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Peter Timmer is a leading authority on agriculture and rural development who has published scores of papers on these topics. He has served as a professor at Stanford, Cornell, three faculties at Harvard, and the University of California, San Diego, where he was also the dean of the Graduate School of International Relations and Pacific Studies. A core advisor on the World Bank's World Development Report 2008: Agriculture for Development,



Timmer is working with several Asian governments on domestic policy responses to volatility in the global rice market. He is also an advisor to the Bill and Melinda Gates Foundation on agricultural development issues. He was the 2012 recipient of the Leontief Prize for Advances in the Frontiers of Economic Thought awarded by the Global Development and Environment Center at Tufts University.

The Asian Rice Market: Historical Perspective and Outlook for the Future

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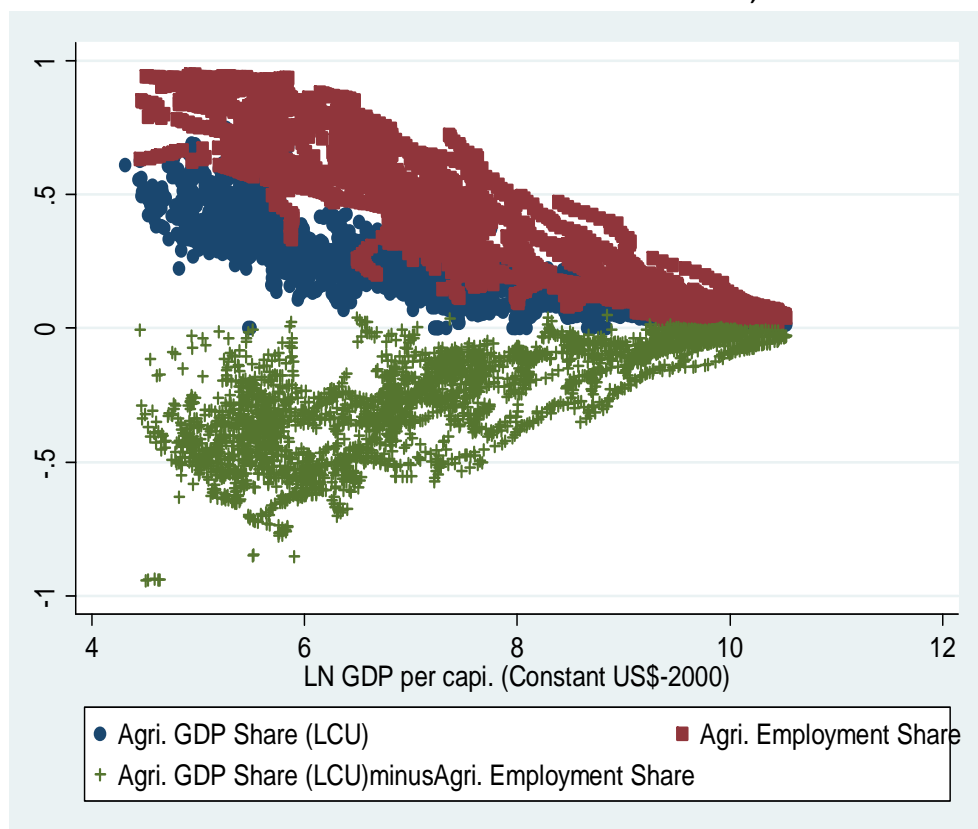
The Basic Market Transformations

