

Integrating China's Rice Economy into Global Market: Policies, Distortions to Incentive and Trade Prospects

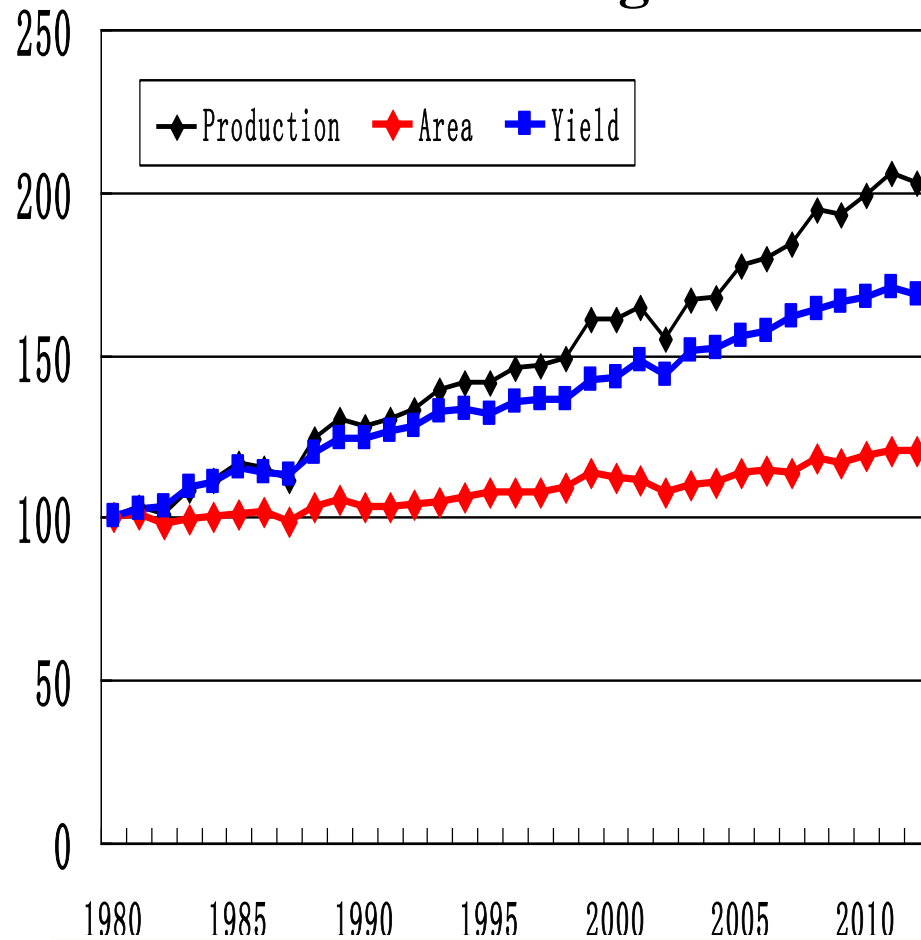
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Outline of presentation

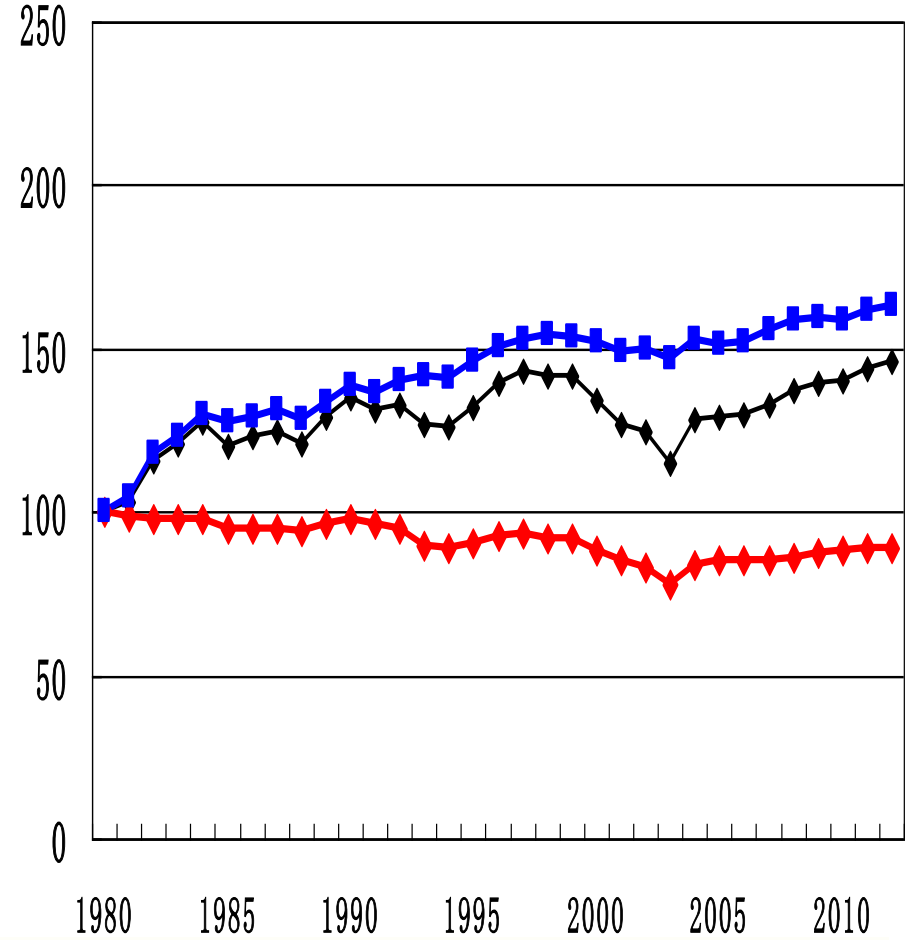
- **Overview of China's rice economy**
- **Rice marketing reform (domestic and international) and distortions**
- **Prospects of national policy, food security and rice trade in the future**
- **Concluding remarks**

Rice production, area and yield, 1980-2012 (1980=100)

World excluding China



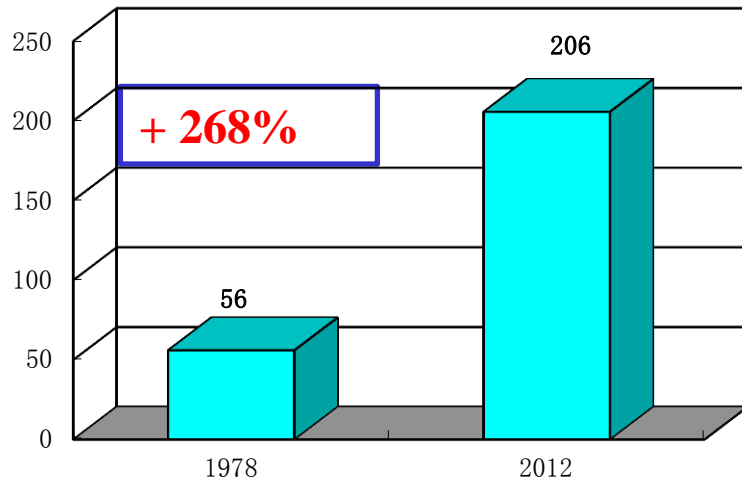
China



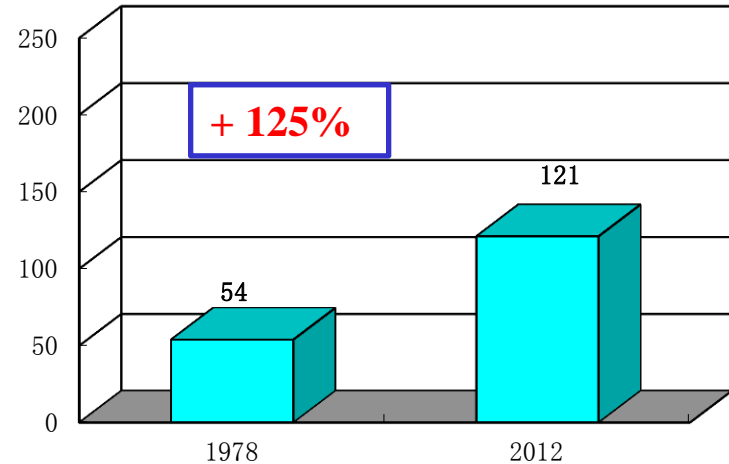
Compared with the rest of world rice production, there are significant differences in rice area and sources of growth

Production of rice, wheat and maize in 1978 and 2012 (million tons)

