

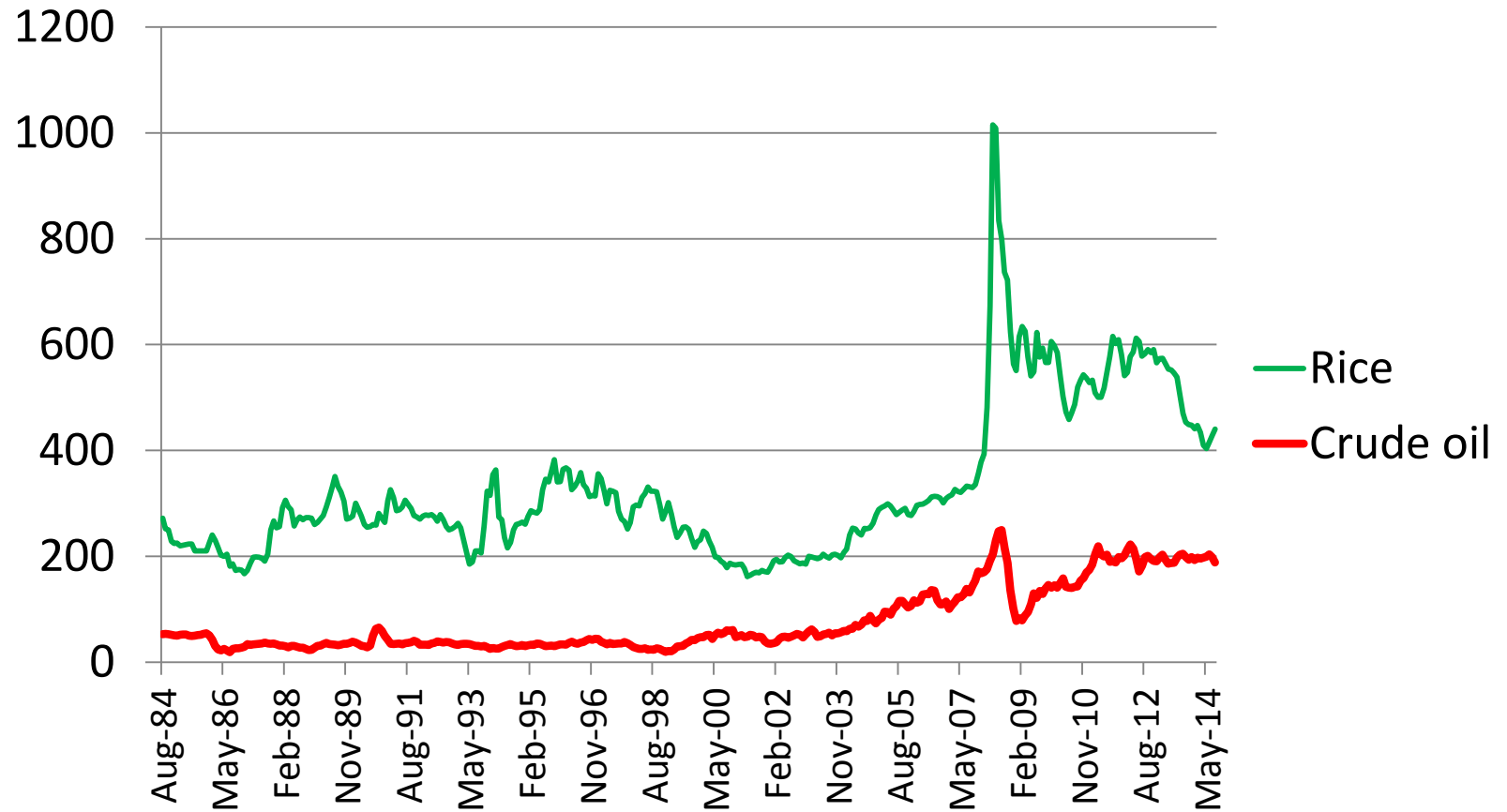
Issues in Thailand's agriculture

Lecture 12
Bhanupong

Main themes

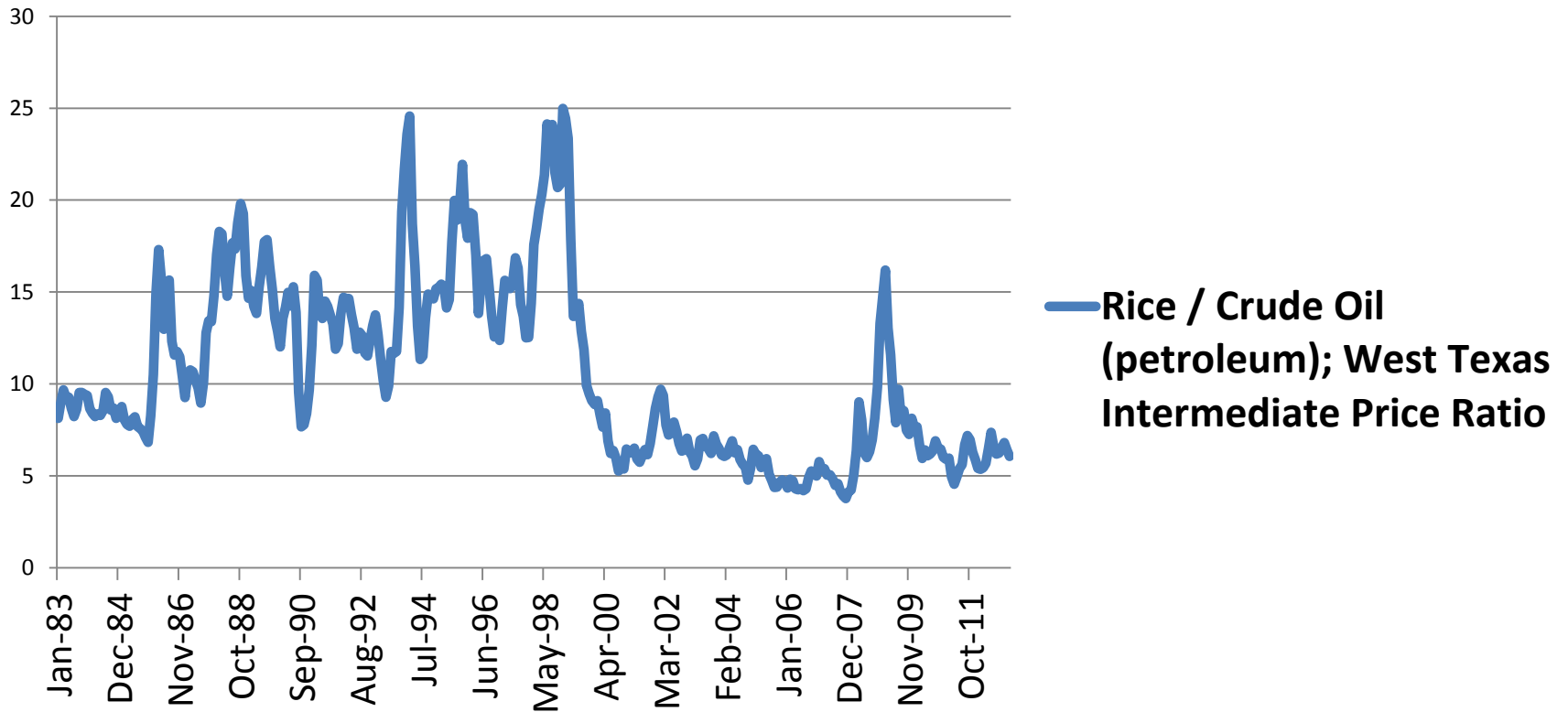
- Declining terms of trade
- Agricultural growth and volatility
- Food security and grain dependency
- Criticism of the rice-mortgage scheme

