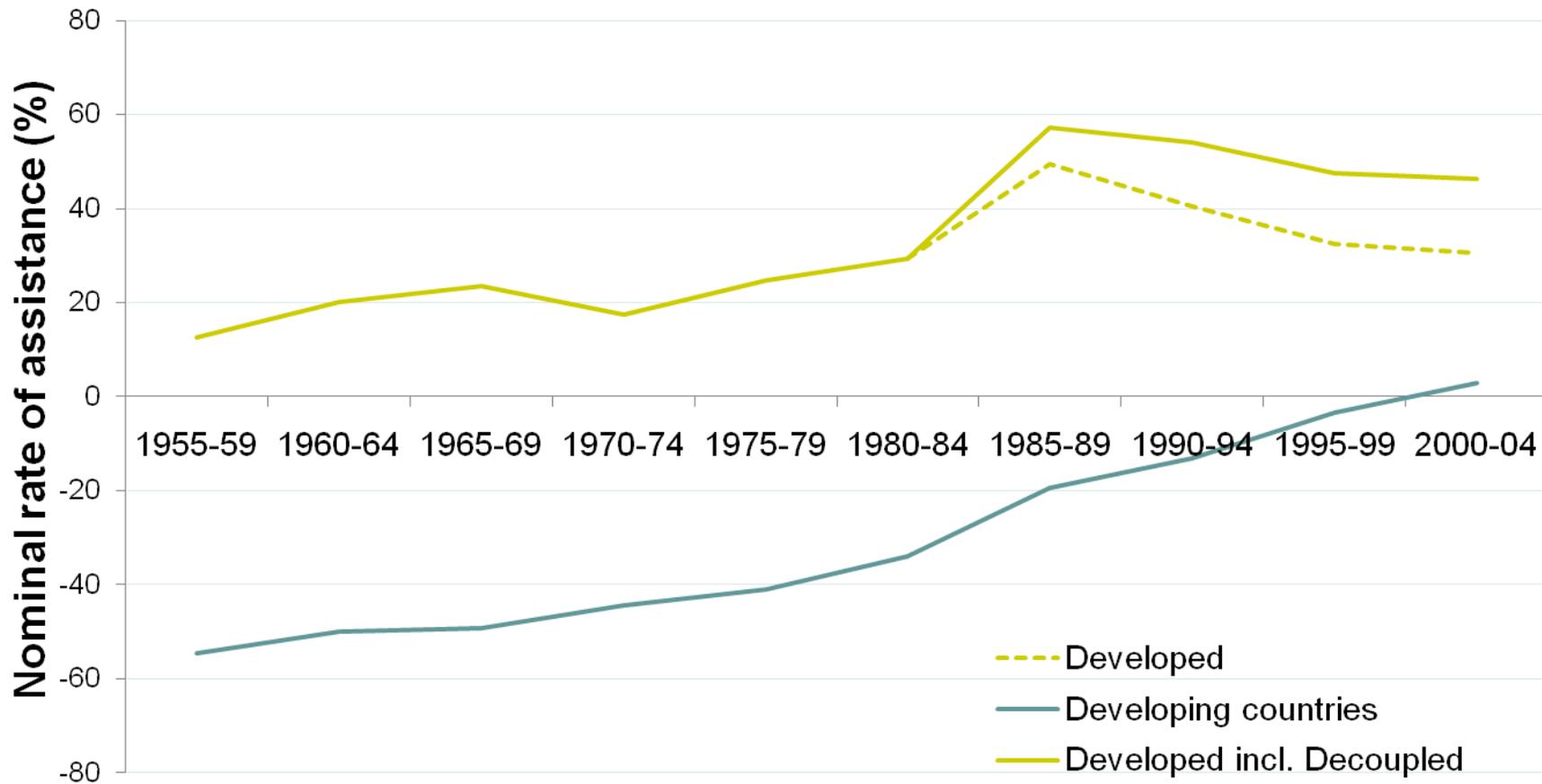


Protection?

