

# Issues in Thailand's agriculture

Lecture 12  
Bhanupong

# Course Syllabus

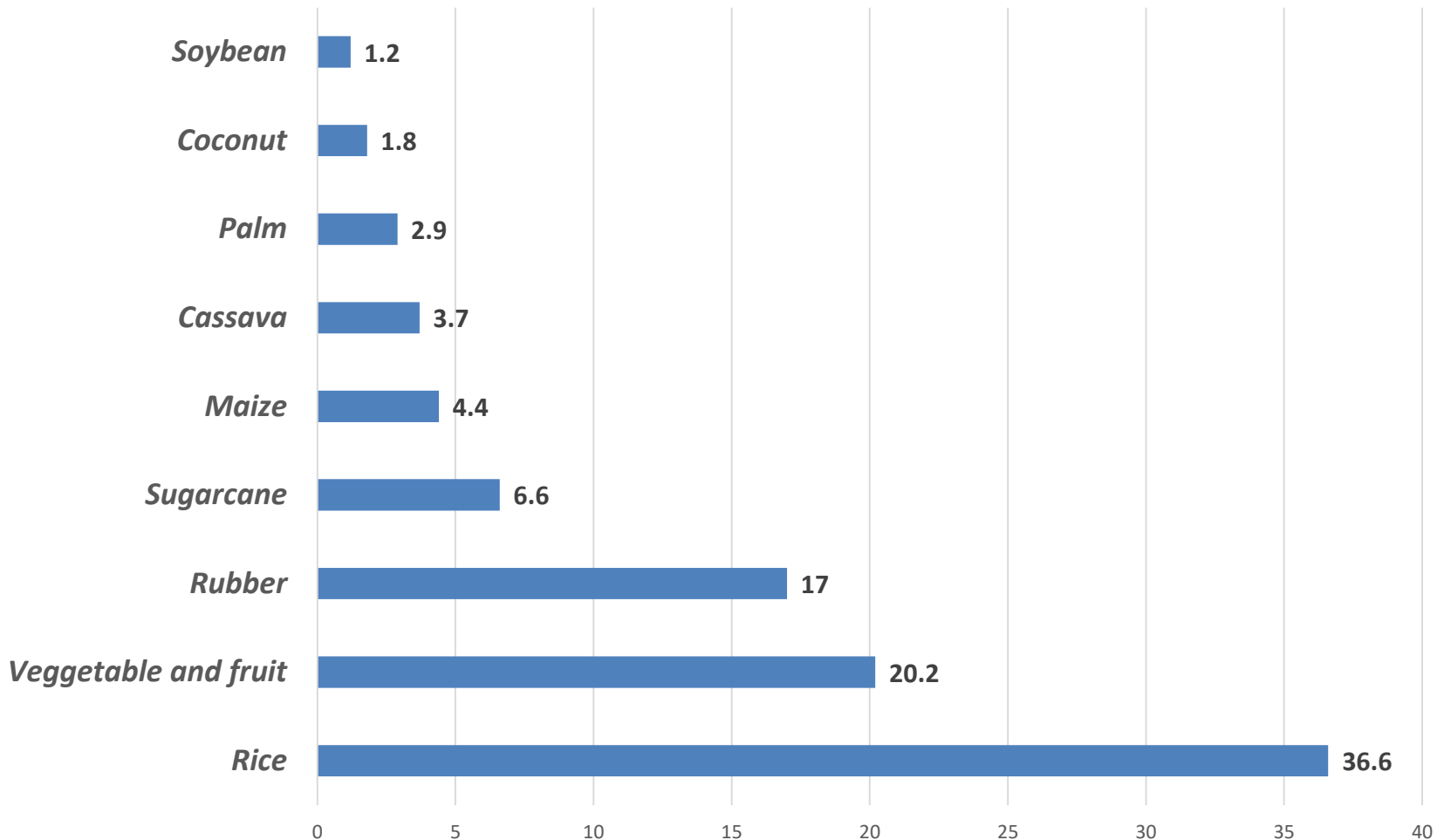
## Lecture 12

- The detrimental effect of Thailand's declining terms of trade
- Agricultural growth and its volatility
- Chemical farming, food security and grain dependency are examined.
- International competitiveness of Thai agricultural exports.
- Criticism of the farm product subsidies