Crude Oil (petroleum), Price index, 2005 = 100, simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai Fateh



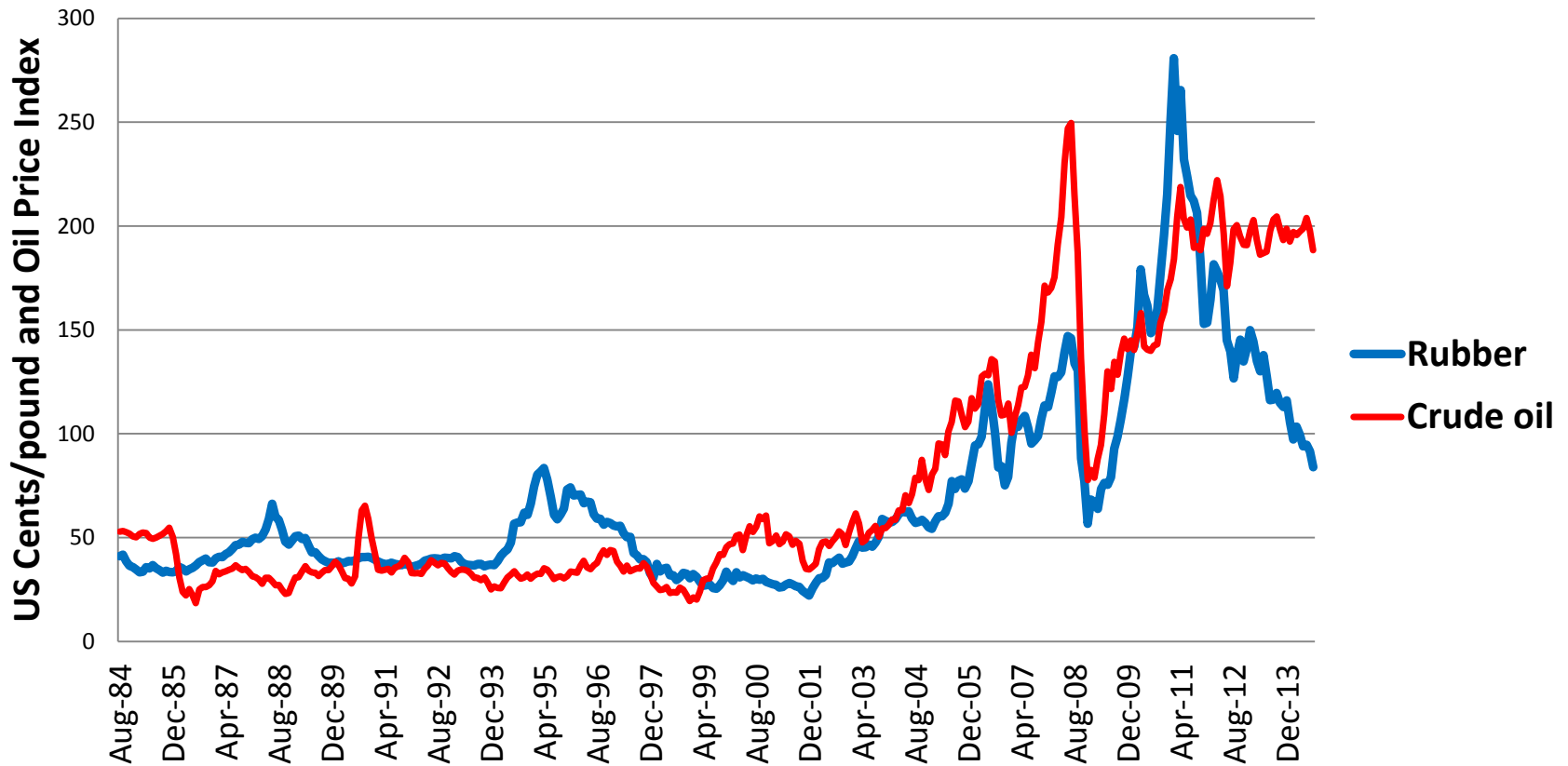
Terms of trade

**Rice / Crude Oil (petroleum)
West Texas Intermediate Price Ratio**

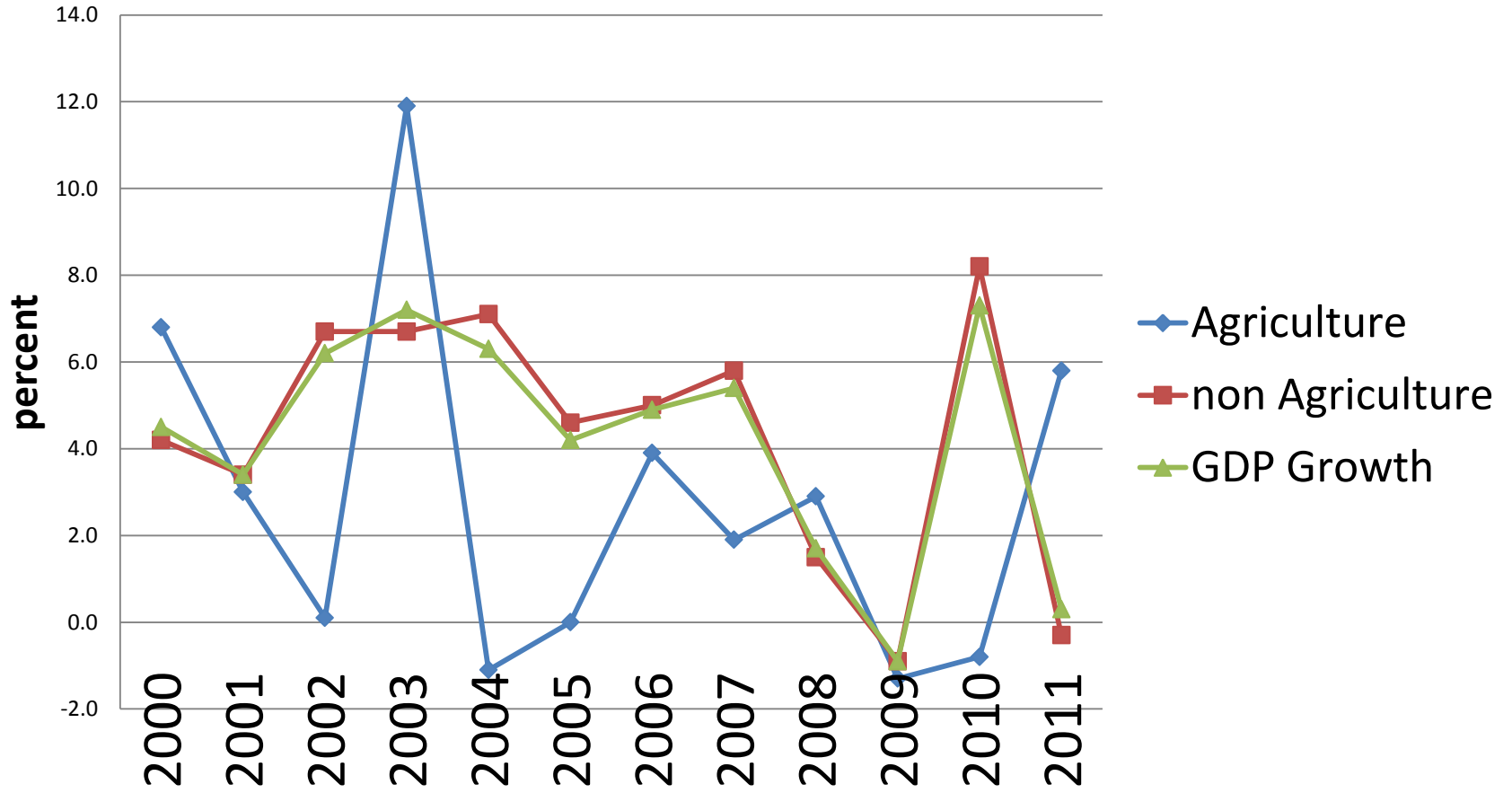


High correlation

Prices of rubber and crude oil



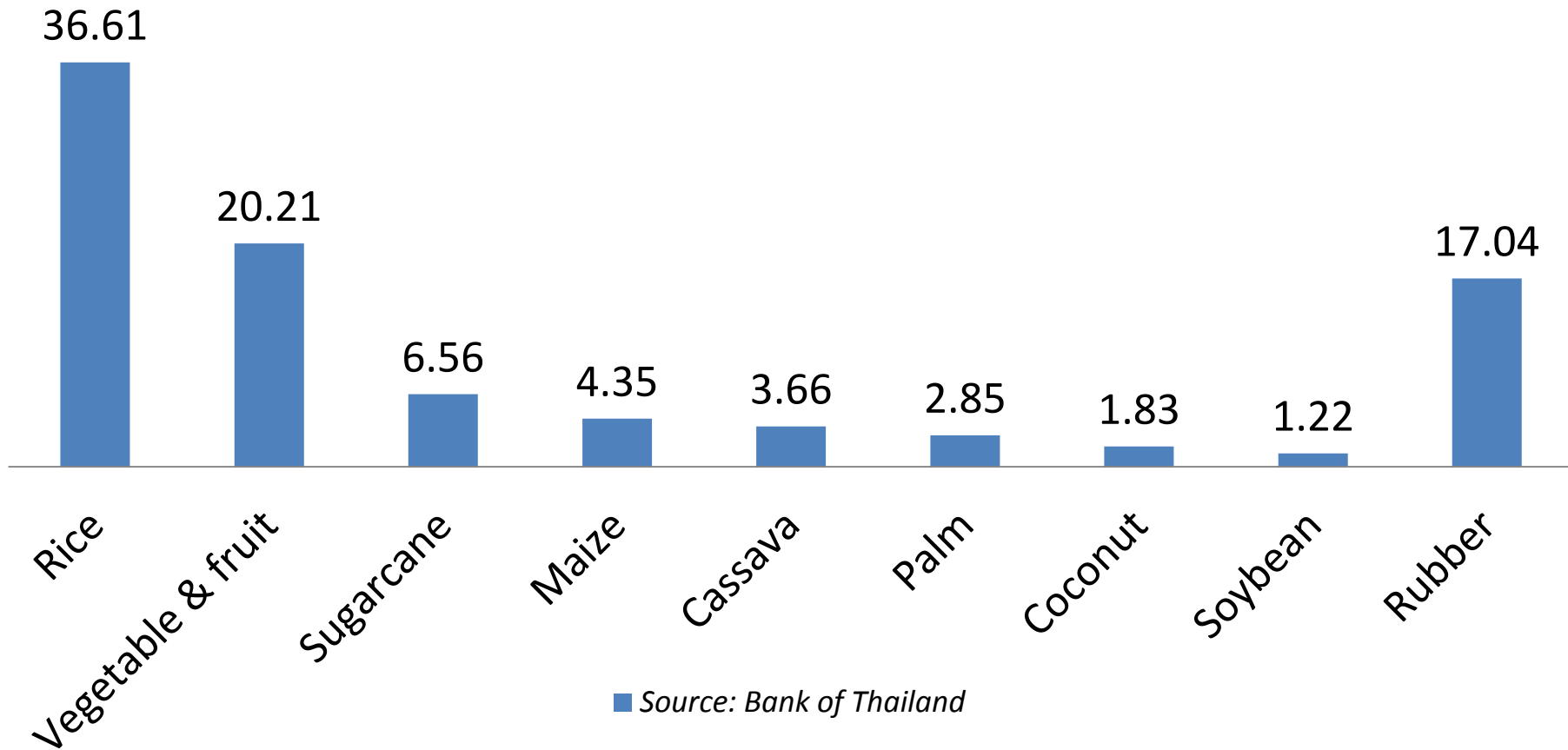
Sectoral Growth



Sectoral Growth 2000-2011

	STDV	Average	Coefficient of variation
Agriculture	3.9	2.8	1.42
non Agriculture	2.9	4.3	0.67
GDP Growth	2.6	4.2	0.63

Weight in Crops Production index



The lucky year: 2008