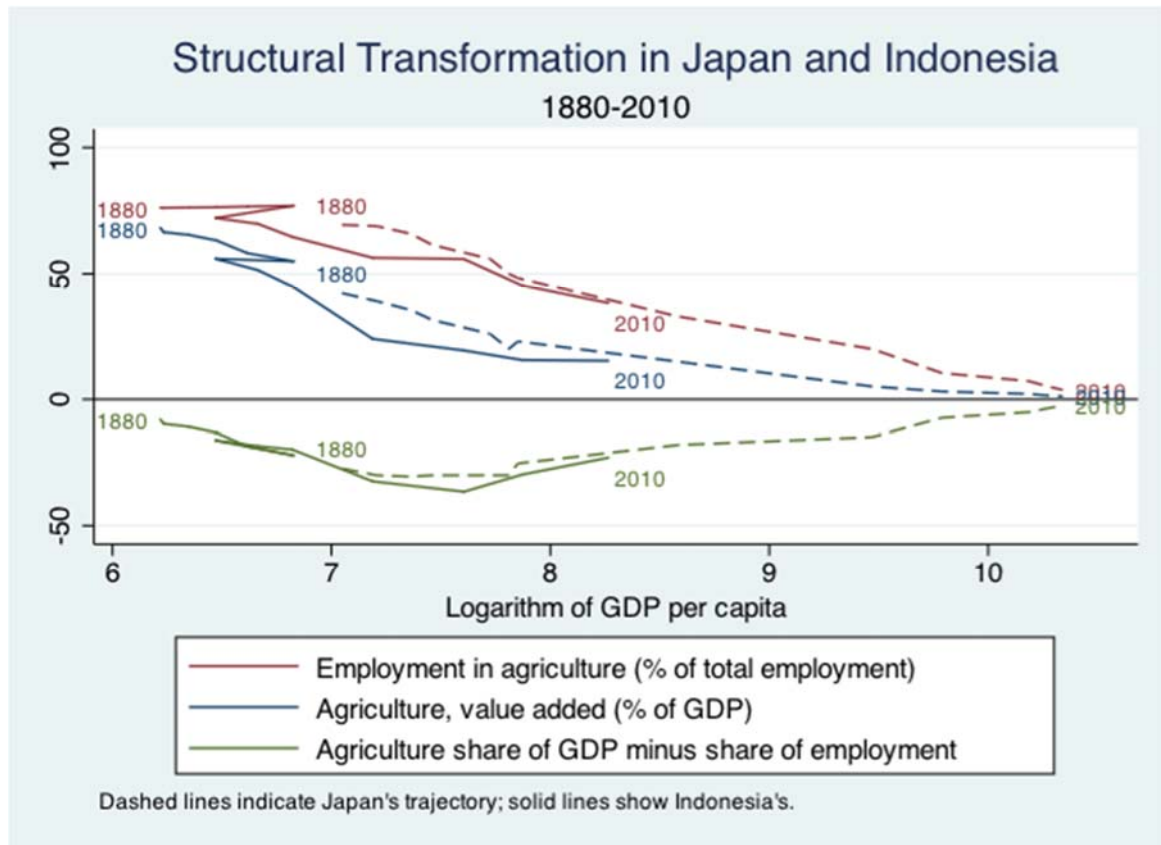
- *Structural transformation* of the economy
- *Agricultural transformation* of the sector
- *Dietary transformation* of eating patterns
- ...each driven by deep and basic global forces, as well as highly specific factors
- ...in Asia, rice is important in all three transformations