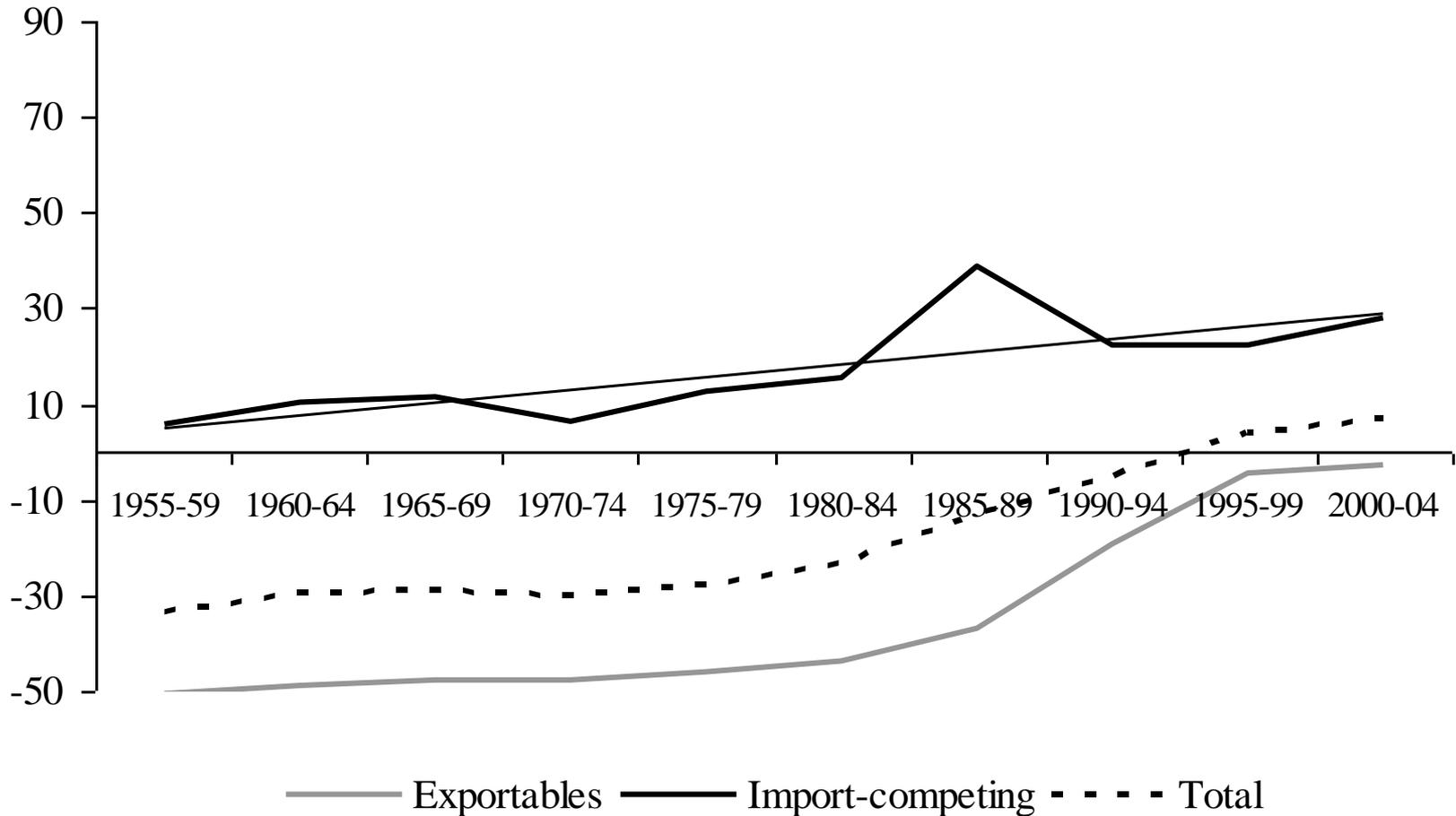
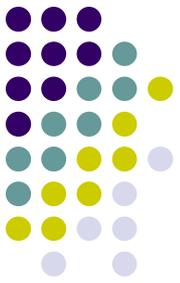
- Renewed interest in light of food crisis
 - And longer-term political-economy shifts
- Raises national output, reduces consumption, raises self-sufficiency
- But self-sufficiency is not food security
 - Food security depends on whether people—especially poor people—have access to food
 - Higher prices resulting from protection are likely to reduce access to food and hence food security
 - In both short and long run
- WTO disciplines reduce industrial country insulation and shocks to developing countries

Changing nature of world agric protection

www.worldbank.org/agdistortions



Developing country agric protection

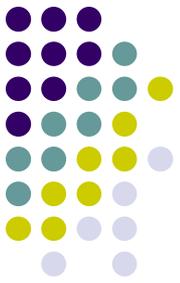


Meeting long term demand growth



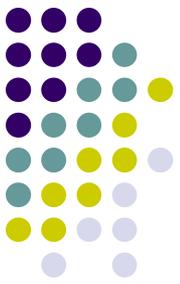
- Protection cannot raise food output substantially
- Improving technology can
- Appears to have been serious under-investment
 - Rates of return on public investment of 50%/year
 - Great scope for public-private partnerships
- Important to ensure technologies improve in developing countries
 - Remember the treadmill
- Other sectors such as infrastructure, health interventions may be similarly underinvested

Productivity vs protection?