- Thai rice farmers only managed to get good prices in 2008 because the other main rice-producing countries, such as Vietnam and India, had to cope with natural disasters such as droughts and flooding.
- But when there are no natural disasters in other countries, Thai farmers are not able to compete with others in terms of price, because..

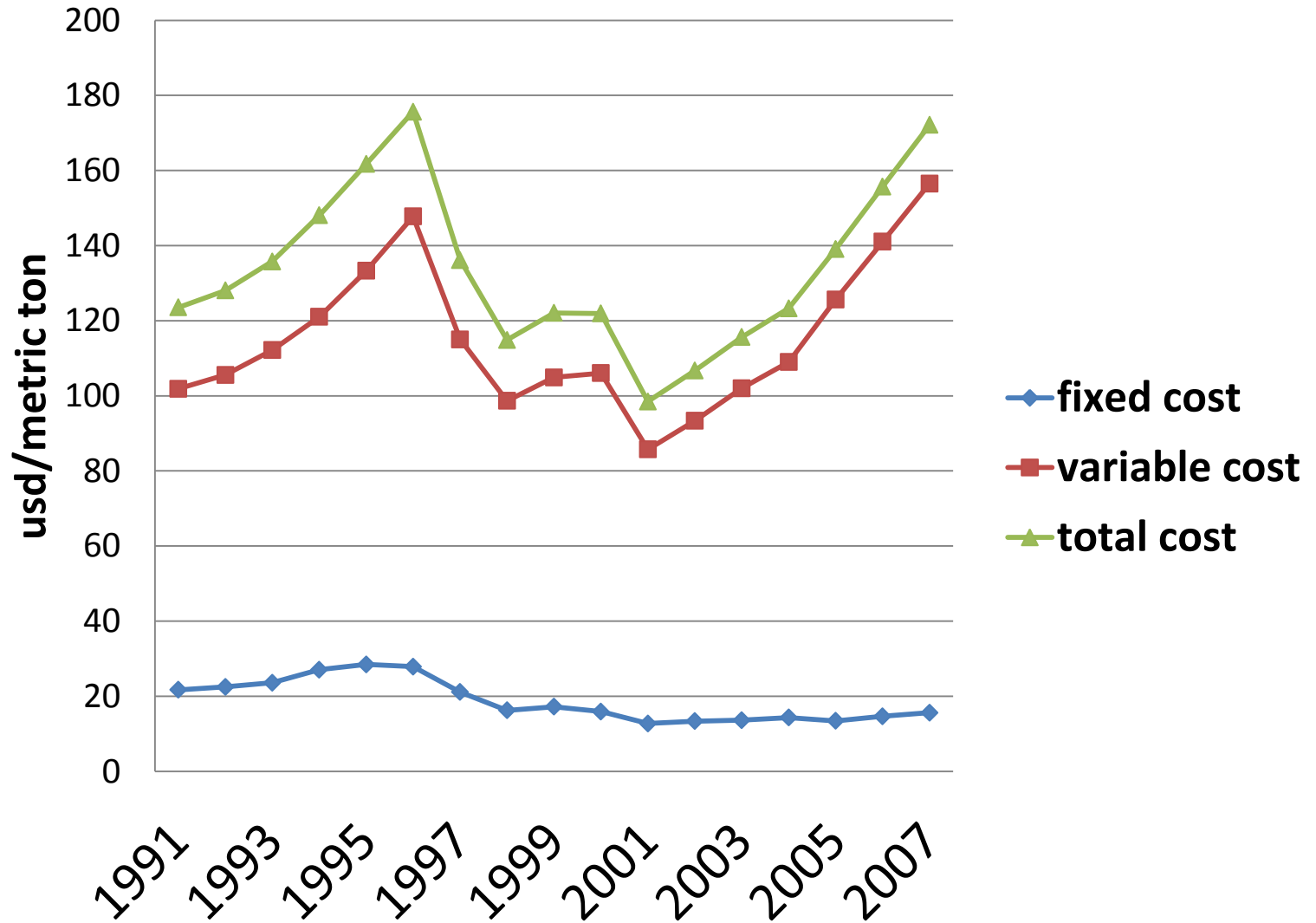
Agflation

- A wide range of factors has been blamed for the food price increases.
- Culprits include slowing agricultural productivity, climatic and weather-related factors, rising demand from China and India, higher oil prices and demand for bio-fuels, speculative behavior in financial markets, hoarding, falling stocks, dollar depreciation, low interest rates, among others.