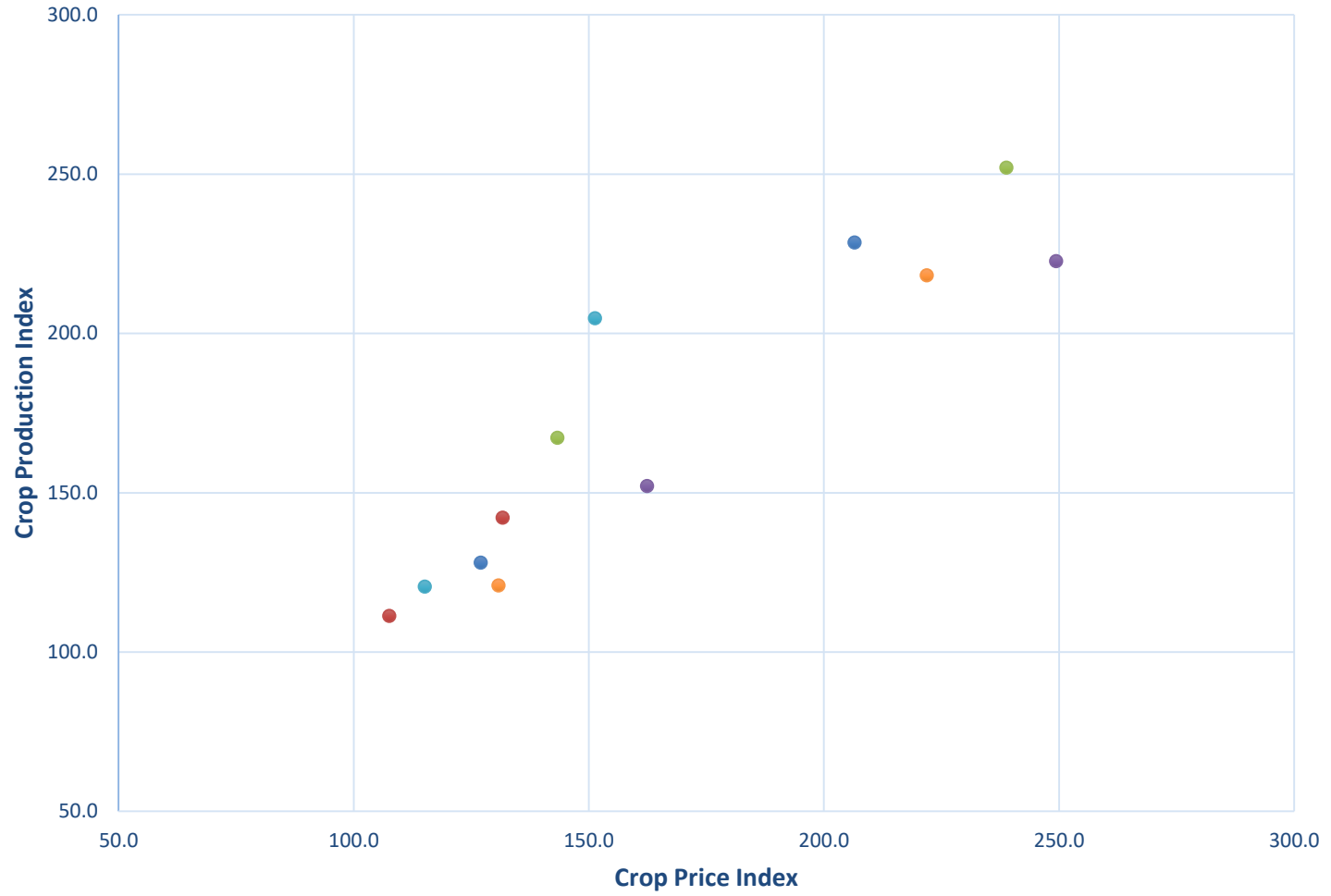
# Key words

- Farm households' debt
- Declining agricultural prices
- Agricultural growth and volatility
- The rice-mortgage scheme
- Populism policy: agriculture subsidies
- A case study of cassava exports

Main Crops in Agriculture  
Share of weight in agricultural production index  
Source: Bank of Thailand