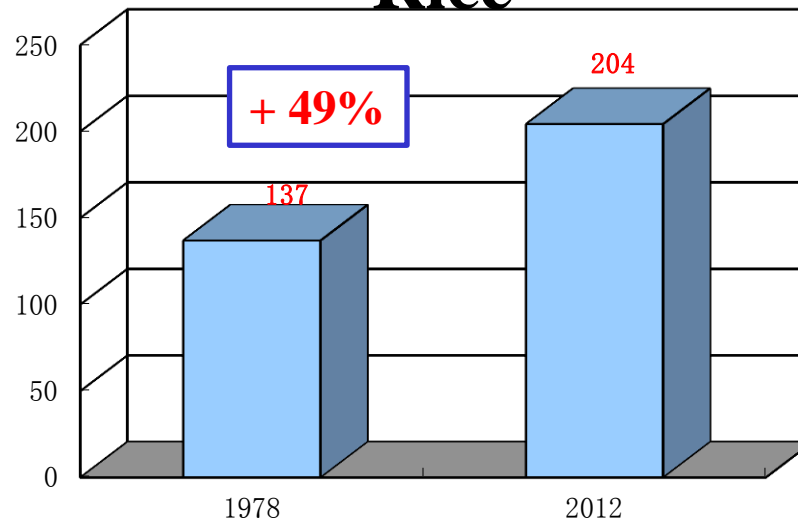
Maize



Wheat

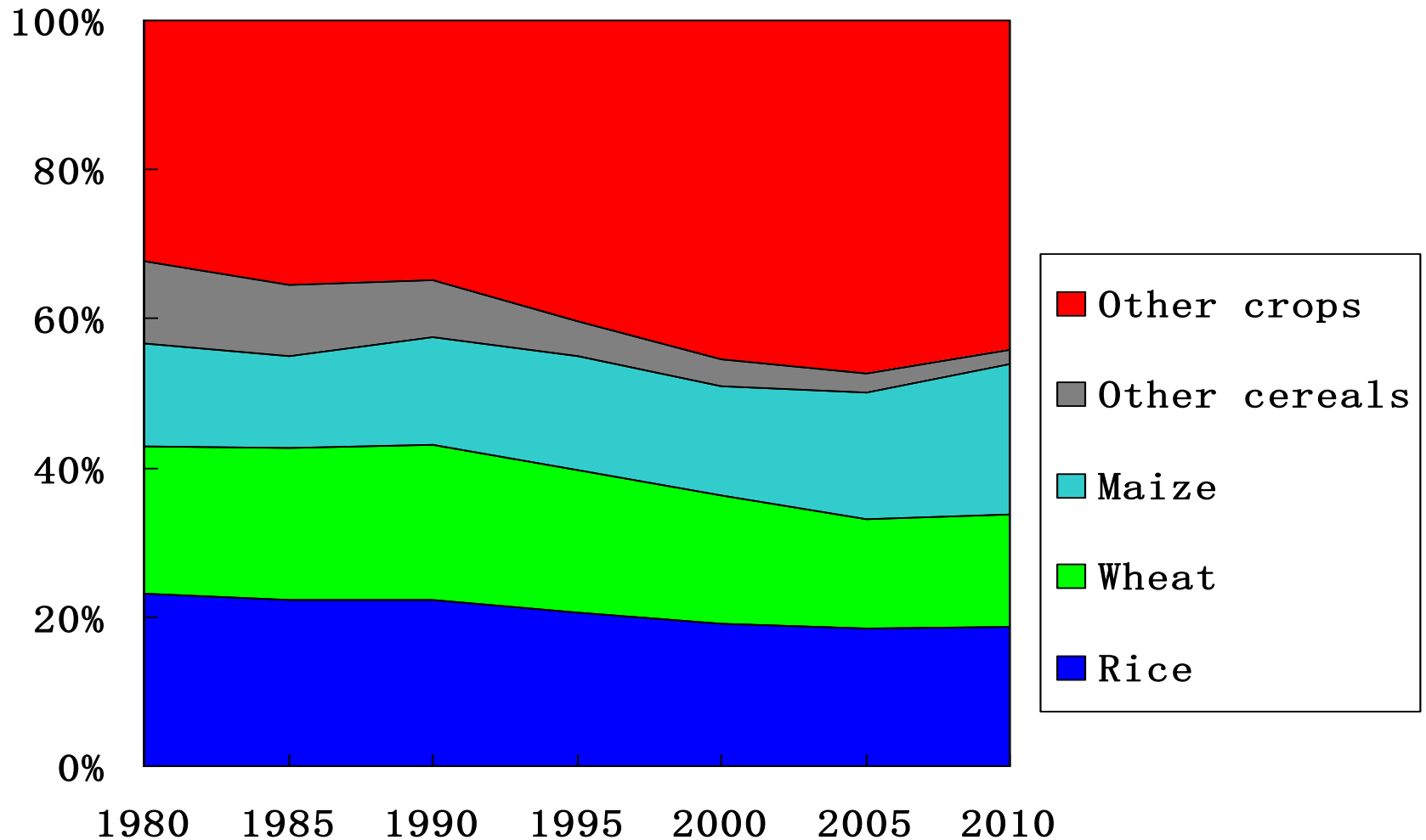


Rice

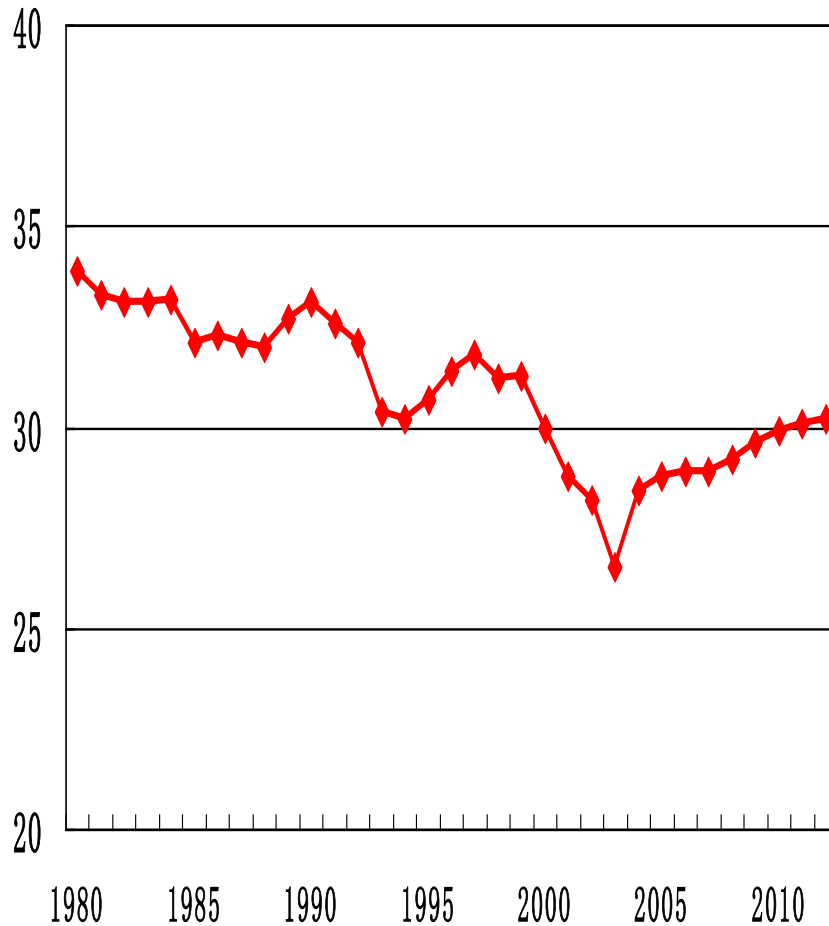


Shares of crop areas, 1980-2010 (%)

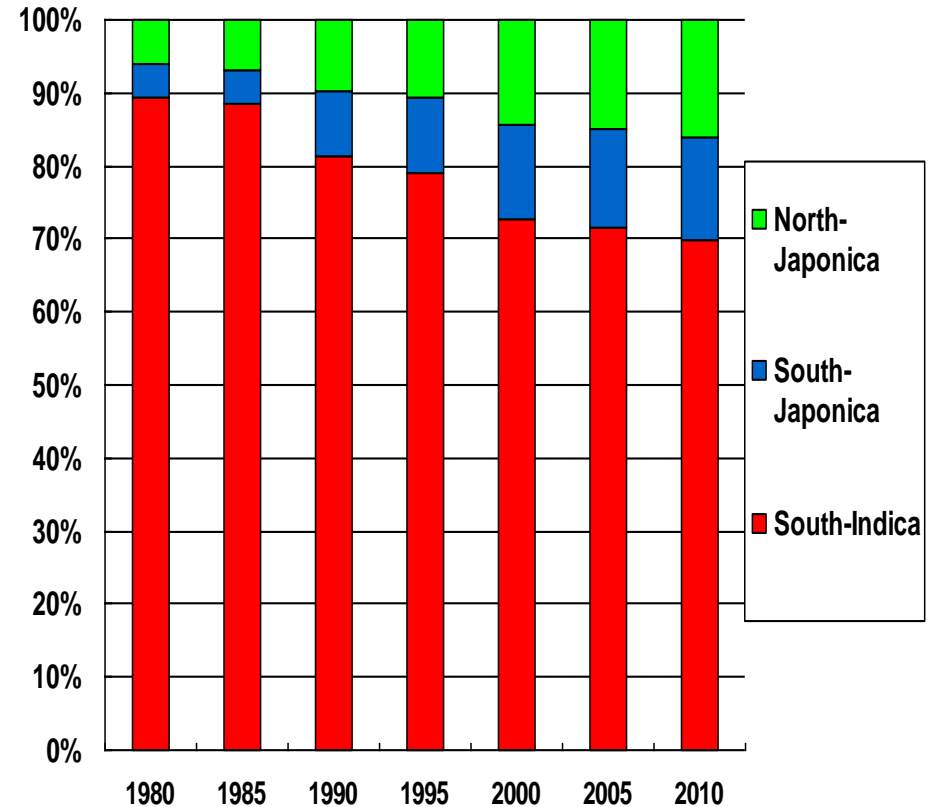
Shifting from food grain (rice/wheat) to feed and high-value crops, particular horticulture



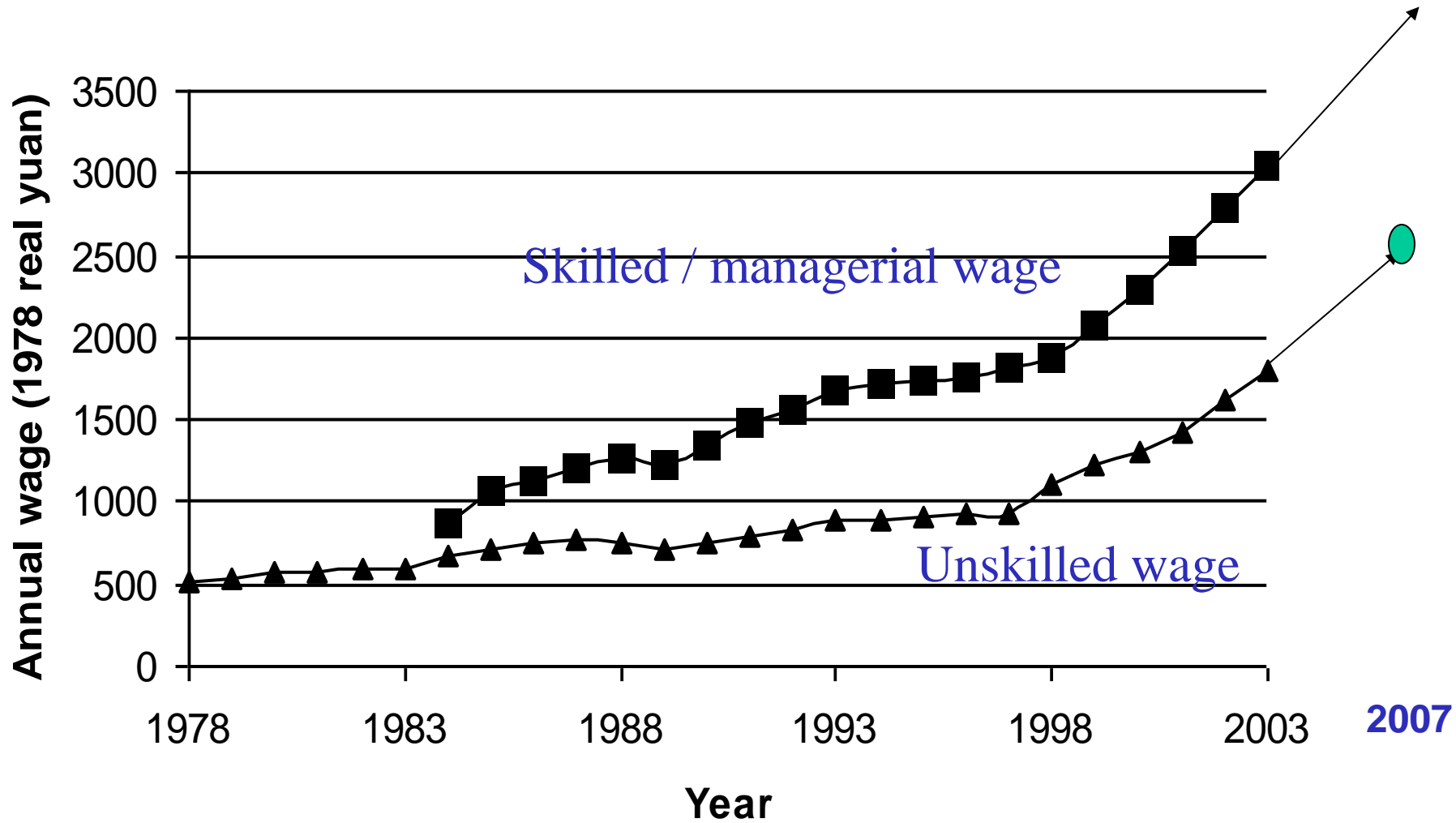
Rice area in China, 1980-2010 (million hectares)



While total area declined, japonica rice area has been expanding



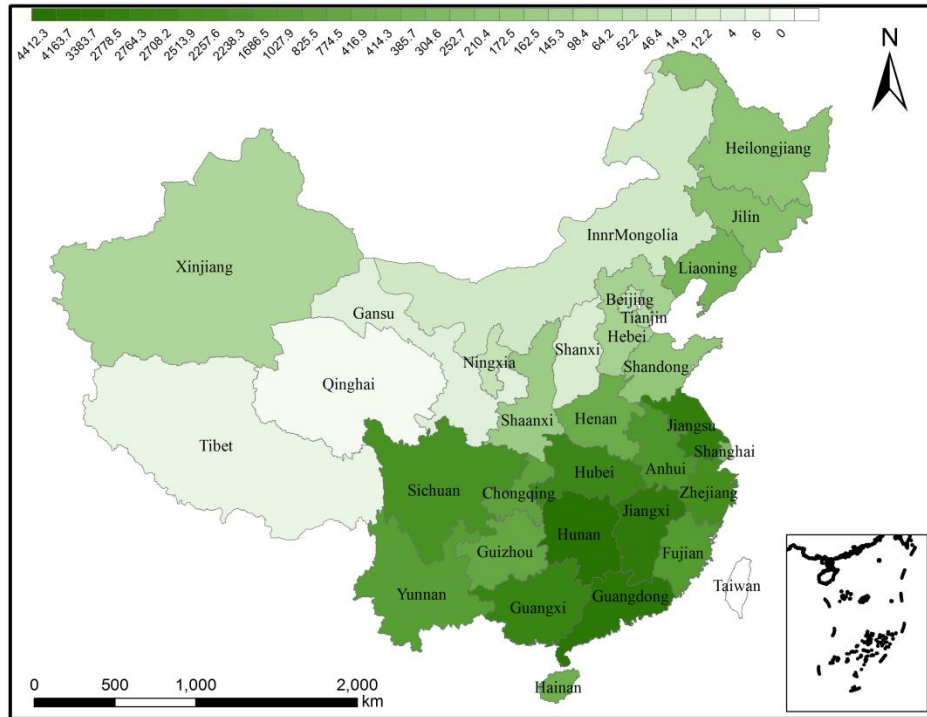
Against overall falling trend of rice area, japonica rice has been rising



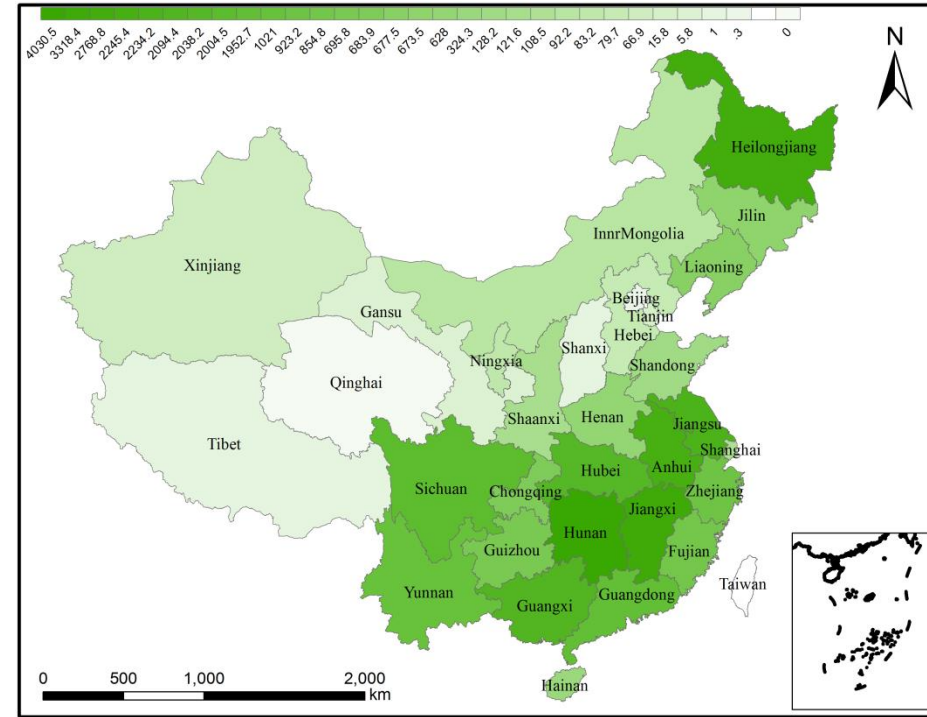
Rising wage of un-skilled labor since early 2000s: affecting small rice farm