From boom to bust

- But from the second half of 2008, global attention shifted again.
- The eruption of the global financial crisis and slide of the global economy into recession raised fears that the world economy would plunge into another Great Depression.
- One consequence of the global recession has been a fall in world commodity prices that has also affected food commodity prices.
- This fall in food prices (and the fall in oil prices) has mitigated immediate concerns about large-scale food insecurity.
- Our focus is now on cost control

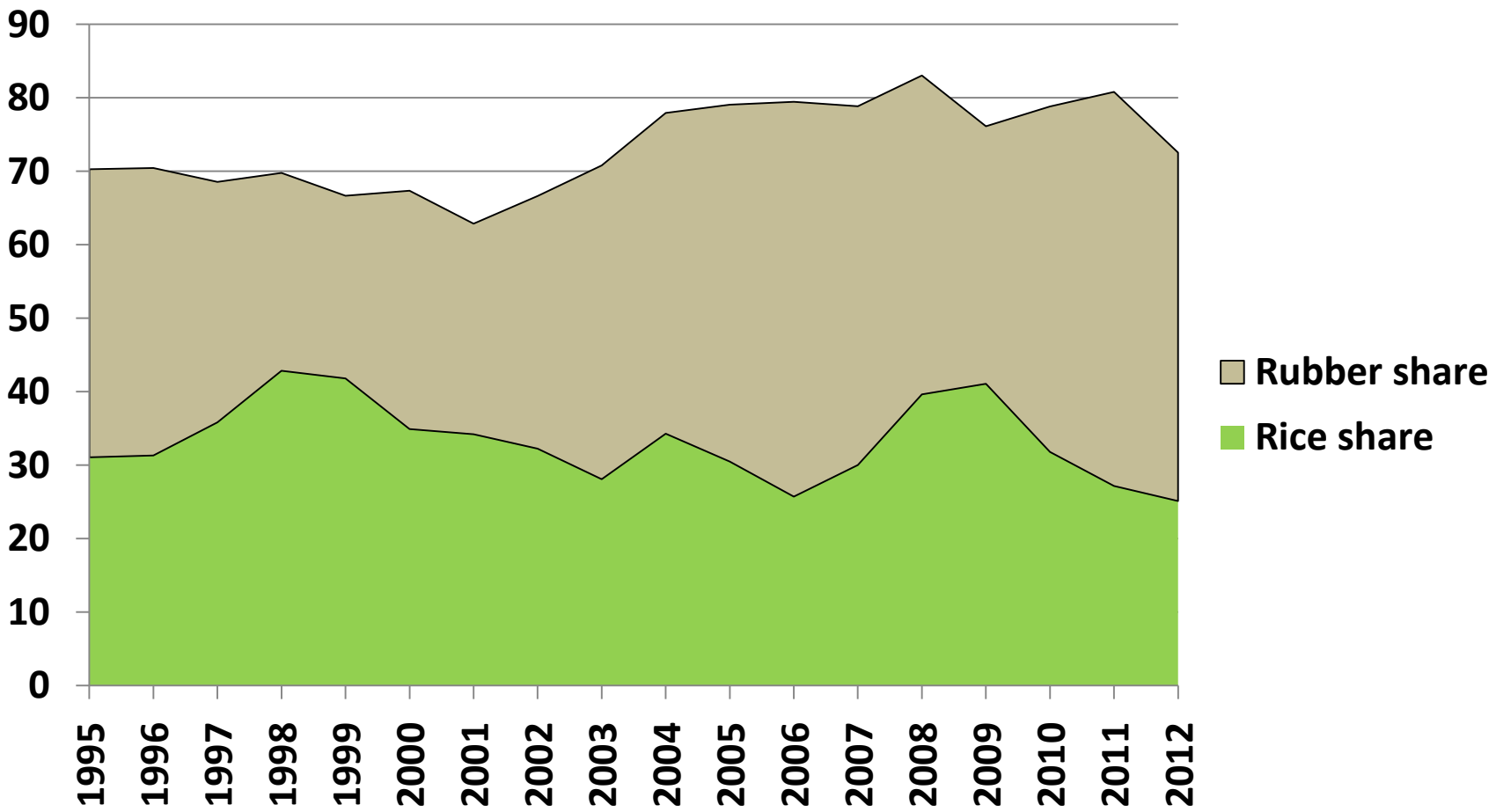
Cost of paddy production in Thailand



Cost of chemical farming (baht /rai)

Fertilizer	900-1000
Pesticides, insecticides	550-1000
Rice seeds	600-750
Fuel	300
Labor	200
Harvester rental	500
Land rental	1500
Farm management fee	2400
Total cost	7450-8150