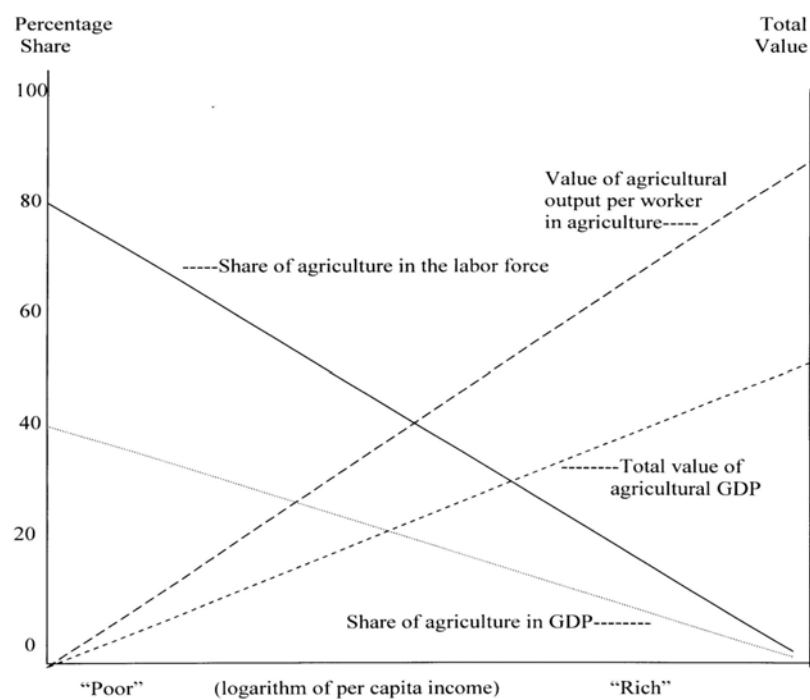
The structural transformation in historical perspective