Rice area distribution across provinces

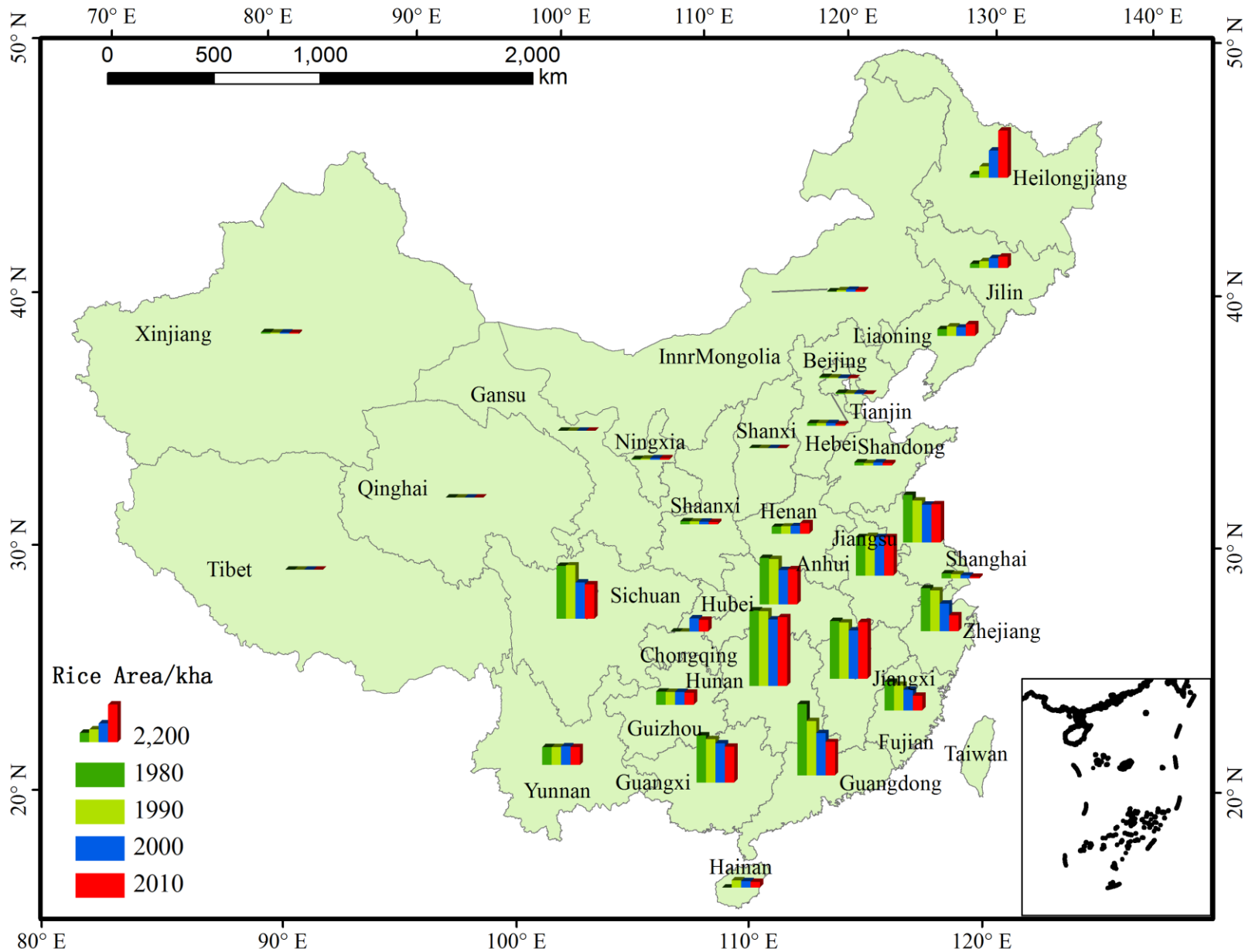
1980



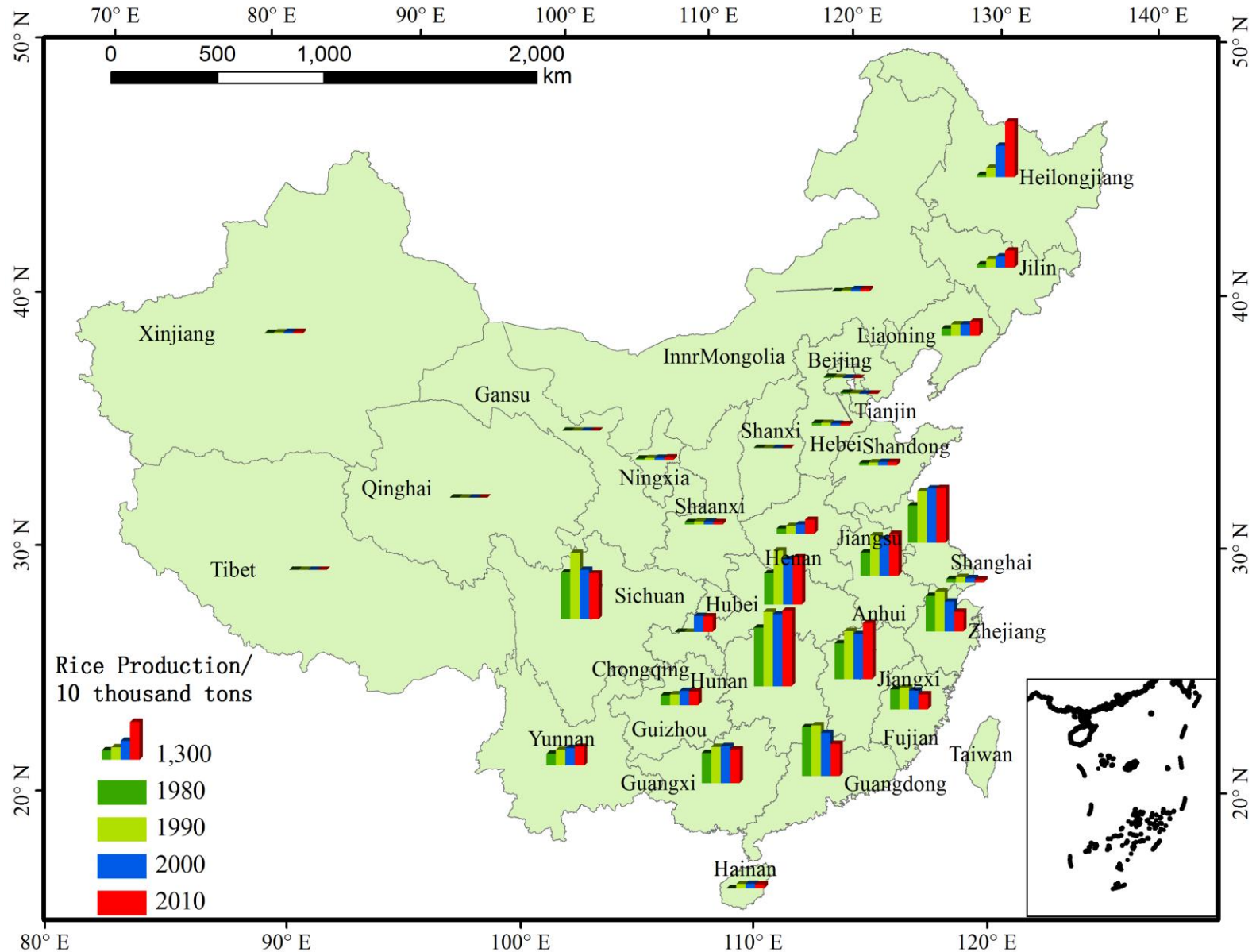
2010



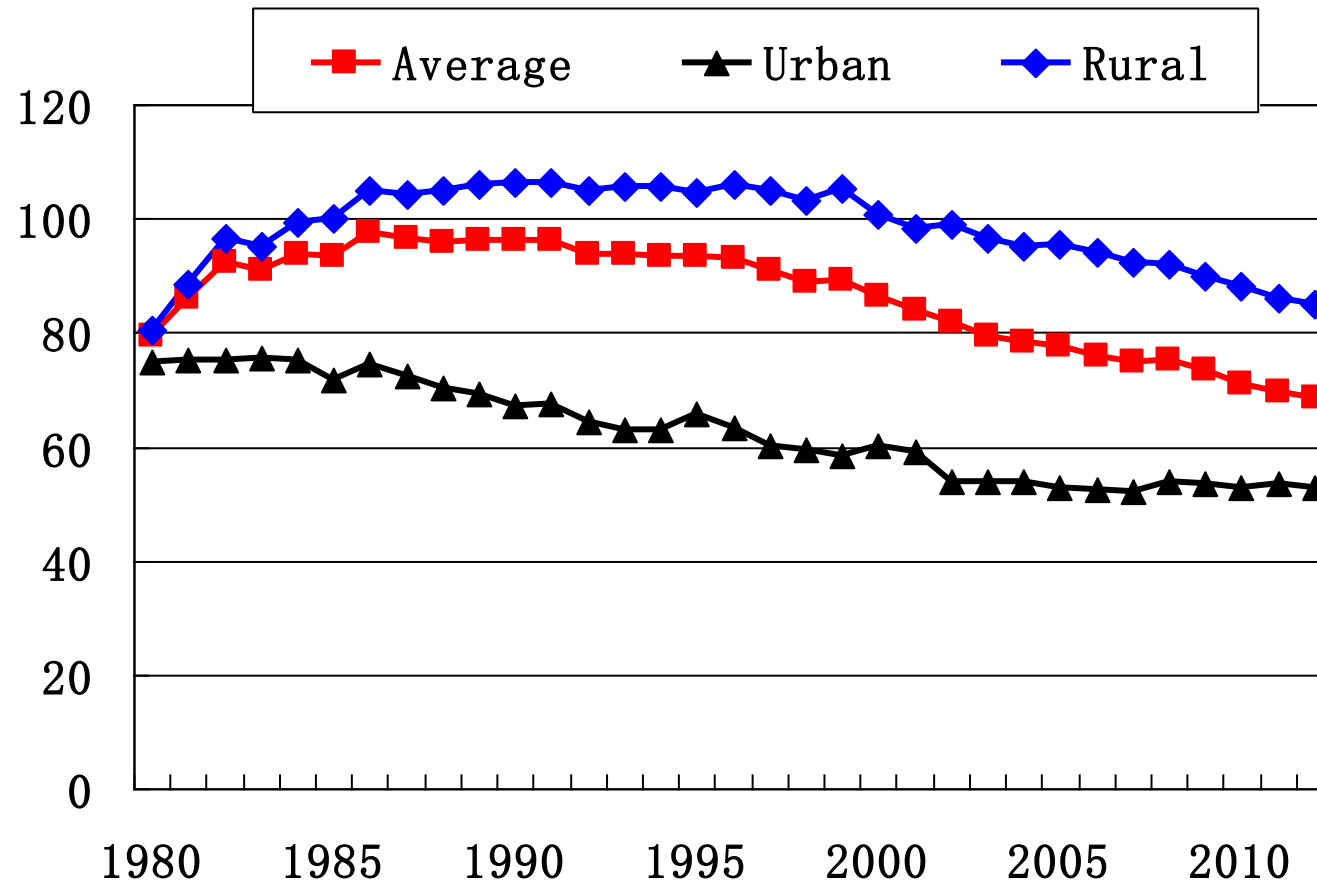
Rice area in 1980, 1990, 2000 and 2010



Rice production in 1980, 1990, 2000 and 2010

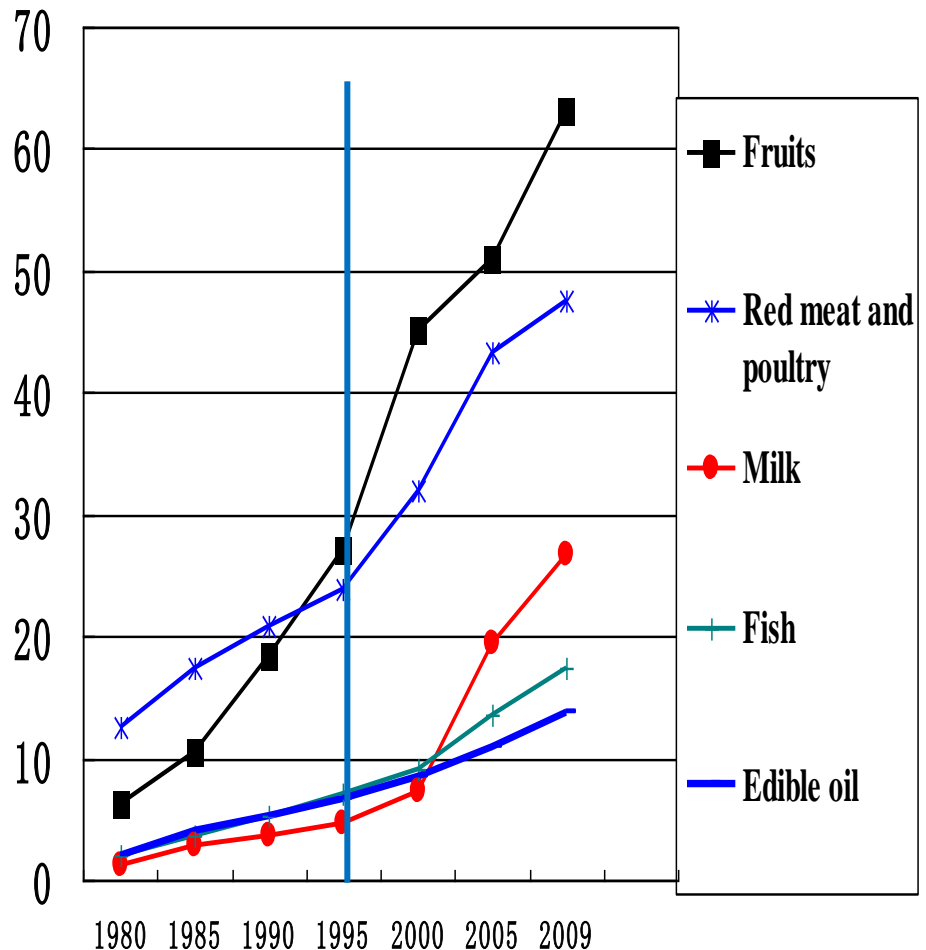
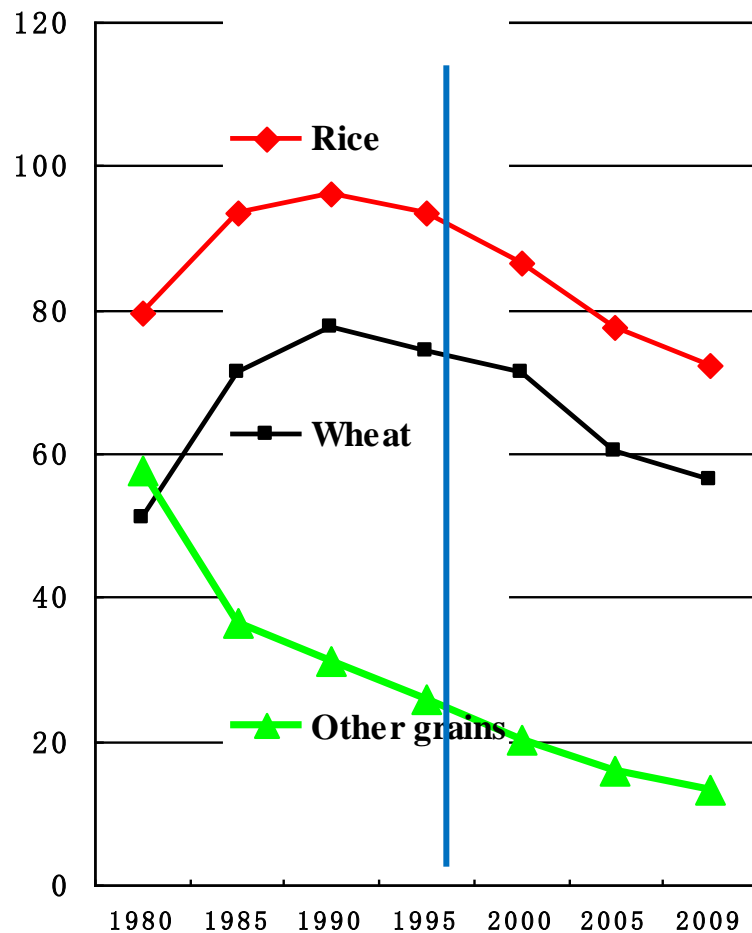