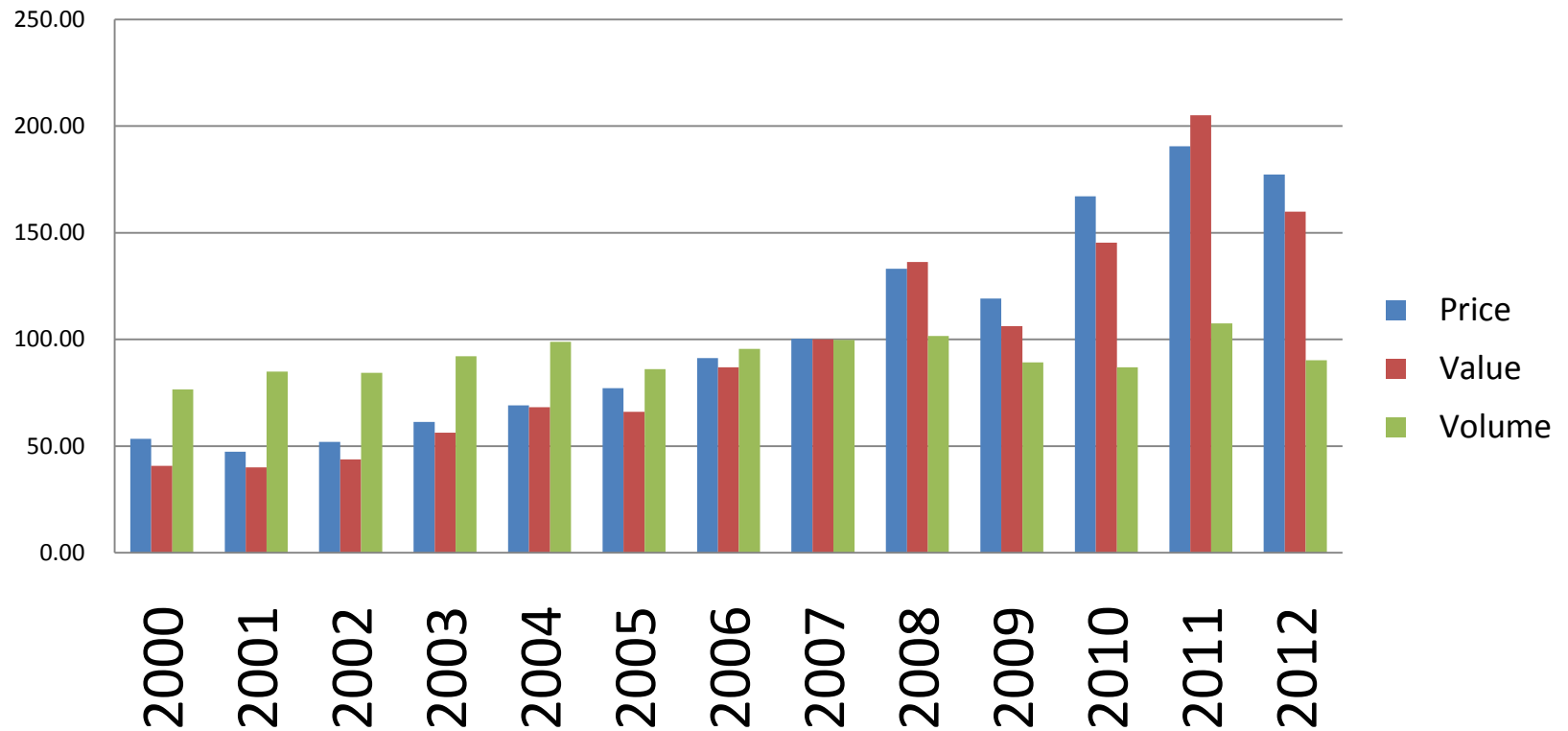
Shares in total agricultural exports



Total Export Revenue = P x Q

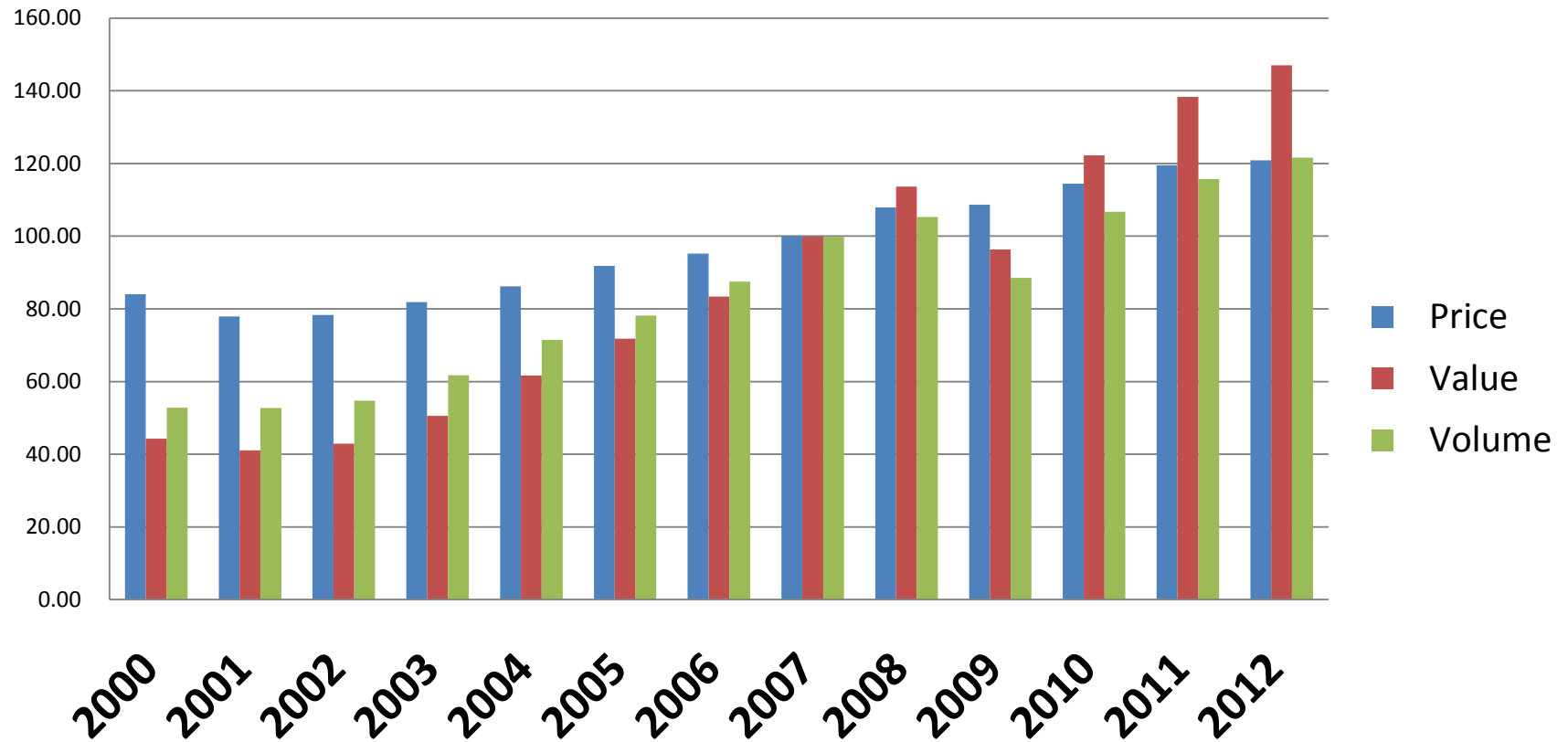
Price factor dominates quantity

Agricultural Exports



A small country assumption

Manufactured exports



Correlation coefficients between export values (2000-2012)

	Price	volume
agriculture	.98	.62
manufacturing	.98	.99

Supply and demand analysis

- Price elasticity of supply
- A small country assumption for some products
- Price elasticity of demand and substitutes
- The more narrowly defined commodities, the higher the price elasticity

Jasmine vs. jazzman

- **Jasmine rice exports will soon run into fierce competition in the United States, which has successfully grown and registered a new type of fragrant rice called "Jazzman".**
- Louisiana State University's Agricultural Centre have come up with a new variety of aromatic rice, known as LA2125 , with a very similar fragrance, soft grain and quality as Thai jasmine rice.
- Consumers and Asian restaurants in the US may shift to serving Jazzman rice as it tastes the same but is cheaper.
- Another challenge is the yield: up to **1260 kilograms** per rai of Jazzman rice can be grown, compared to **400 kilograms** of Thai jasmine rice production.