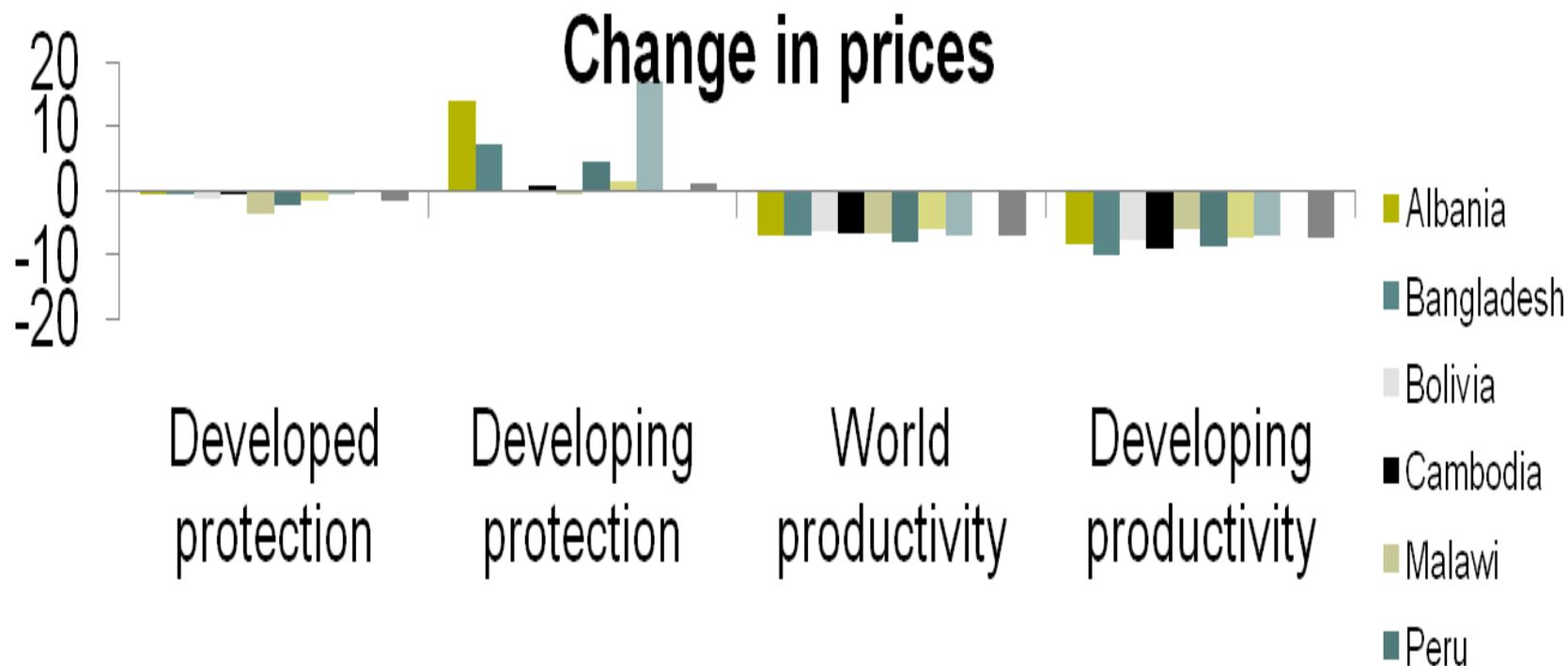
- Use the GTAP model to assess changes in policies needed to raise world agricultural output by 1%
- Trace out the impacts on
 - Agricultural prices
 - Agricultural output
 - Food prices
 - Food consumption
 - World prices
 - Poverty in a range of countries
- New sample of countries designed to consider a wider range of impacts than in previous work