Per capita rice food consumption in China (kg)

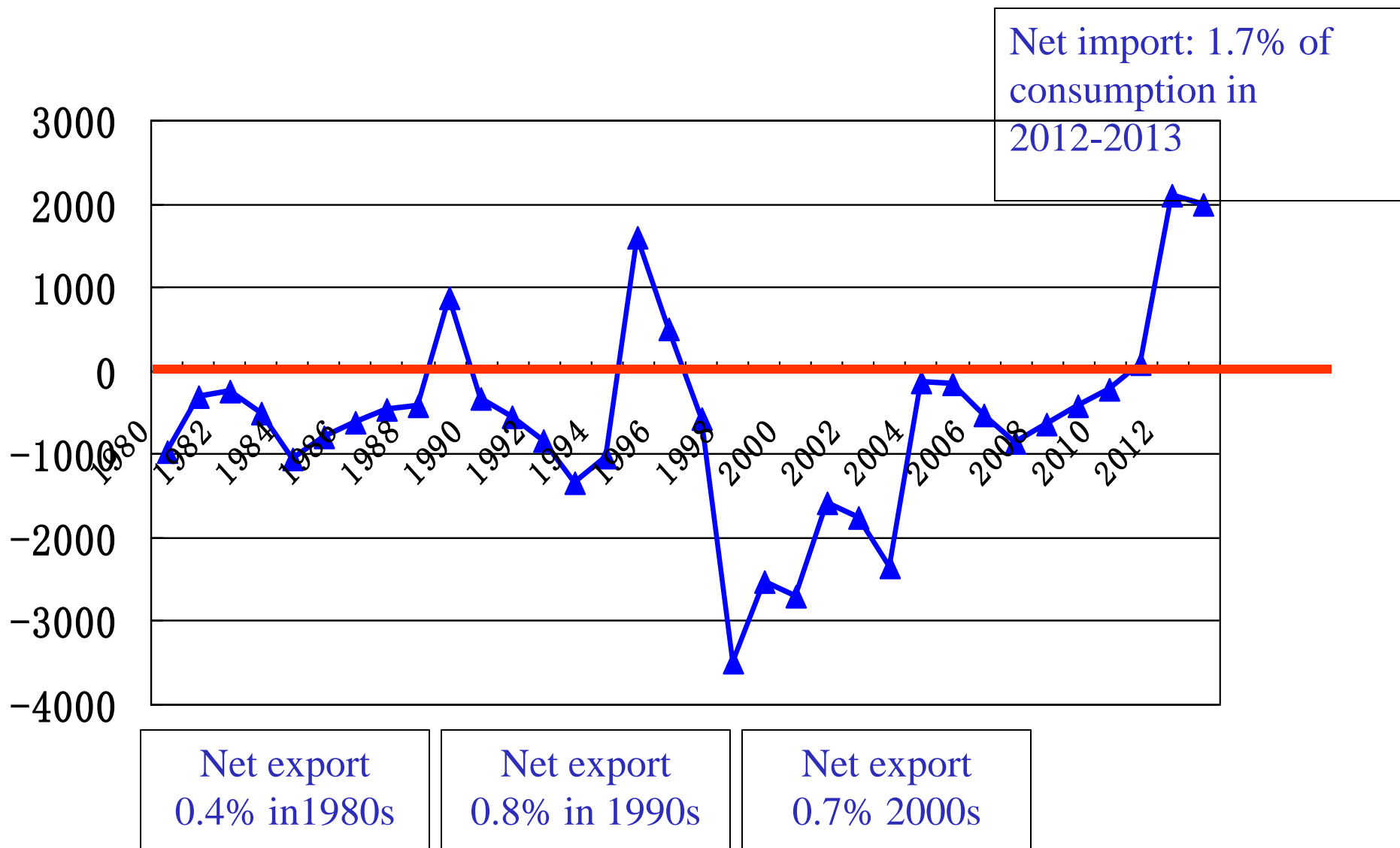


Accompanied the rising income has been fall in food grain but rise in other food consumption since mid-1990s

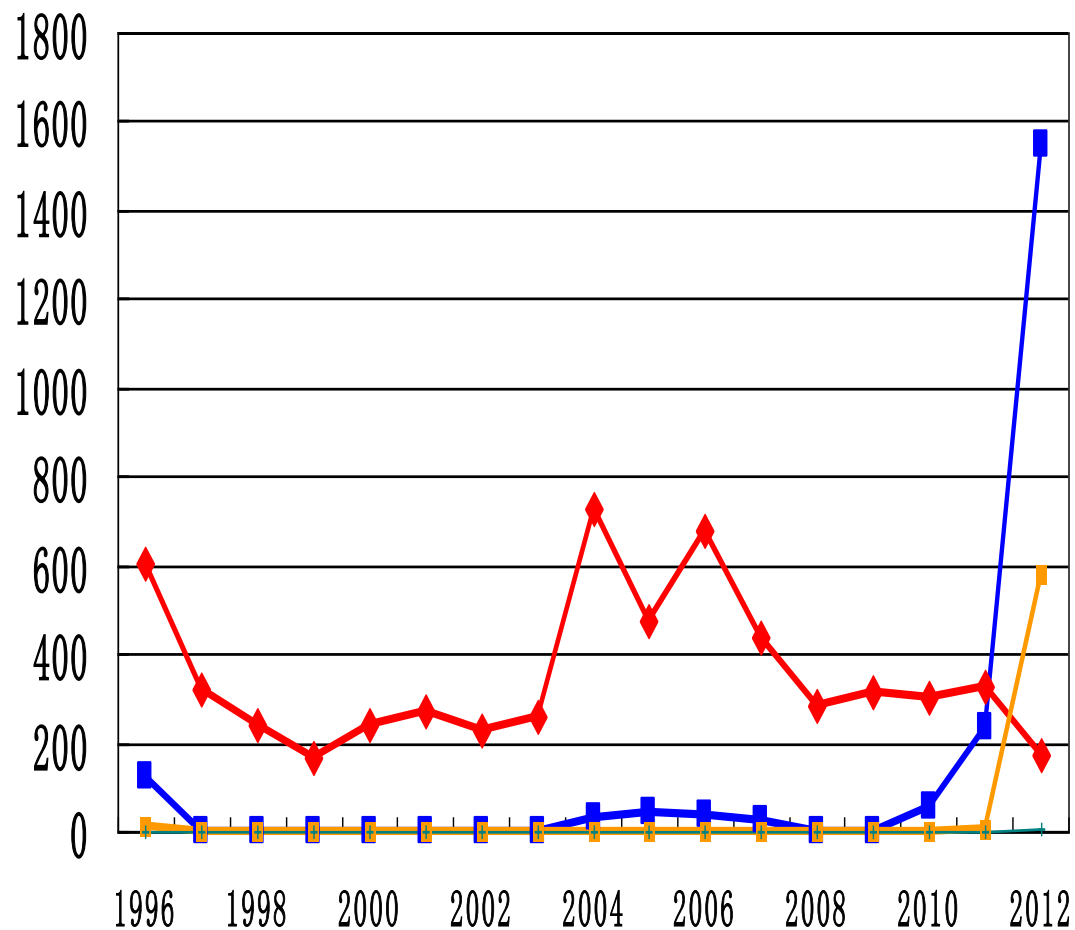
Per capita food consumption (kg/person)