Innovation and competition

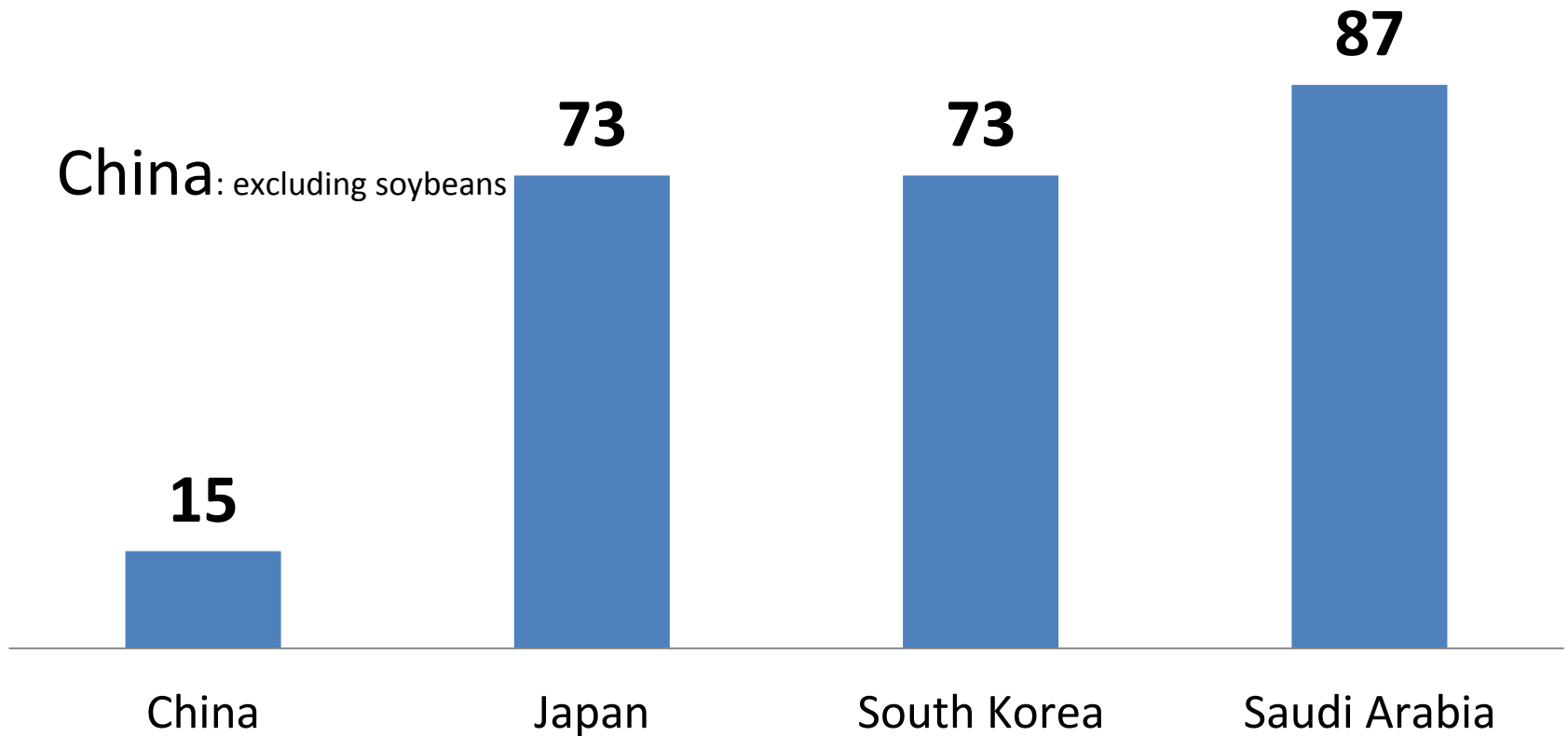
- The LSU rice breeder who developed the variety said the project required 12 years of work to obtain a long-grain rice with good milling quality, high yield and the correct aroma and flavor.
- Consumers and Asian restaurants in the US may shift to serving Jazzman rice as it tastes the same but is cheaper.

Jasmine rice from Vietnam and Cambodia

- Vietnam has already come up with rice that tastes similar to Jasmine.
- It is now on sales in supermarkets in London at 1,000 baht for 20 kg bag, compared with 1,500 baht Jasmine rice from Thailand.
- The recent dong devaluation has enabled Vietnam to offer 50% lower price than Thailand.
- In 2014, because of cheap jasmine rice from Cambodia, the share of Thai jasmine rice in Hong Kong dropped from 90% to 45 %.

Grain Dependency

■ % of imports in domestic consumption



China's self-sufficient policy

- In the early 1960s, even as tens of millions of Chinese starved in a brutal famine, Mao Zedong was reluctant to import grain.
- Now China is deeply integrated into global commodity markets.
- China calls for 95% of grain demand to be met by domestic production.

Redefine self-sufficiency

- In 1961, China would have needed 25 % of total export revenues to meet domestic grain shortfalls through imports.
- Today, that proportion is at most 2 %.
- China should import more of its food rather than dedicate limited land and water resources to growing it all.
- Earning enough foreign exchange through exports to import whatever grain you need could be described as self-sufficiency.

Thailand rice exports hit 12-year low

- Rice exports from Thailand plunged 37 per cent last year to the lowest in more than a decade, plunging the nation from first in the world to third place.
- In 2012 Thailand sold 6.73 million (metric) tonnes with a value of \$4.63 billion, compared with 10.7 million tonnes, worth \$6.43 billion in 2011.

5 percent broken milled white rice



Thailand rice exports hit 12-year low

Published Bangkok Post Jan 24, 2012

- India became the largest supplier in 2011, selling 10.3 million tonnes, according to the USDA.
- Vietnam, world number two exporter, exported 8 million tonnes in 2011.

Paddy **Mortgage** Policy

- Rice exports declined after the government of Prime Minister Yingluck Shinawatra introduced a price support program in October, 2011.
- The government bought the grain from farmers above market rates to boost domestic prices and lift rural incomes.
- Analytical diagram

Stocking up problems

- The government spent 689 billion baht in 2011 and 2012 buying rice from farmers at prices that were as much as 76 % higher than market rates.
- The government rice inventories reached 14.7 million tonnes in 2014, compared with 6.1 million in 2010.
- Storage cost and steep depreciation rate
- Smuggled rice from neighboring countries
- Loss of international competitiveness

- Supply = beginning stocks + domestic production + imports.
- Use = domestic consumption + exports + ending stocks.
- Domestic consumption = all possible uses of the commodity: food, feed, seed, waste, and industrial processing.

Disruption of the world market

- But whether the actual amount will match with the purchase figures will only be known when the rice is actually sold to exporters or sold by the government in government-to-government deals.
- The huge stockpile will pose a real problem with the arrival of new harvests when warehouse space is needed to store new rice to be bought under the scheme.

Disruption of the world market

- Depreciation: the rice quality will drop if the grains are kept for too long and they will fetch much lower prices.
- Pressed with these dual problems, the government may be forced to sell cheap.
- There is no doubt the government will suffer a loss if it wants to dispose of the massive rice stockpile to make room for the arrival of new rice purchases.

An alternative

- The government has good intentions in helping farmers earn more from their crops even though it also expects to win their votes during the election.
- The loss burden from the rice mortgage scheme may be acceptable if the farmers are the only real beneficiaries of the scheme.
- However, others have benefited much more than the farmers, such as millers, brokers, corrupt politicians and officials.