The structural transformation in 86 countries, 1965-2000

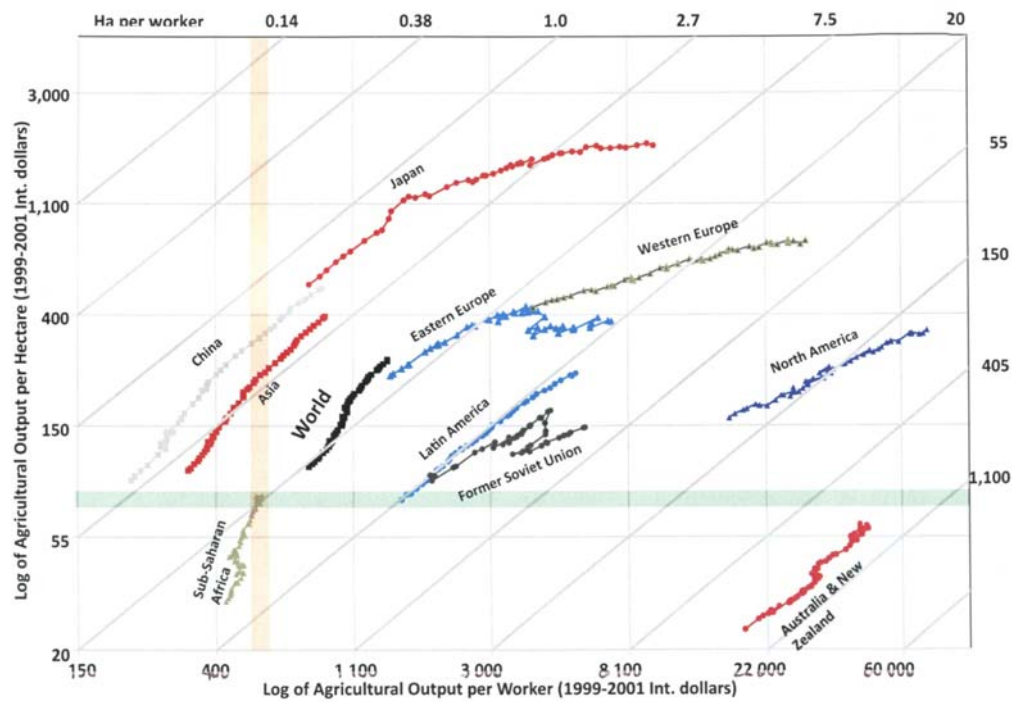




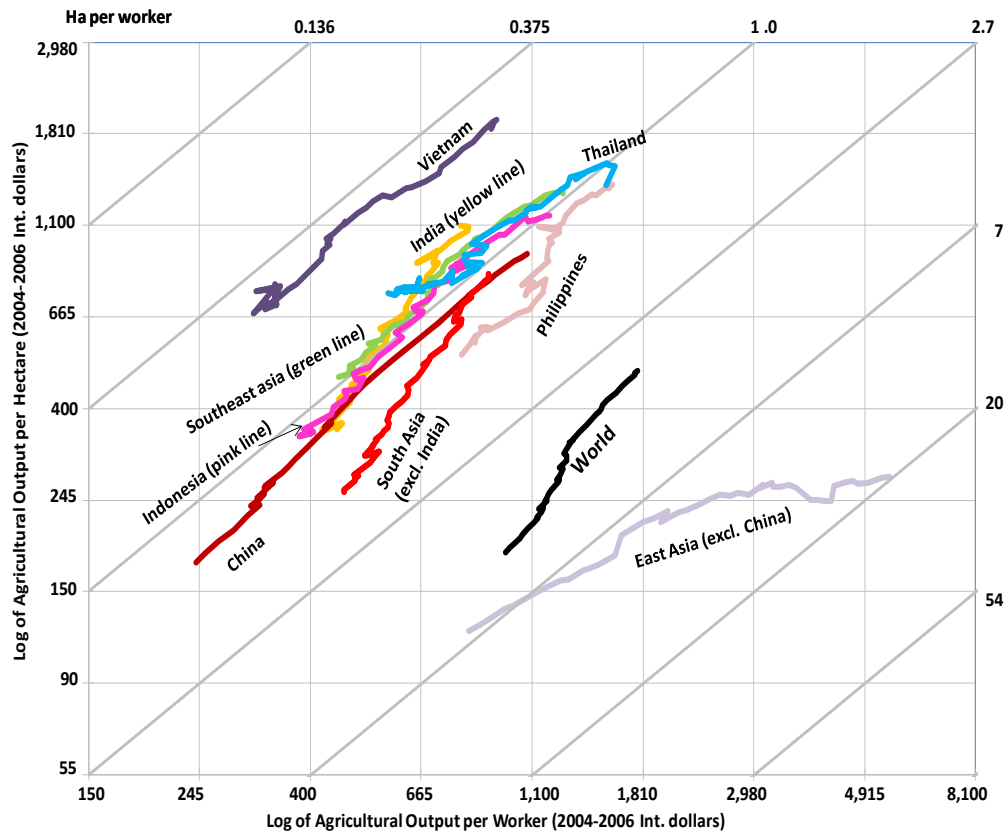
The Changing Role of Agriculture during the Process of Economic Development