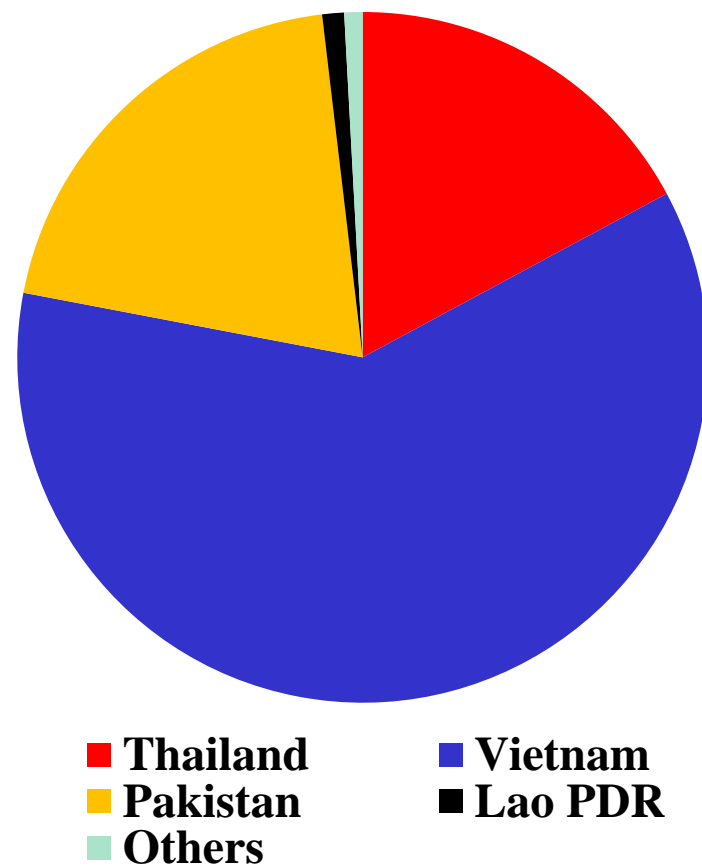
Rice net import (1000 tons), 1980-2013



China rice import (1000 tons), 1996-2012



Sources (%) of imports in 2011-2012



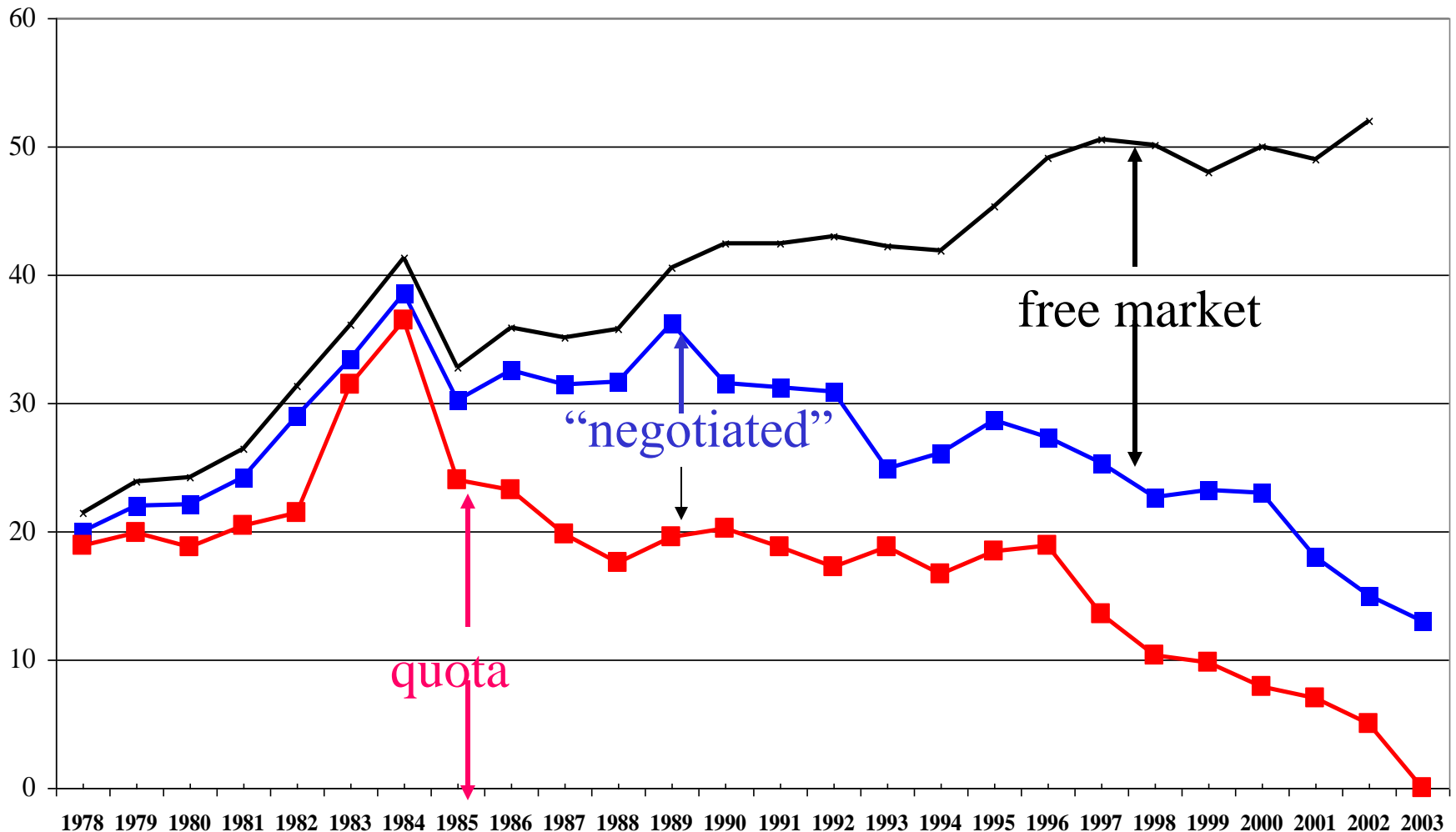
Summary of key points

- There has been **falling per capita demand** for rice due to income growth, urbanization and consumption pattern changes;
- While technology continued to push productivity growth, **labor and land** have been gradually shifting away from rice sector;
- There has been significantly spatial shift in rice production and moving from indica to japonic rice;
- High yield is necessary, but far from sufficient, **rice quality and input (labor/land/water) savings** are essential.

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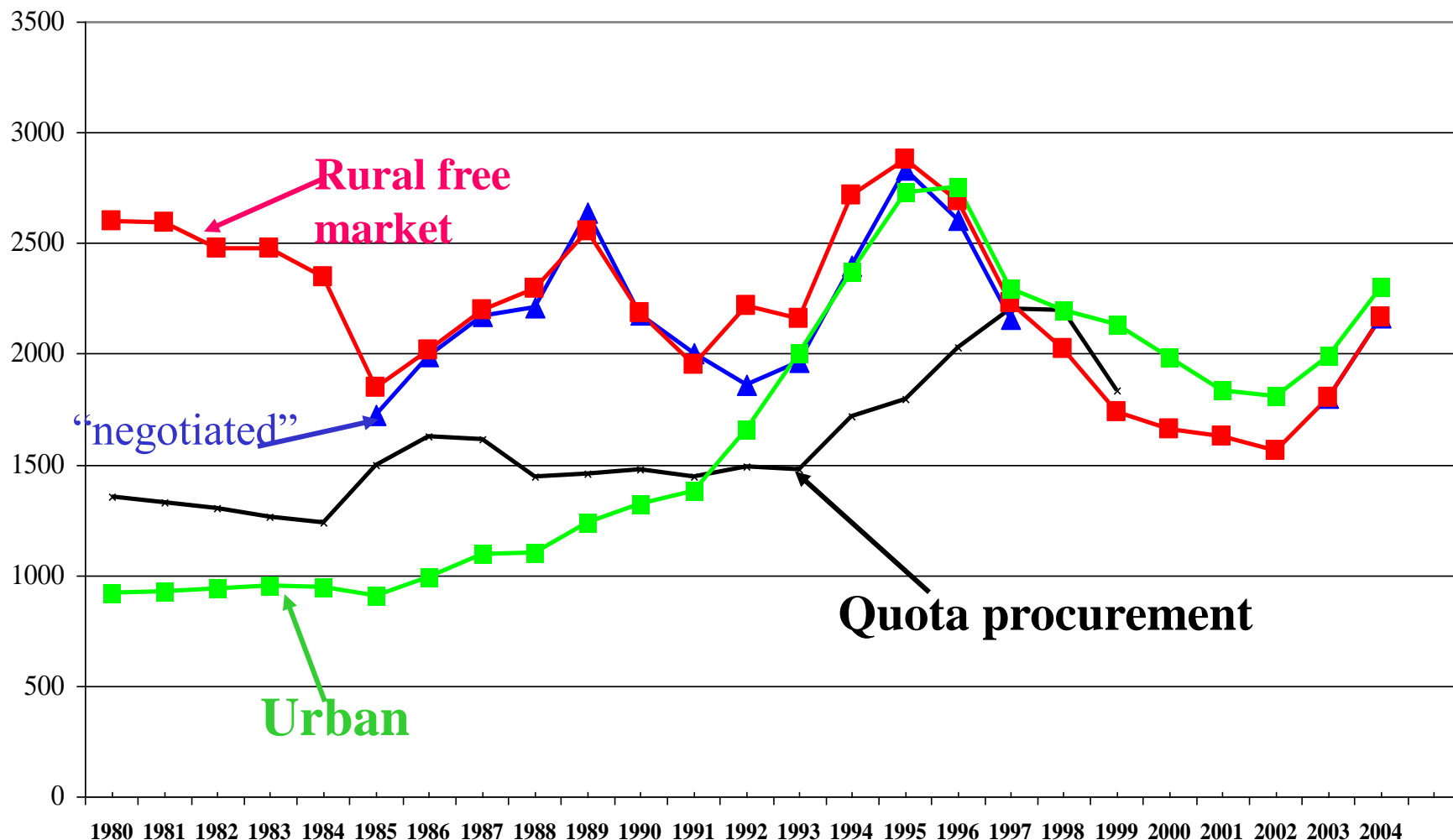
Government rice procurement and free market *SALES* (million tons)



Note: total state procurement = quota + “negotiated”

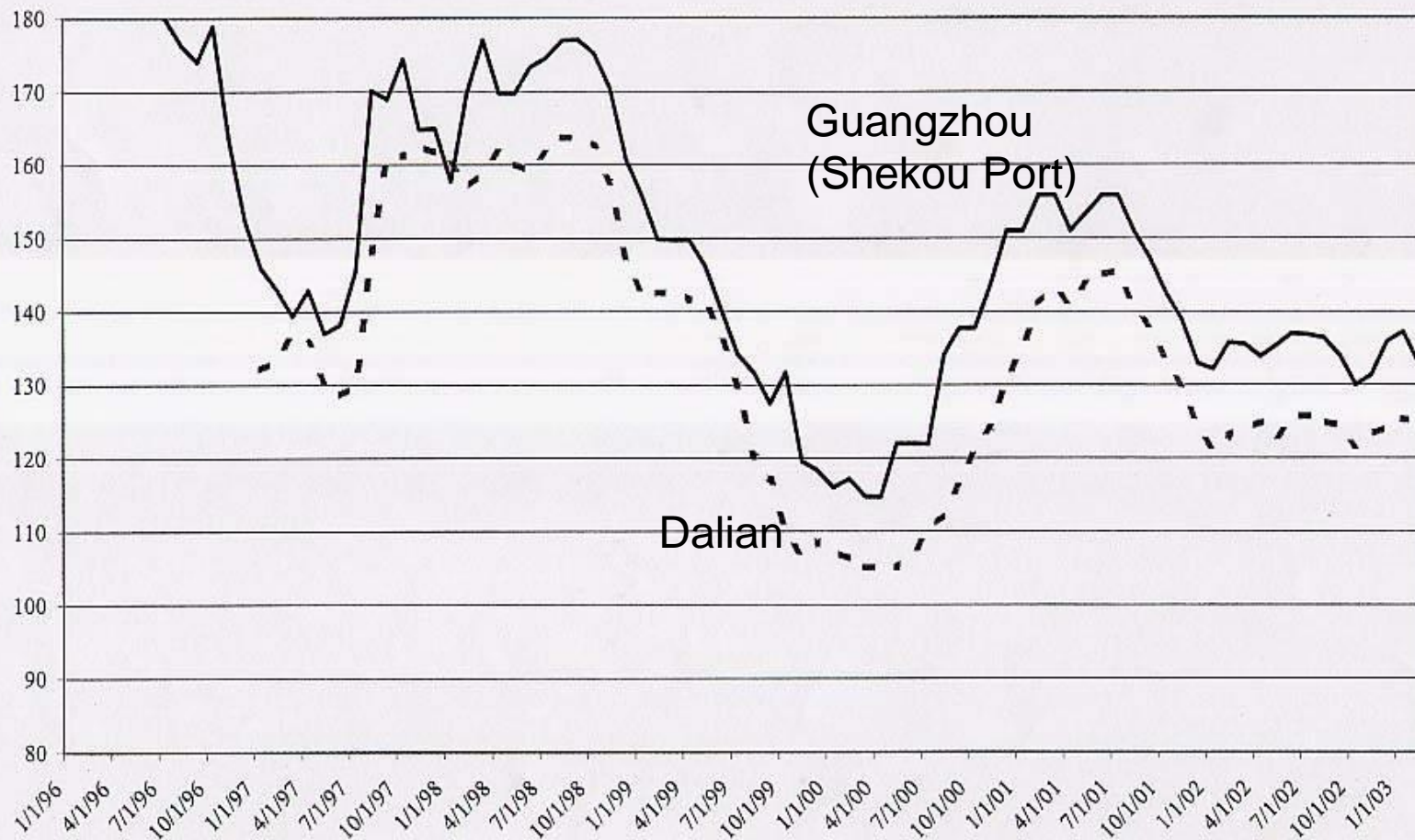
In recent years, China has started to subsidize rice production

Government rice procurement and free market PRICES (yuan/tons at 2004 prices)



Guangdon V.S. Dalian

--- Dalian- at
storage(\$/mt)
— Guangdong(\$)



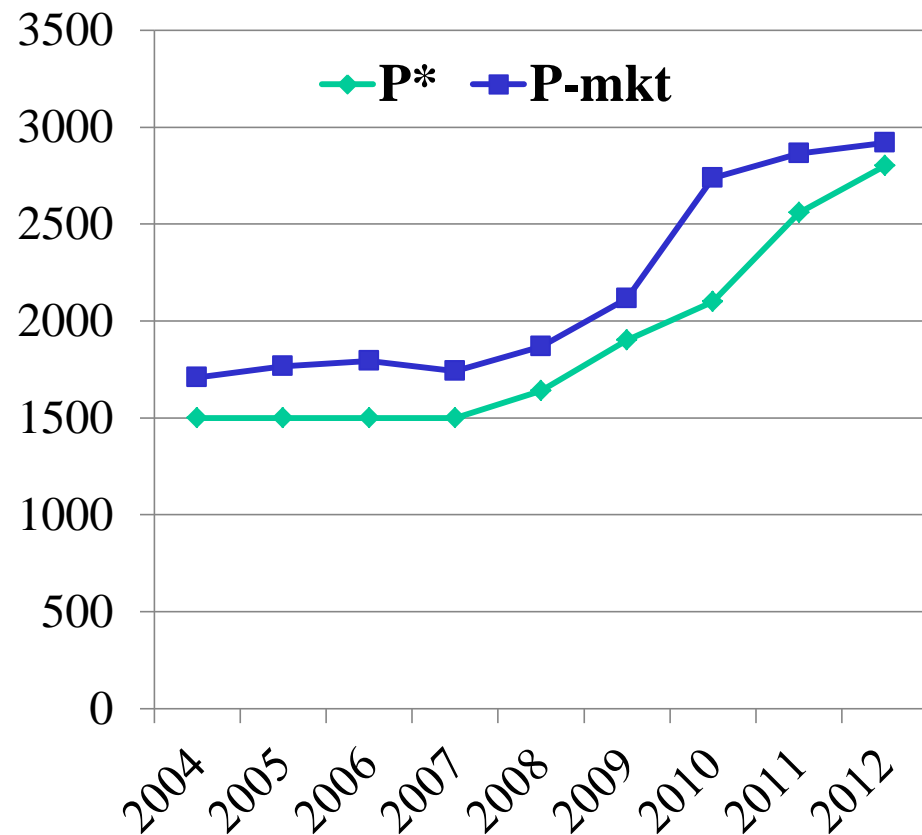
Integration in China's Markets (percent of market pairs that have integrated price series)