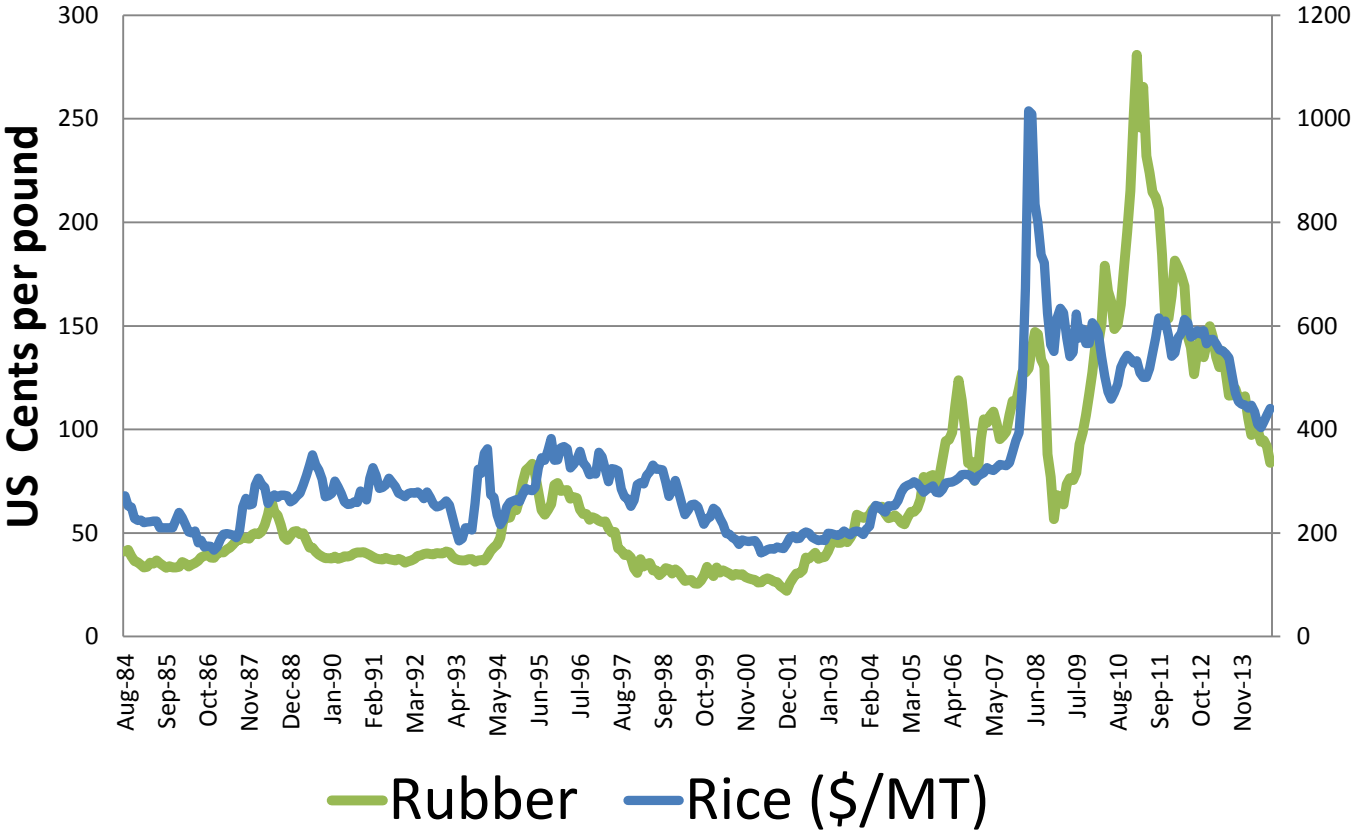
How the rice mortgage system works

- Farmers kept their rice in their own granary and got money from the Bank of Agriculture (BAAC) at low interest.
- If the price rose, the farmers could sell their rice and return the money with interest to BAAC.
- Yingluck Government could not to pay farmers as it would be in breach of the constitution to borrow money while being a caretaker government.
- Then came the 2014 military coup...

A long run relationship (co-integrated) between the two prices

(correlation coefficient = 0.72)

Prices of rice and rubber smoked sheets: 30 years



Milled Rice Production by Country in 1000 MT

Year of Estimate: 2014

Source: [United States Department of Agriculture](#)

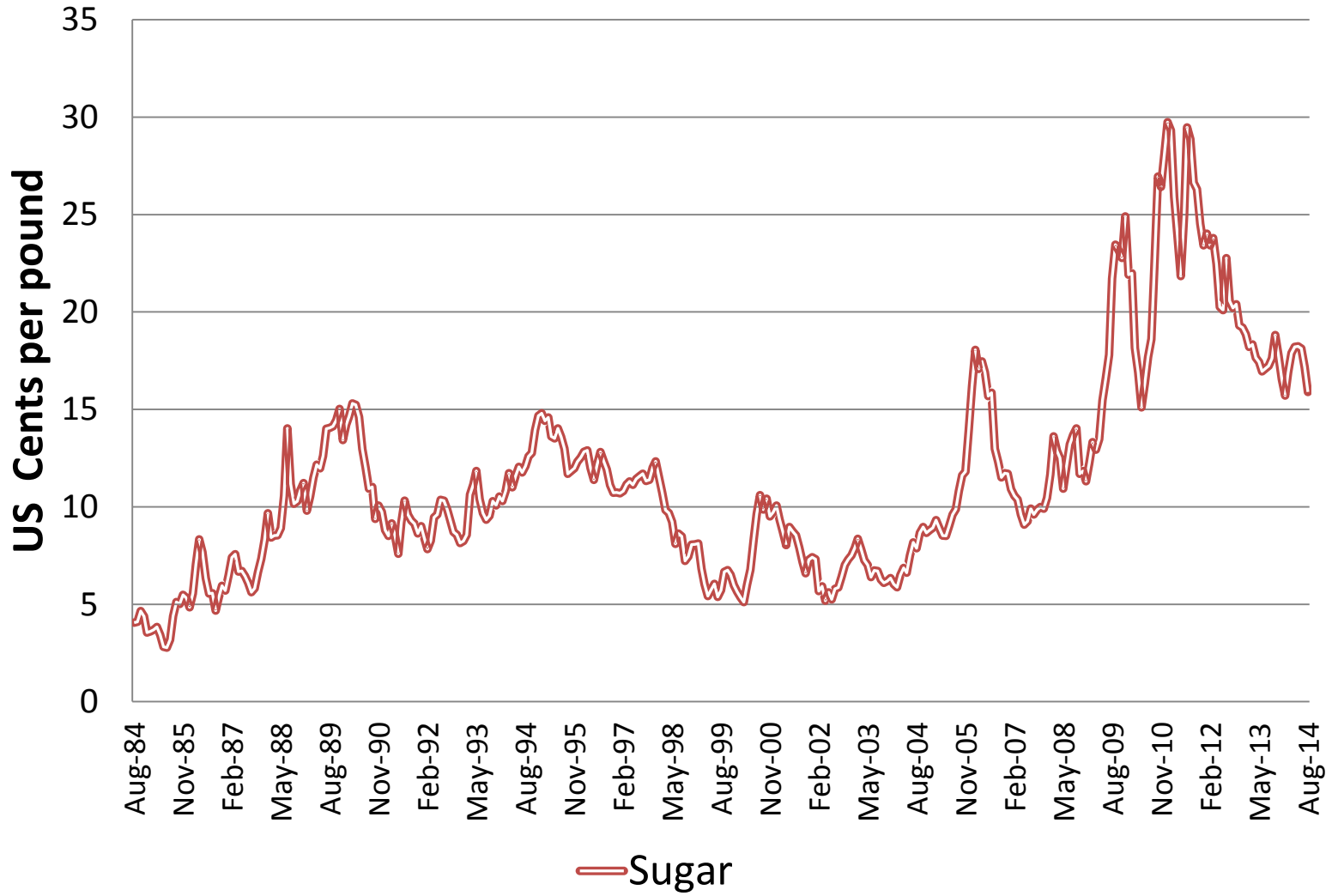
Rank	Country	Production (1000 MT)
1	China	144,000.00
2	India	106,000.00
3	Indonesia	37,700.00
4	Bangladesh	34,800.00
5	Viet Nam	27,800.00
6	Thailand	20,500.00
7	Philippines	12,200.00
8	Myanmar	12,150.00
9	Brazil	8,500.00
10	Japan	7,700.00
11	United States	6,811.00
12	Pakistan	6,700.00
13	Egypt	4,900.00
14	Cambodia	4,900.00
15	Korea, Republic Of	4,150.00

Year of Estimate: 2014

Source: [United States Department of Agriculture](#)

Rank	Country	Exports (1000 MT)
1	Thailand	10,000.00
2	India	9,000.00
3	Viet Nam	6,700.00
4	Pakistan	3,900.00
5	United States	3,262.00
6	Myanmar	1,300.00
7	Cambodia	1,200.00
8	Uruguay	950.00
9	Brazil	900.00
10	Egypt	875.00

Sugar



Questions

- Discuss the costs and benefits of the rice-pledging program in short-run and long-run impact on the Thai economy.
- Should the government intervene to support commodity prices such as tapioca?
- How should the government subsidize rice farmers' purchases of farm inputs?