Global impacts

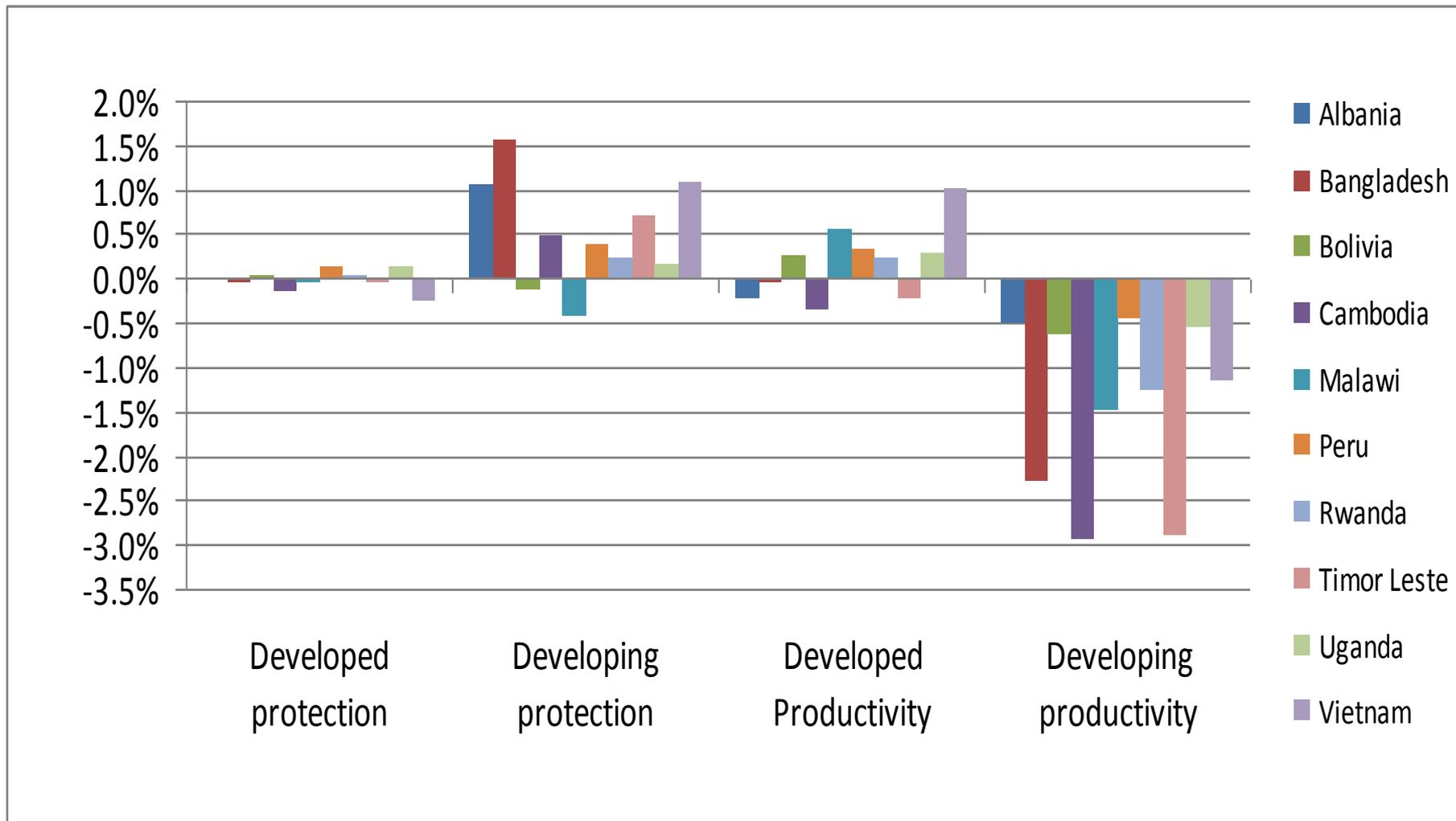


	Scenario			
	Rise in developed countries' protection	Rise in developing countries' protection	Rise in global agricultural productivity	Rise in developing countries' agric productivity
Policy change needed, %	30.1	88.2	4.2	7.6
Global agric export price, %	0.3	0.2	-6.7	-5.3
Agric output (given), %	1.0	1.0	1.0	1.0
Developing countries,%	-1.0	2.6	1.5	5.4
Food consumption,%	-0.5	-0.3	1.2	1.1
Developing countries, %	0.1	-0.9	1.5	2.2
Welfare change (\$bn)	-23.9	-24.8	99.4	95.5
Developing countries	-2.5	-21.6	46.2	78.9

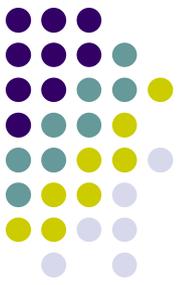
Impacts on farm prices in developing countries



Poverty impacts of raising world agric prodn by 1% through:



Safety-net policies important for instability



- Much more effective—where feasible—than policies targeting food prices for all
 - Food aid
 - Cash transfers
 - School food programs
- Short-term support to producers?
 - Subsidization of fertilizers, seeds etc to help increase agricultural supply
- Unpredictability of shocks argues for quite general programs, rather than a food focus

To conclude



- Most increases staple food prices raise poverty in poor countries
 - Many studies suggest these effects are currently large
- Growing food demand likely means higher prices
 - This problem could be exacerbated by increasing protection
- Most traditional policy recommendations intact
 - Protection raises self sufficiency, but reduces food security
 - Increased investments in R&D, infrastructure help lower poverty
 - Especially investments in developing country R&D
 - Social safety nets important for volatility