	1991-92	1997-00	2001-2003
Corn	46	93	100
Rice	42	85	95

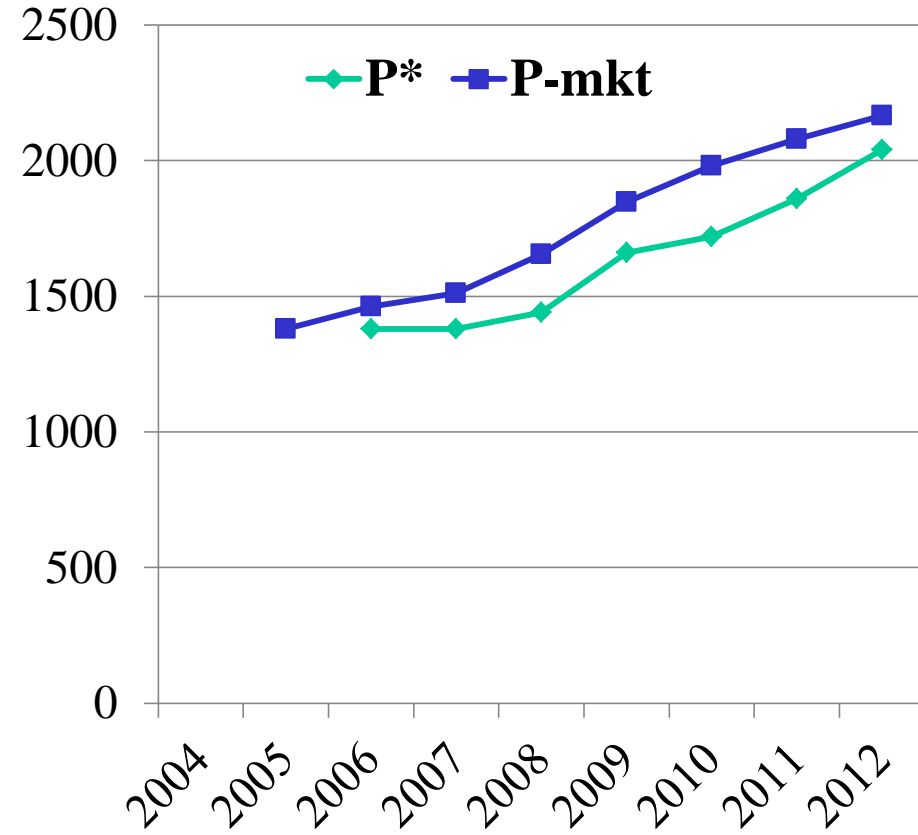
Market integration → explain part of regional growth patterns in rice production and consumption

Minimum Price Policy: Protection prices (P^*) have been lower than market price ($P\text{-mkt}$)

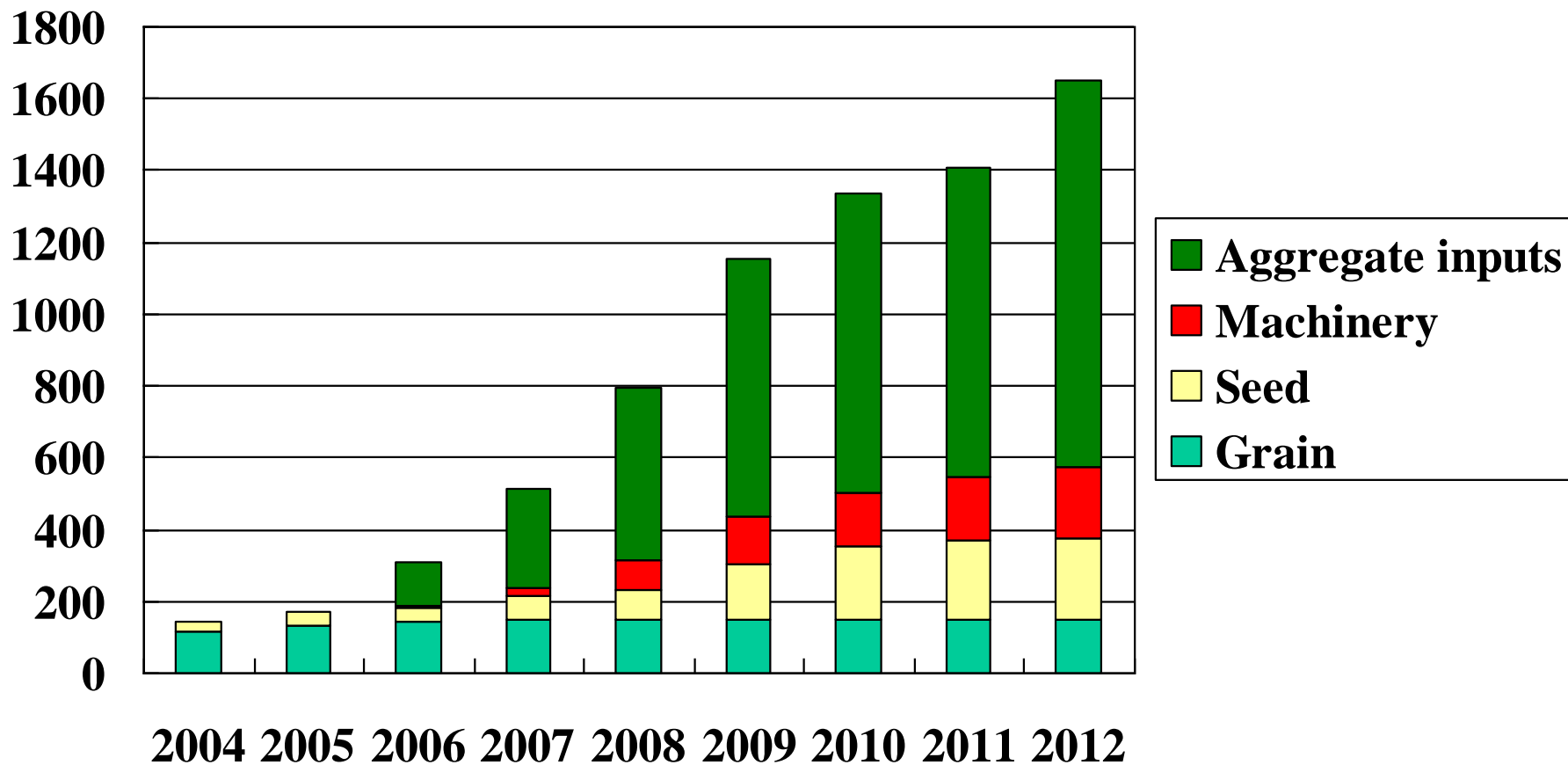
Rice



Wheat



Agricultural subsidies (100 million yuan)



Total subsidy in 2012 was 164.3 billion yuan (26.1 billion US\$), about 3.13% of agricultural GDP. But most are decoupled...

External Economy

Trade Policies

1980s

- No real system of tariffs
- All major commodities dominated by State Trading Companies
 - imported / exported according to “the plan”

1990s

- Develop system of tariffs ... allowed trading by non-state traders in horticulture, animal and other minor products; more recently, in soybeans, rice, maize and wheat ... although subject to government permission (at times) ...

2000s: rice – TRQ system

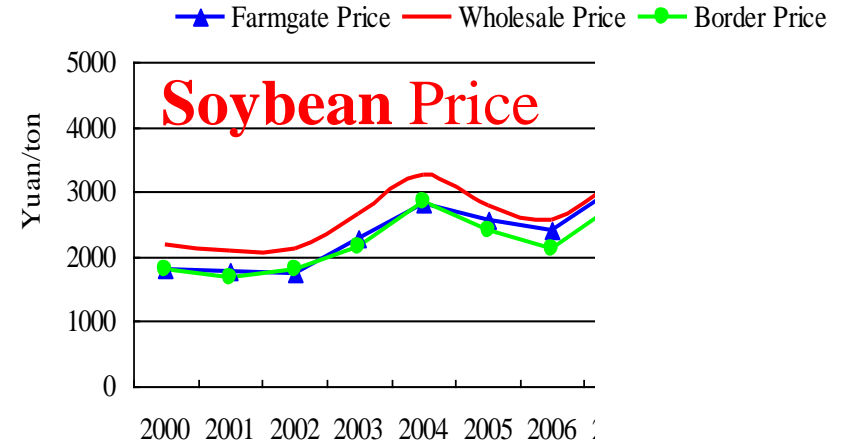
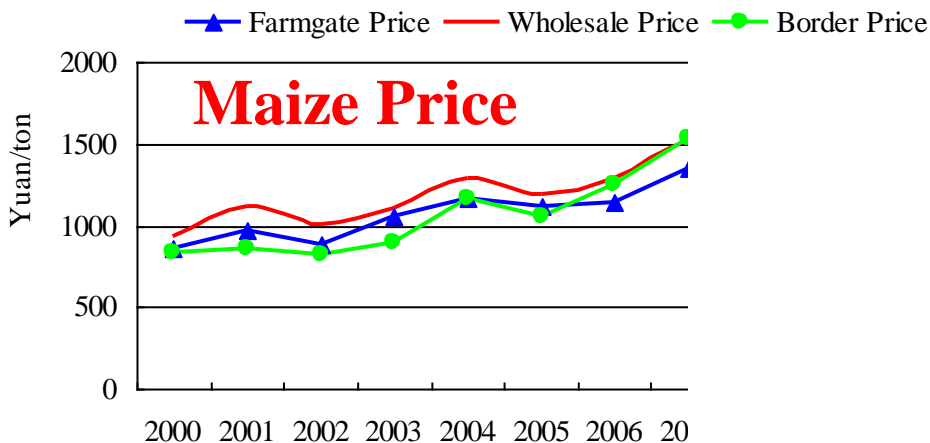
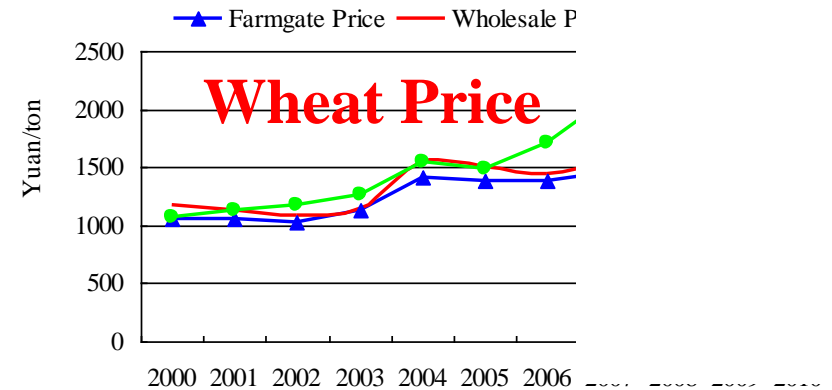
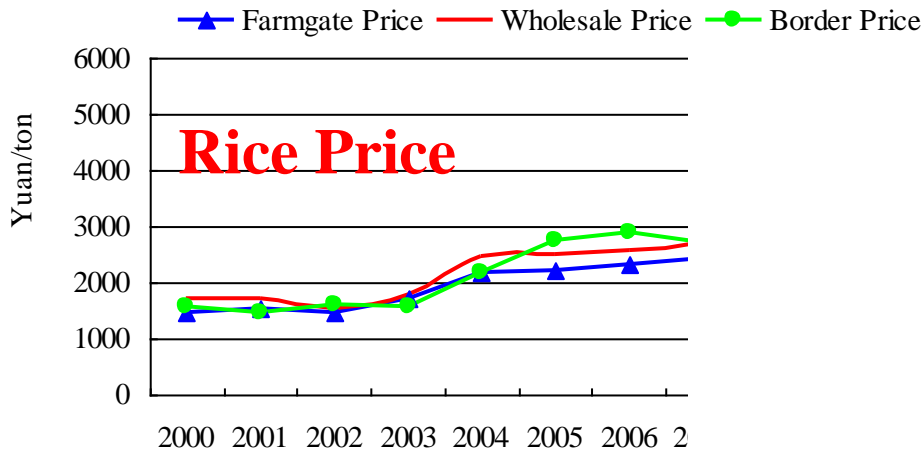
WTO commitments:

China's agriculture:

	TRQ: 2002 (mmt)	TRQ: 2004/5 (mmt)	Out-of- quota tariff (%) in 2004	Imports in 1980s-90s (mmt)
Wheat	8.45	9.30	65	10
Maize	5.70	7.20	65	0.5
Rice	3.76	5.30	65	0.5
Sugar	1.76	1.94	38	1.5
Cotton	0.82	0.89	50	0.7
Wool	0.26	0.29	38	0.25

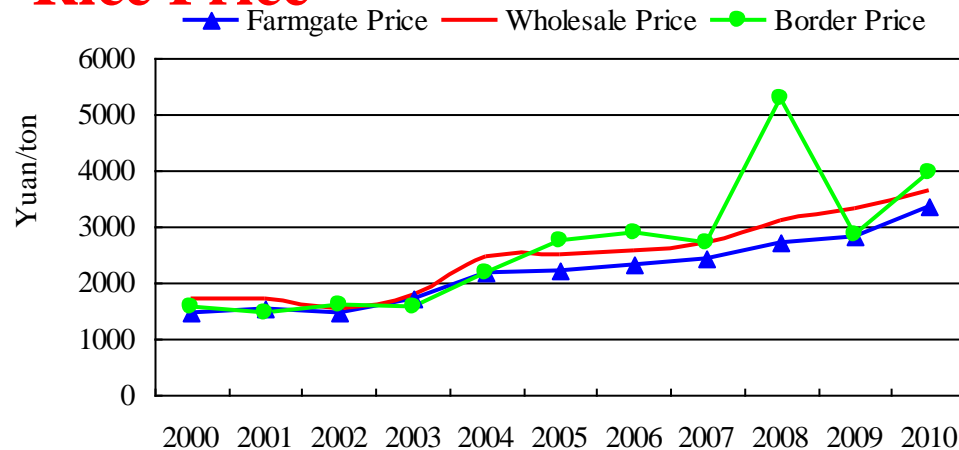
Price changes in international market could be easily transmitted into domestic market

Trends of prices in China and International Market (at China's boarder) in 2000-2006

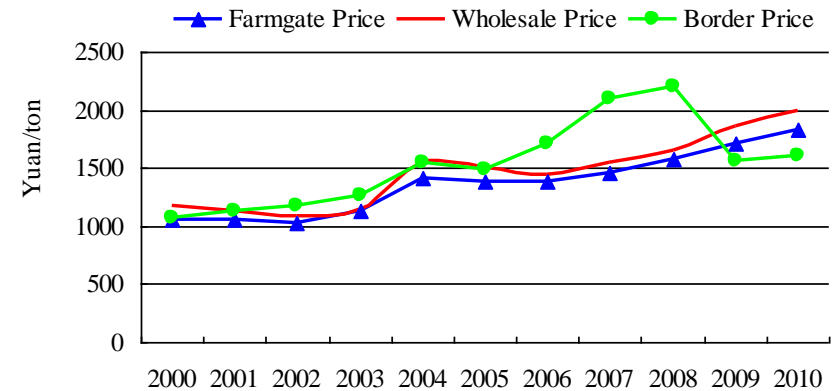


Avoiding transmission of completely liberalized products (e.g., soybean) from international to domestic markets is not possible during global food crisis in 2007-2008