Disappearing buffaloes



Dwindling number of Thai buffaloes

- From the last decade, the number of buffaloes declined from 1.5 million to 840,000 heads, representing 56 % decline from 2004.
- Due to disappearing animal farm land, smuggling, and slaughtering of mother buffaloes for meat consumption.
- Department of livestock proposed 5.6 billion baht budget for raising buffaloes to 1 million heads within 10 years.

Mr. Tapioca: Inspector General from MOC



How to subsidize

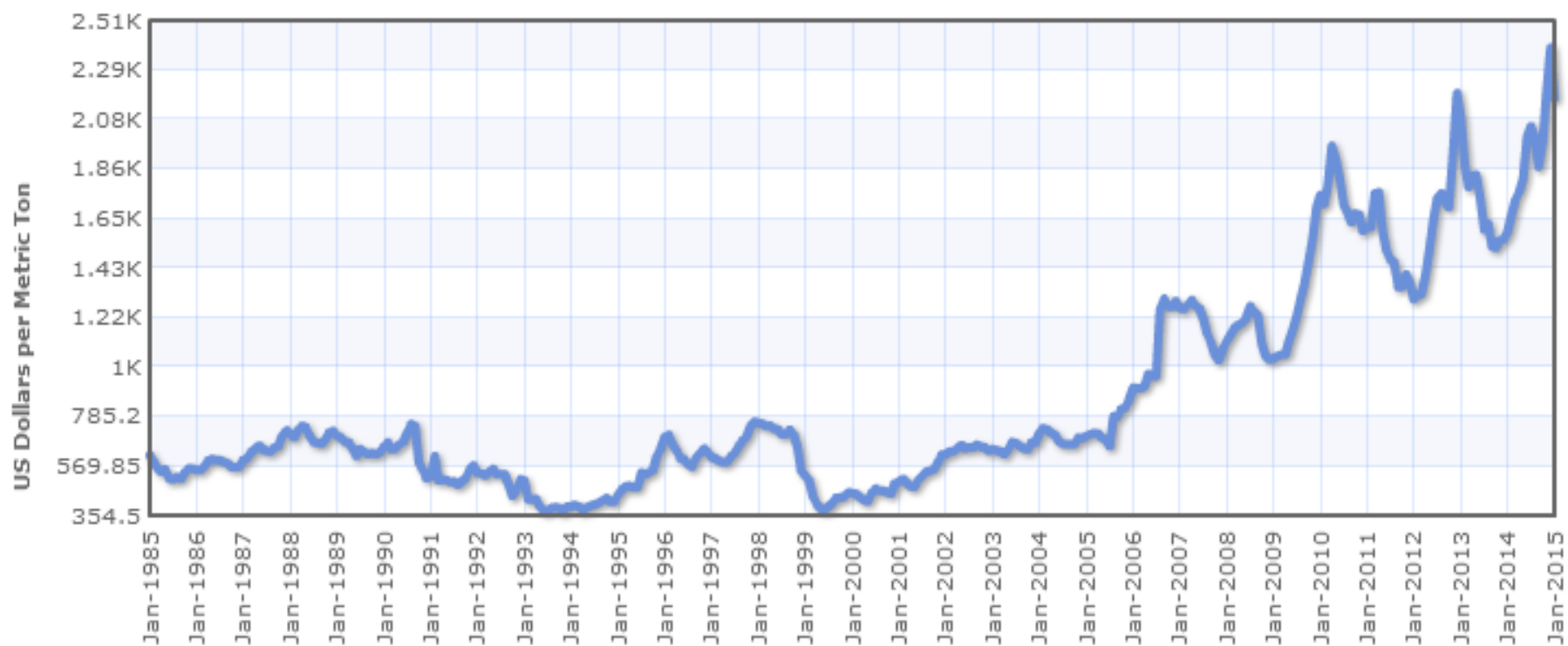
- In January 2015, the cabinet approved 2,760 million baht to subsidize 3 % interest rate for BAAC's 50,000 baht loan for each farmers who postpones harvesting in order to push up the price to 2.80 baht/kg at the beginning harvest season.
- The interest subsidy at 3% also goes to processing factories, exporters, and ethanol producers to purchase tapioca at the high supply seasons to shore up the price and to farmers who adopt the water dripping system and sand and soil- separated screening system for clean and high quality tapioca.

Prices of Fishmeal since 1995

Fishmeal Monthly Price - US Dollars per metric ton

Range 6m 1y 5y 10y 15y 20y 25y 30y

Jan 1985 - Jan 2015: 1,552.980 (251.76 %)



Description: Fishmeal, Peru Fish meal/pellets 65% protein, CIF, US Dollars per Metric Ton

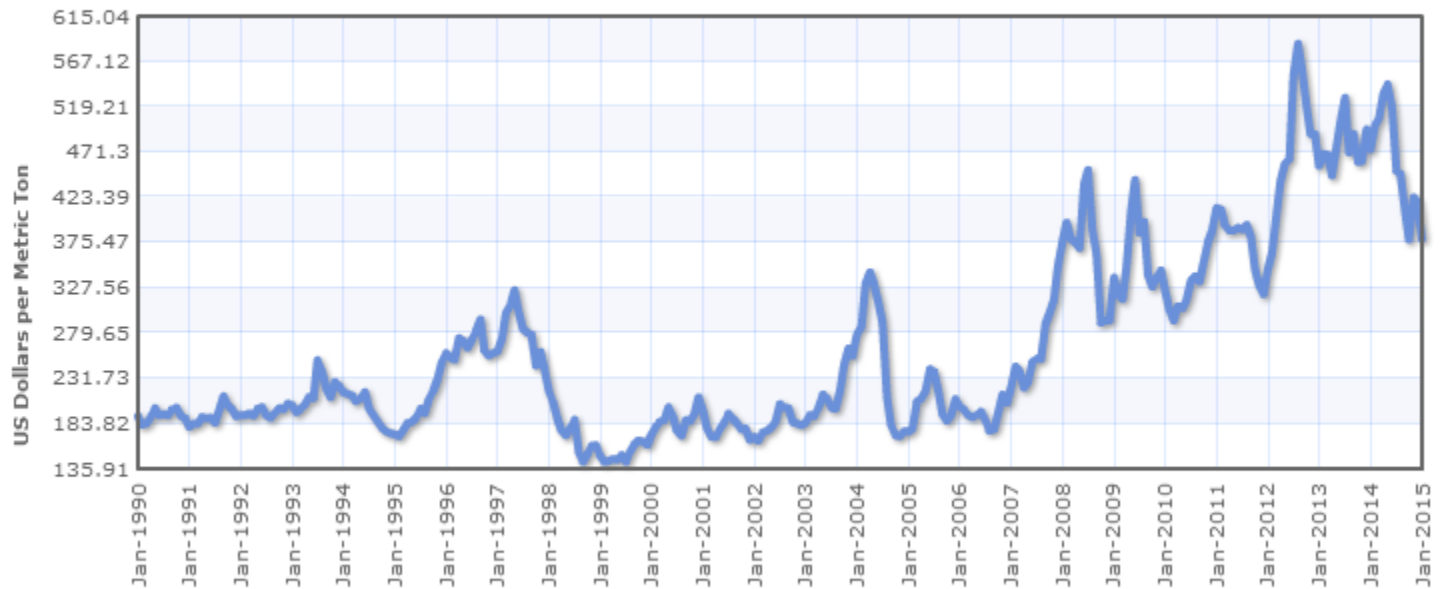


Soybean meal

Soybean Meal Monthly Price - US Dollars per Metric Ton

Range 6m 1y 5y 10y 15y 20y 25y 30y

Jan 1990 - Jan 2015: 187.730 (98.13 %)



Description: Soybean Meal, Chicago Soybean Meal Futures (first contract forward) Minimum 48 percent protein, US Dollars per Metric Ton