Global Land and Labor Productivity Patterns, 1961-2009

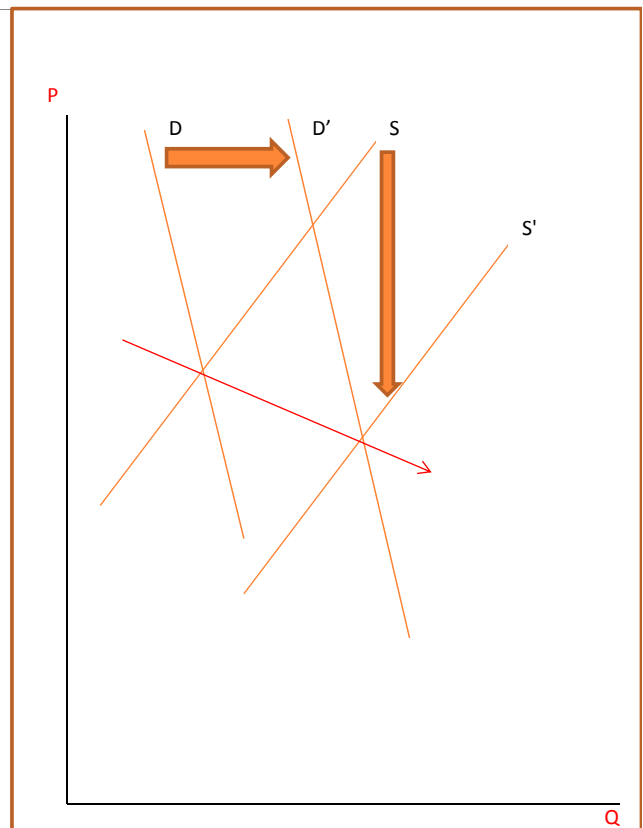
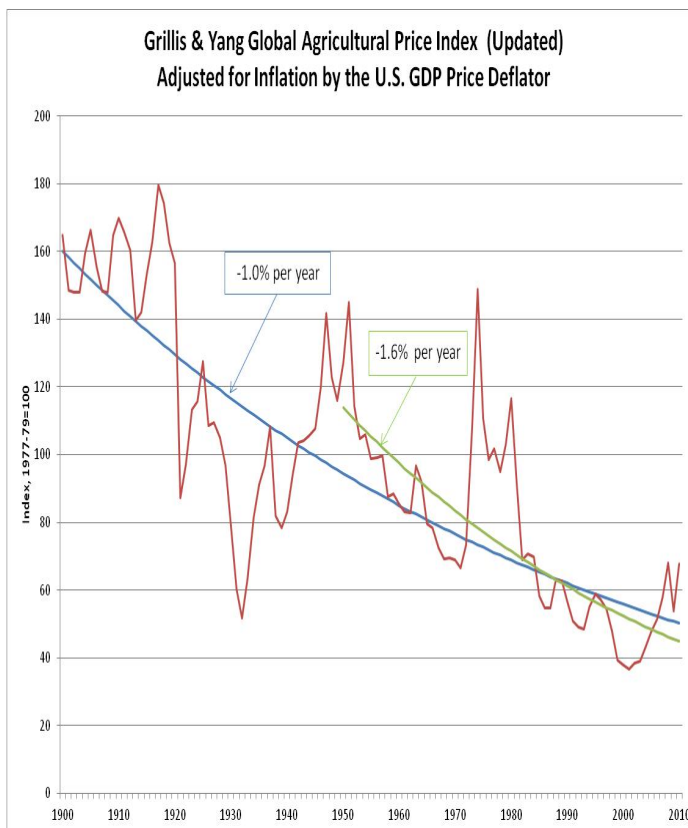


Source: Perday (2011)



Notes: All data are from FAOSTAT. Land is the sum of pasture and harvested area; Agricultural workers are economically active population in agriculture; East Asia include: Japan, Democratic People's Republic of Korea, Republic of Korea, Mongolia; South Asia include: Afghanistan, Bangladesh, Bhutan, Sri Lanka, India, Maldives, Nepal, and Pakistan; Southeast Asia include: Brunei Darussalam, Myanmar, Indonesia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Timor-Leste, Singapore, Thailand, and VietNam.