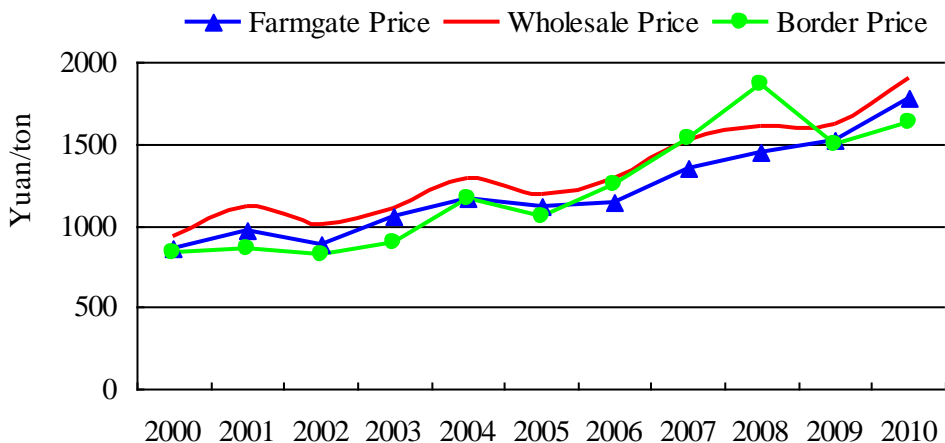
Rice Price



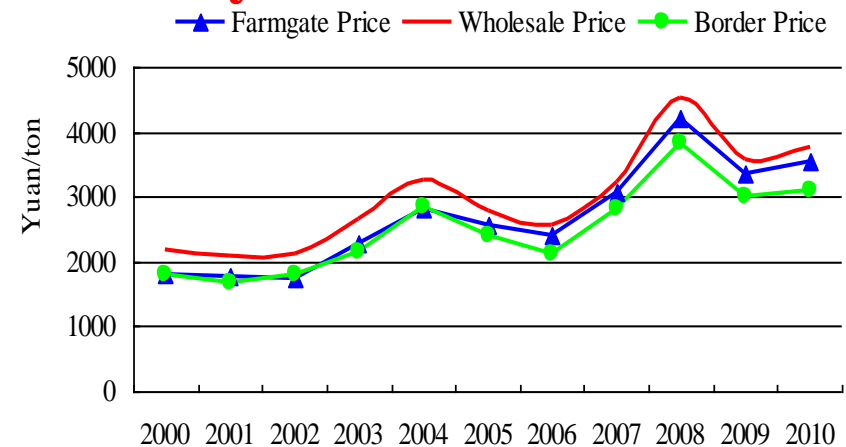
Wheat Price



Maize Price



Soybean Price



Measuring distortions at border: How to measure protection?

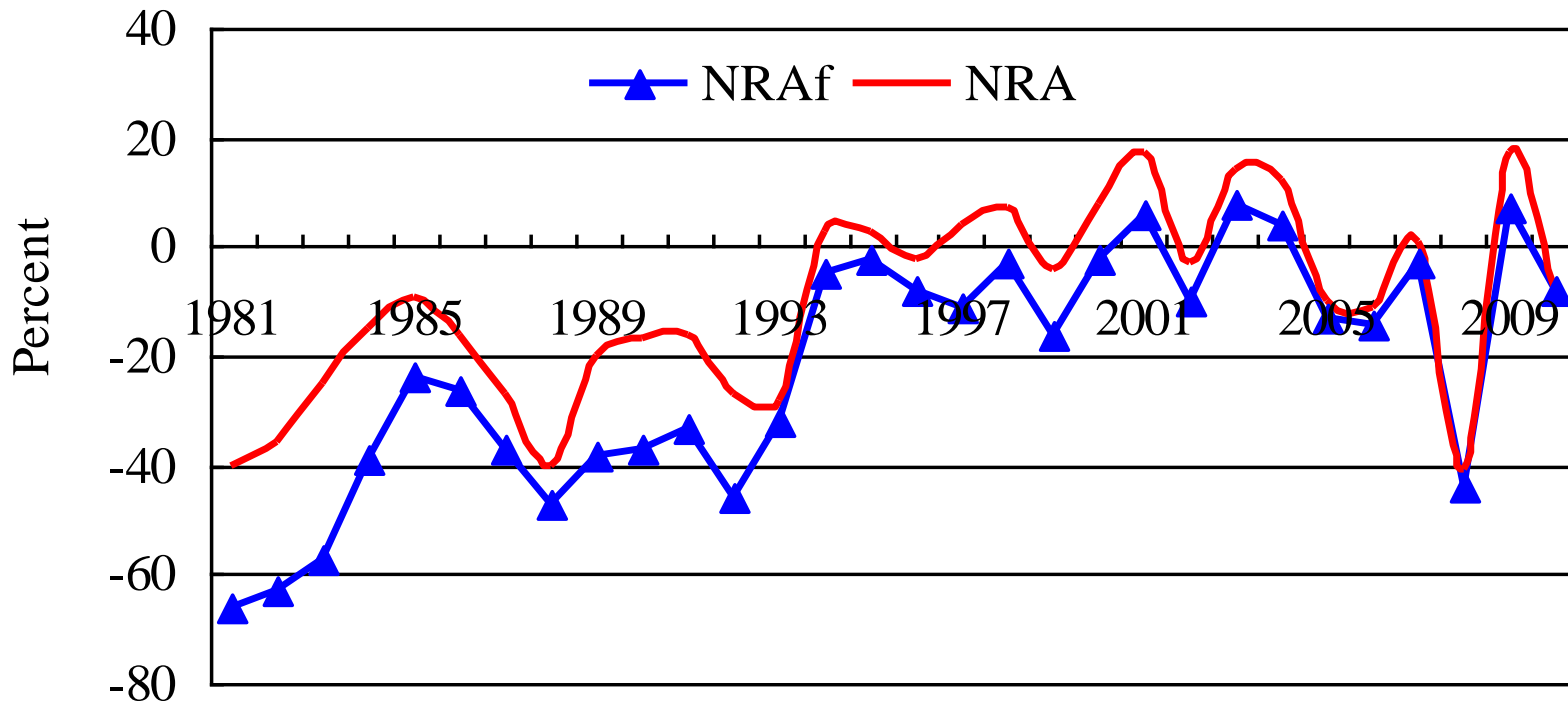
- **Trade measures have been very complex**
 - Tariffs
 - Quotas
 - Licenses
 - State Trading
 - Different regimes for imports and exports
 - Exchange rate distortions

Approach used

- **Nominal Rates of Assistance (NRAs) to farmers:**
 - **NRA:** distortion at border
 - **NRAf:** considers border and domestic mkt distortions
- **Measured at equilibrium exchange rate**

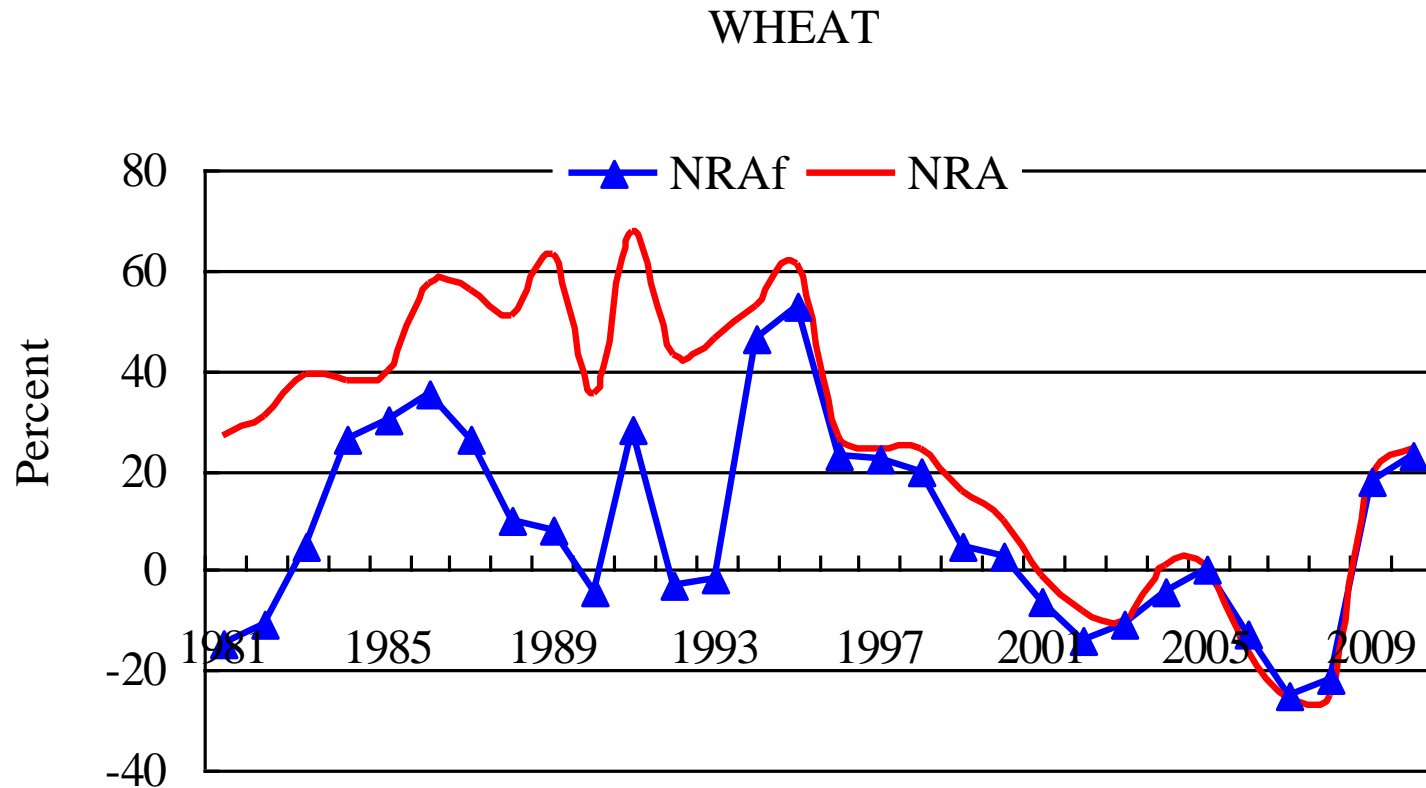
NRAs for rice in China, 1981-2010

RICE



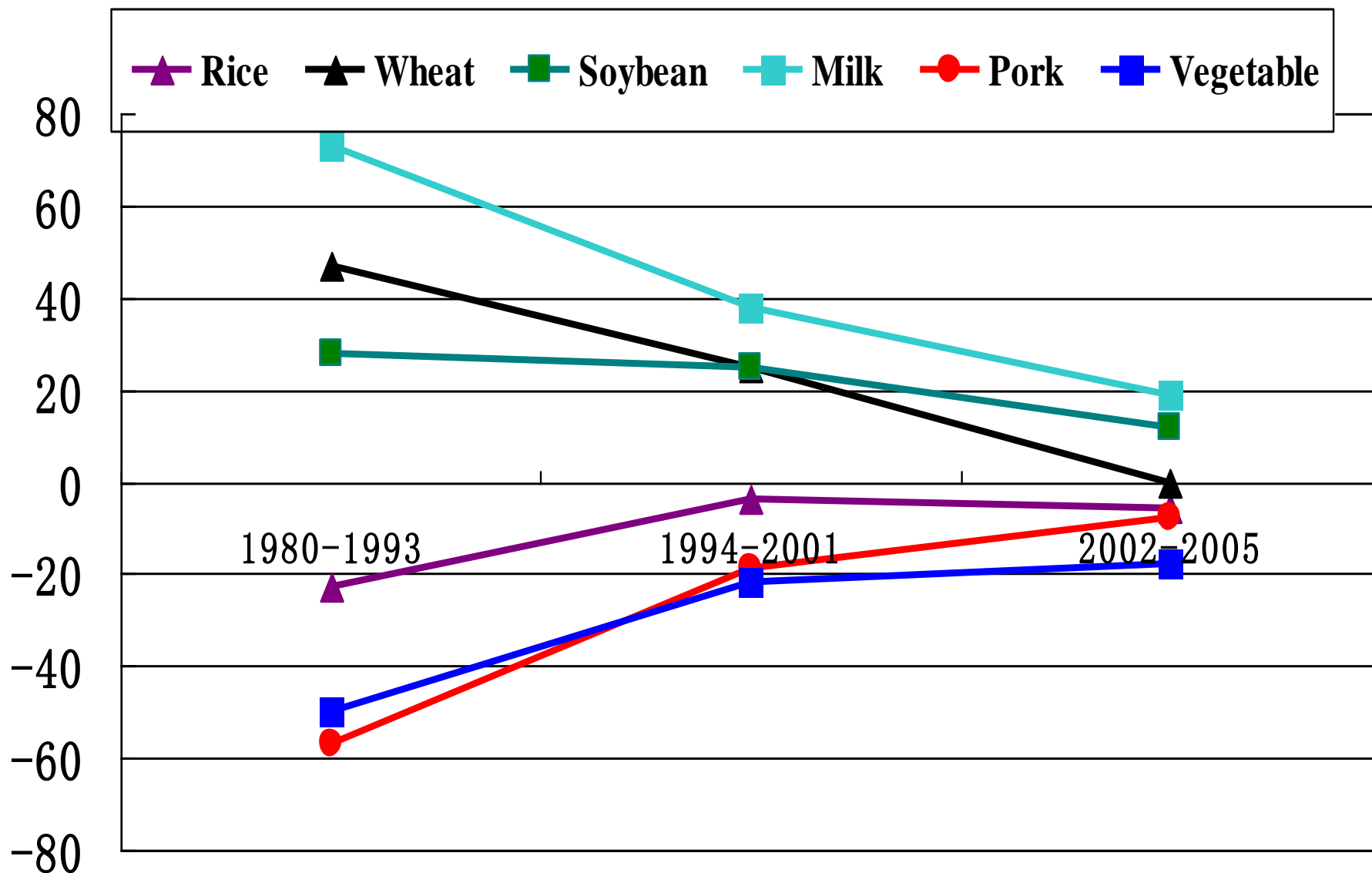
Rice had been highly dis-protected before middle 1990s due to domestic and trade policy, tariff/NTB imposed on Chinese rice in the rest of world. During global food crisis, NRAs fell significantly.