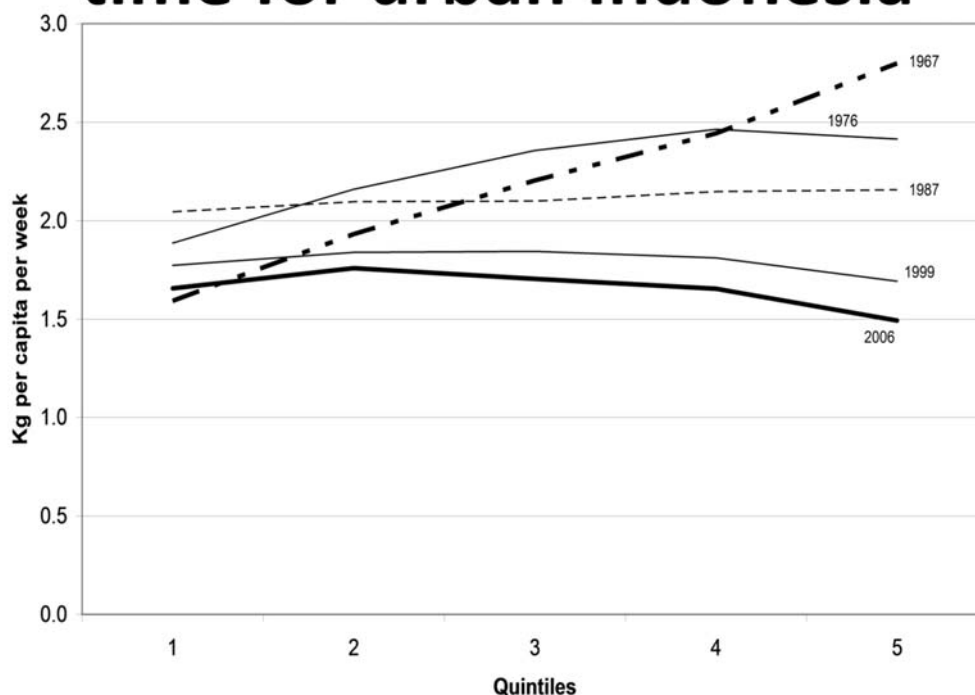
The 20th Century decline in food prices



Three Rice Revolutions

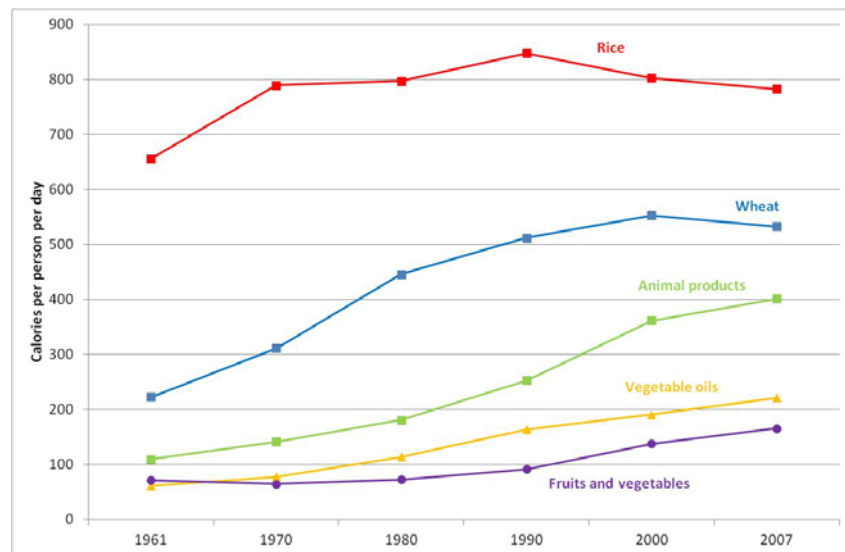
- ... in demand for rice
- ... in supply of rice
- ... in marketing of rice
- Market economies are driven by demand, so start with what is happening to rice demand.

Asia's Future: Engel curves over time for urban Indonesia



Asian diets are diversifying

Source: FAO food balance sheets



Dietary Transformation

Dietary Transformation in Southeast Asia							
	1961	1970	1980	1990	2000	2009	Avg % change/year
Food supply, (kcal/cap/day)--Total	1814	1955	2153	2164	2417	2657	0.80%
Cereals (ex. Beer)	1173	1320	1429	1370	1482	1549	0.58%
Rice	1057	1176	1246	1187	1234	1256	0.36%
Rice kcal as % of total kcal	58.3	60.2	57.9	54.9	51.1	47.3	
Starchy roots	183	131	143	102	91	101	-1.23%
Wheat	30	61	81	67	119	145	8.00%
Starchy Staple Ratio (SSR)	74.8	74.2	73.0	68.0	65.1	62.1	
Food supply, gm/cap/day							
Animal protein	8.3	10.0	10.6	13.3	17.1	22.8	2.13%
Fat	27	28.6	32.8	39.9	46.3	58.8	1.63%
Wheat as % of rice	2.84	5.19	6.5	5.64	9.64	11.54	

The Changing Role of Rice in Food Consumption in Asia

Year	Total Calories	Calories from Rice	Rice as % of Total
1961	1805	656	36.3
1970	2069	790	38.2
1980	2200	797	36.2
1990	2443	848	34.7
2000	2606	803	30.8
2007	2668	783	29.3

Average Annual % Increase/(Decrease)

1961-70	1.53	2.09	0.57
1961-90	1.05	0.89	(0.25)
1970-07	0.69	(0.03)	(0.71)
1990-07	0.52	(0.47)	(1.00)

Source: Data from FAO Food Balance Sheets.

“Calories” are daily per capita energy available.

Implications for the role of rice in Asia’s food security:

Rice is increasingly the food of the poor. This has significant implications for poverty if countries use “high” rice prices as a mechanism to guarantee “macro” food security and a high level of self-sufficiency in rice

Implications (2)

Following the changing patterns of rice consumption, the share of rice in agricultural output and in the overall economy is also falling rapidly.

Share of rice in GDP	Early 1960s	Late 2000s
East Asia	6.8 %	1.0 %
South Asia	8.4	2.7
Southeast Asia	14.5	3.8

Net rice exports from Asia, 000 metric tons

•	
• 1965	223
• 1970	-1117
• 1975	94
• 1980	1947
• 1985	2962
• 1990	3779
• 1995	4894
• 2000	7594
• 2005	11190
• 2009	12071

Modern Supply Chains: What's New?

- “Squeeze costs out of the system”
 - Less waste, but
 - Someone's income
- Non-market vertical coordination
 - What happens to transparency in price formation?
- Provide staple food price stability as a *private* good?

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Modernizing Food Supply Chains: The Impact on Rice Distribution

	Rice Economy (starchy staples)	Non-Rice Commodities (Fruits and vegetables, meat/ dairy, processed foods, wheat)
Farm inputs/ supplies	Smaller area possible Higher yields, stress tolerance Consumer quality	More value/hectare, but what role for small farmers (what “assets” do they need to stay in?)
Farm Production (management and knowledge)	Very knowledge-intensive for good management practices; Access to inputs by farm size	Knowledge intensive; can there be effective extension for new technologies? Role of farm assets
Procurement/ logistics and Wholesalers	Less rural consumption as workers leave; more transporta- tion and storage; greater produc- tion instability with climate change	High transaction costs of dealing with small farmers; issues of quality control and product traceability
Processing and value added	Milling technology How to add value; branding?	Large share of consumer food expenditure is spent in this box
Retail/consumer welfare and health dimensions	Supermarkets as suppliers of rice? Increased price stability through private actions? Problems of access by the poor?	Modern supply chains are funneling consumer demand back up the system. The food system is less supply driven

Challenges Ahead...

- Implications for food security of changing value chains
 - Increasing role of large-scale private sector in farming, processing and retail
 - Understanding the rice marketing system: Micro data from farm gate to retail
 - Feed inputs and livestock/aquaculture systems
 - Food quality, safety and traceability: Whose responsibility?

Challenges (2)...

- Rapidly falling demand for rice not far off...
- Continued push to expand rice production...
- Fear of the rice market in major importing countries, with accelerated self-sufficiency campaigns
- A thin and unstable rice market, with lower prices for “commodity” rice

Lessons for the Region

- Even when successful, all three transformations—**structural**, **agricultural** and **dietary**, can be painful for participants
- And yet they are the ONLY sustainable pathway out of poverty
- Good government policies can speed the transitions and mitigate the pain (mind the GAP)
- Growth with equity and stability is KEY

Conclusions

- What we have not talked about (but should)...
 - 1. Impact of climate change
 - 2. Will trade agreements change the playing field? Philippines & Indonesia
 - 3. Will rice escape the bio-fuel connection?
If not, what will drive a connection between rice and petroleum? Wheat, corn, financial markets?