NRAs for wheat in China, 1981-2010



Importable such as wheat was highly protected until recently. But their prices have been moving to world prices since middle 1990s except recent years.

Nominal protection rates (%) in China, 1980-2005



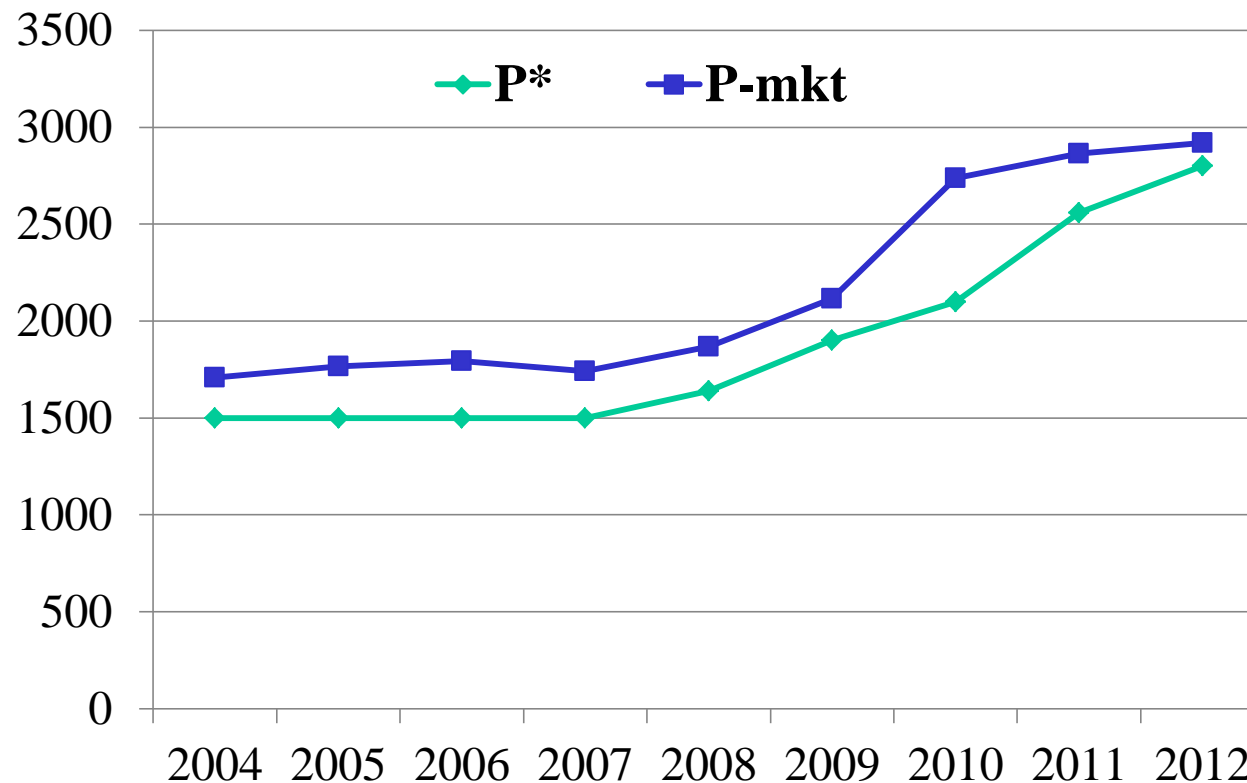
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Major Policies and Food Security Goals

- **Invest in water:**
 - The largest component of investment in agriculture in the past.
 - In 2011, double budget in water conservancy: **4000** billion Y (**630** billion US\$) in next 10 years.
- **Invest in technology:**
 - Major source of growth in the past
 - Annual growth rate in agri. R&D (public): 2000-2010: **16% in** real term
 - In 2012: New political commitment to invest in R&D and reforming public R&D system
 - In 2013: Modernizing agriculture...

Moving from Minimum Price (P^*) Policy to Target price (P^{**}) policy in the future

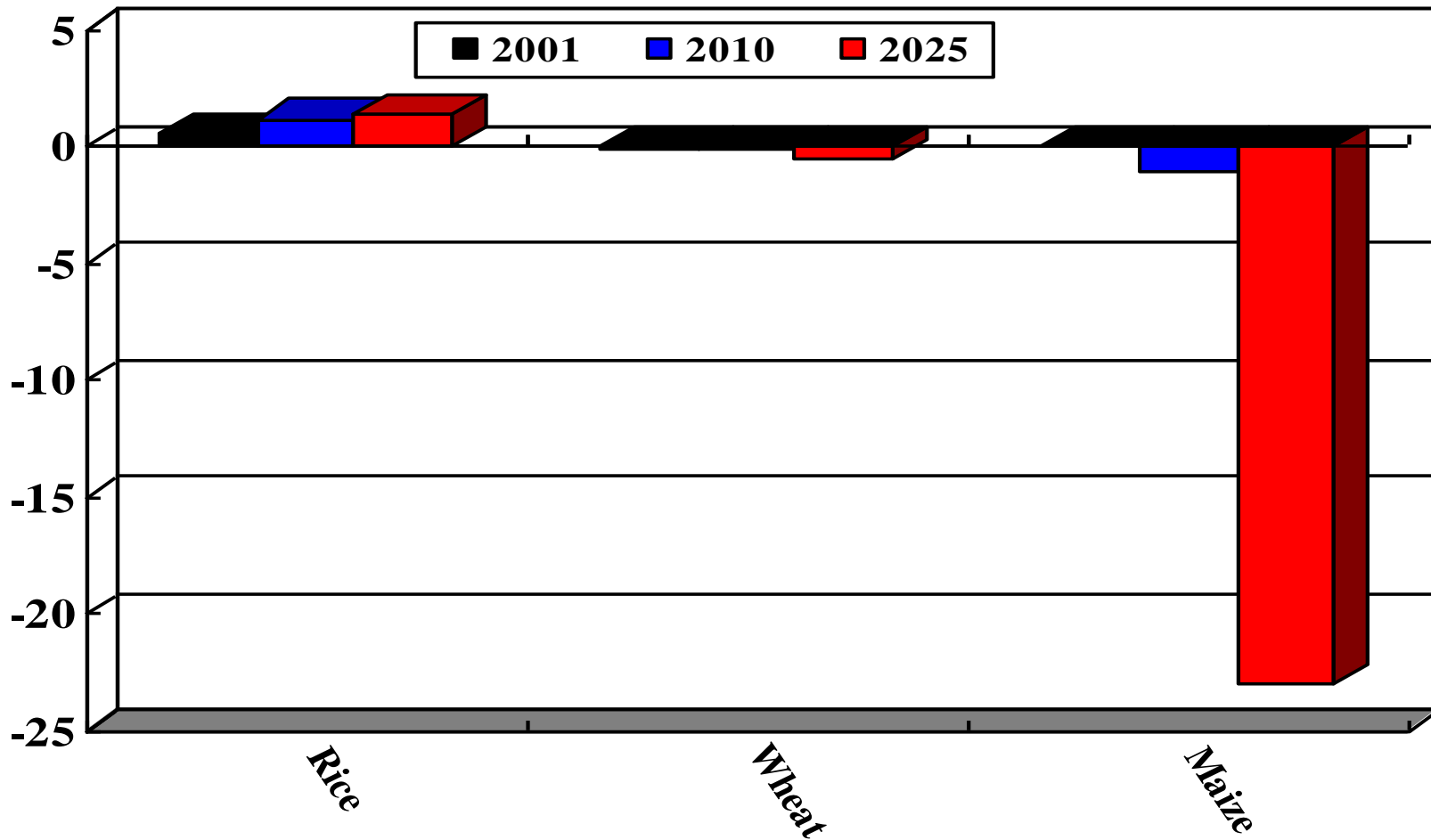


$P^{**}?$

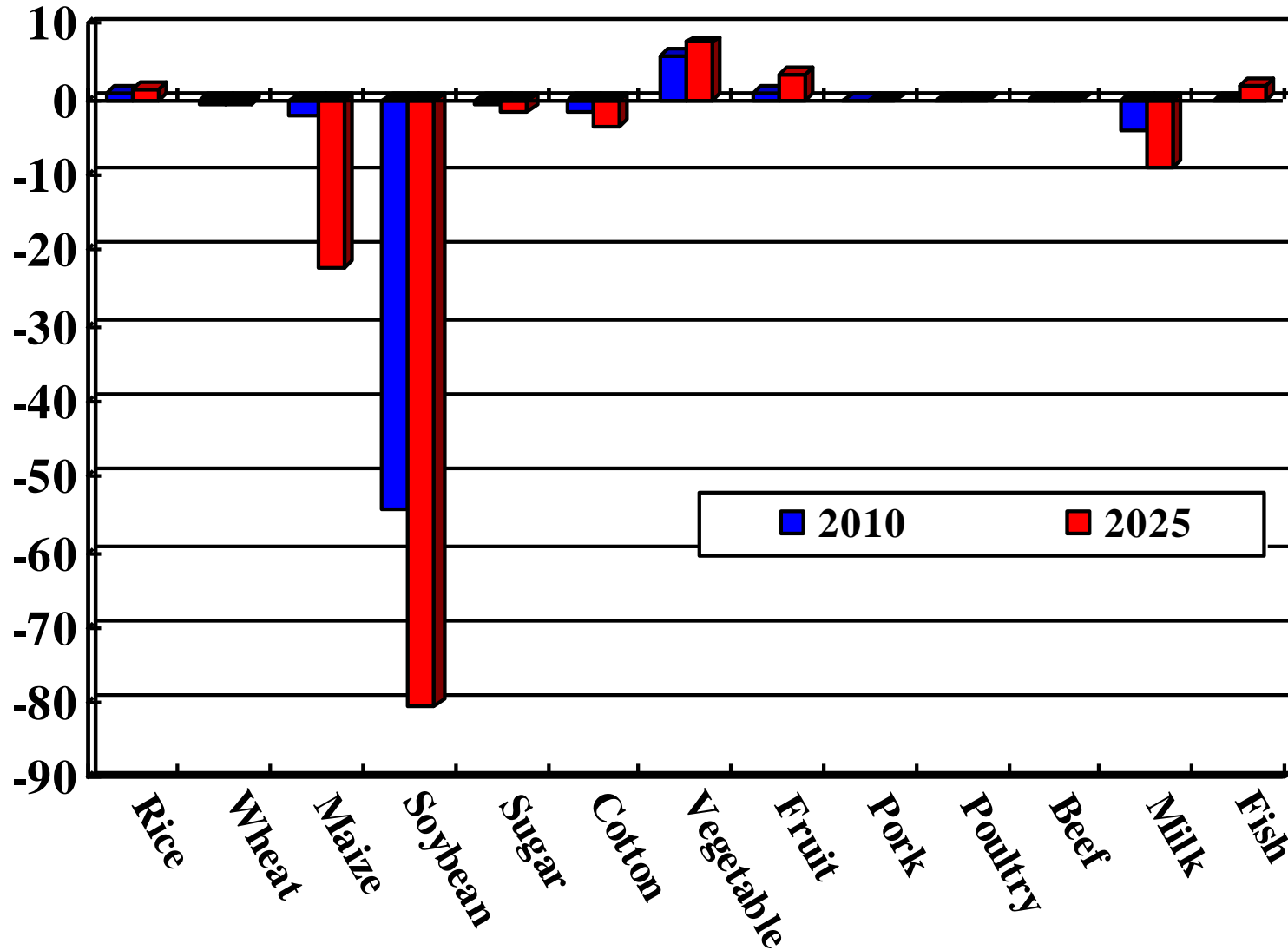
Major Policies and **Food Security Goals**

- **China's #1 policy document in 2014:**
 - **Rice and wheat: 100% self-sufficiency**
 - **Cereal: largely self-sufficiency (90%?)**
 - **Others: reliable supply from both domestic and international market**
 - **Overall: improve food quality and food safety**

China's net export of cereals (million tons) under baseline in 2001-2025



China's net export of agriculture and food (million tons) under baseline in 2010-2025



Source: Simulation by CAPSiM model

Concluding remarks (1)

- **China's rice economy has been undertaking significant transition:**
 - **Falling rice consumption**
 - **Falling total rice area**
 - **Shifting from south to north, from indica to japonica rice**
 - **Maintaining nearly self-sufficiency**
- **Technology will continue to push rice productivity growth, but rice area will also continue to fall under business as usual scenario in the future.**

Concluding remarks (2)

- **Due to domestic and border trade liberalization, rice market had moved from a heavily dis-protected in 1980s to the one highly integrated with global market (except during Global food crisis).**
- **Recently, there is a new tendency that China is likely to gradually shift to a subsidized rice economy.**

Concluding remarks (3)

- **While many food imports will rise, with falling in rice consumption (despite of also falling trend of rice area) and China's commitment to food grain security, China is like to be largely sufficiency in rice in the future (import some high quality indica rice and export high quality japonica/middle quality indica)**