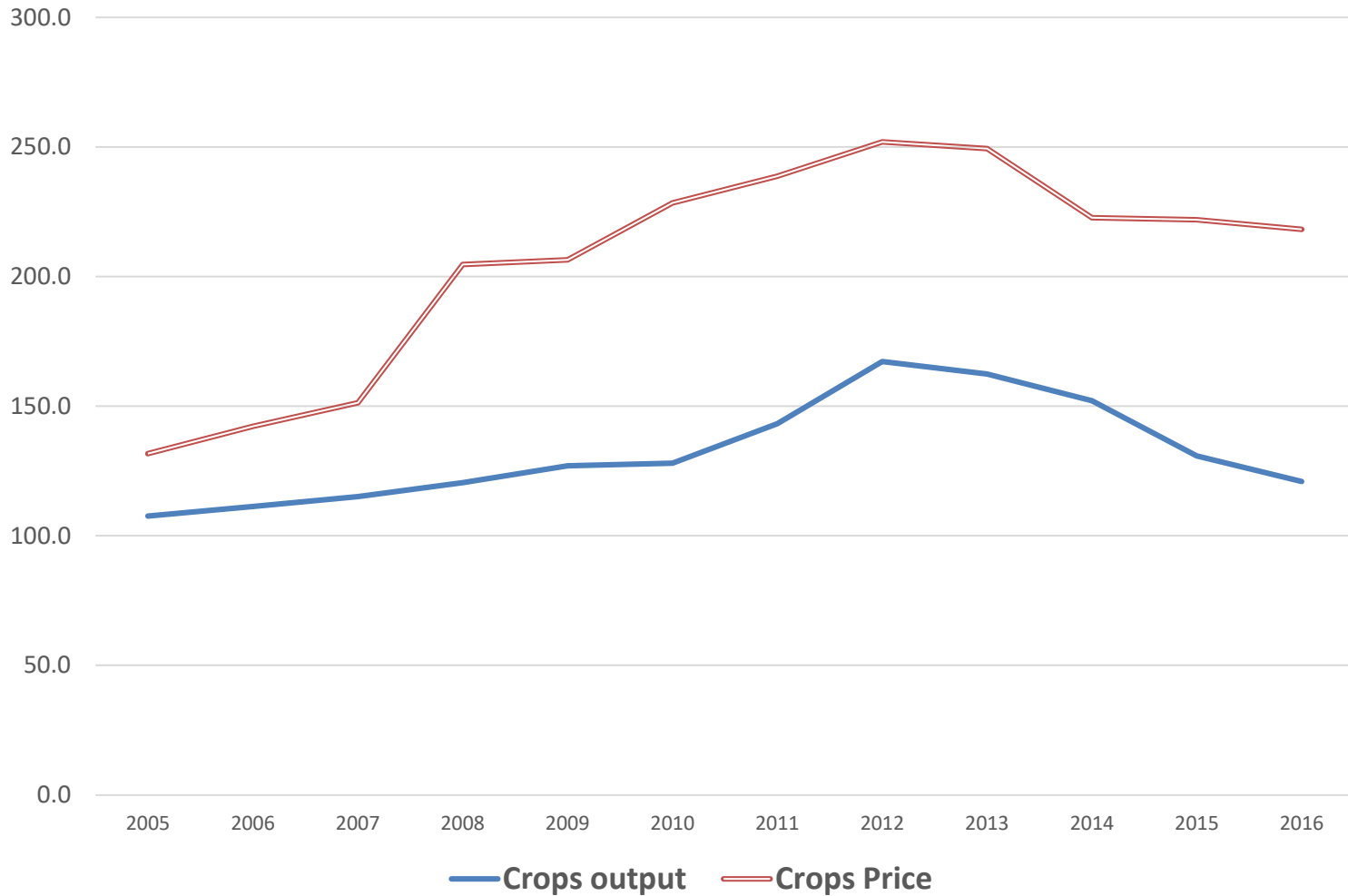
## Crop Indexes: 2005-2016



# Livestock Indexes: 2005-2016



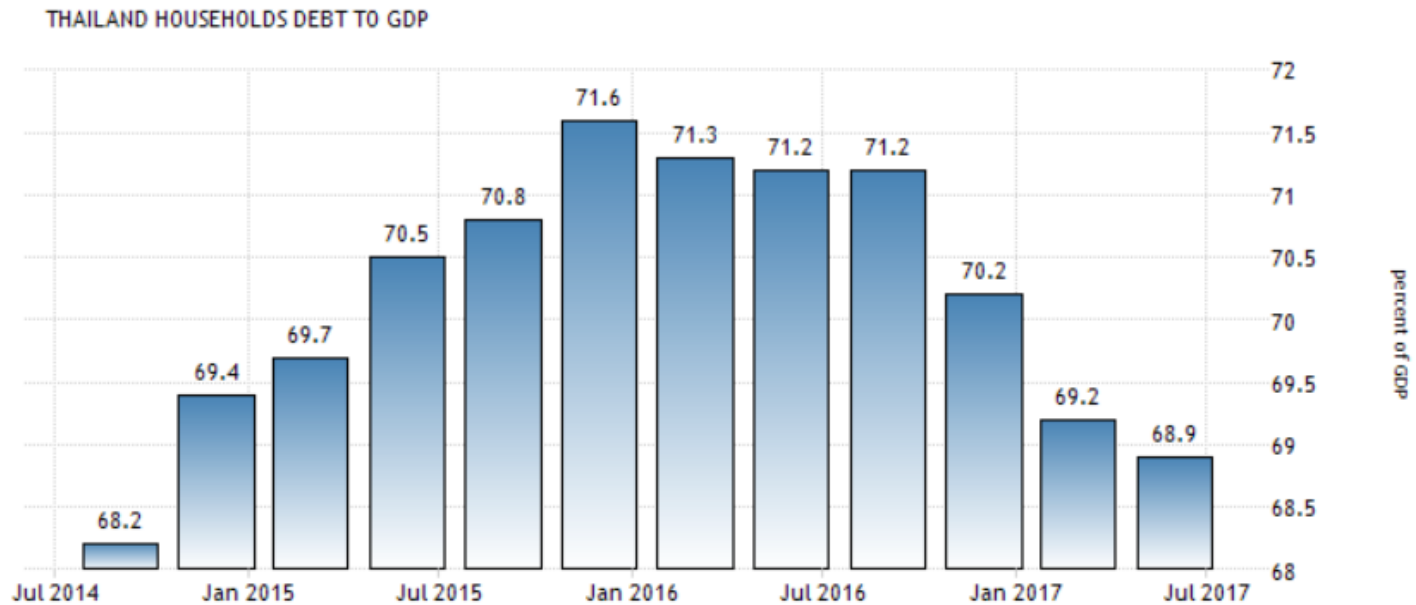
## When farm income shrank



# Farm household debt

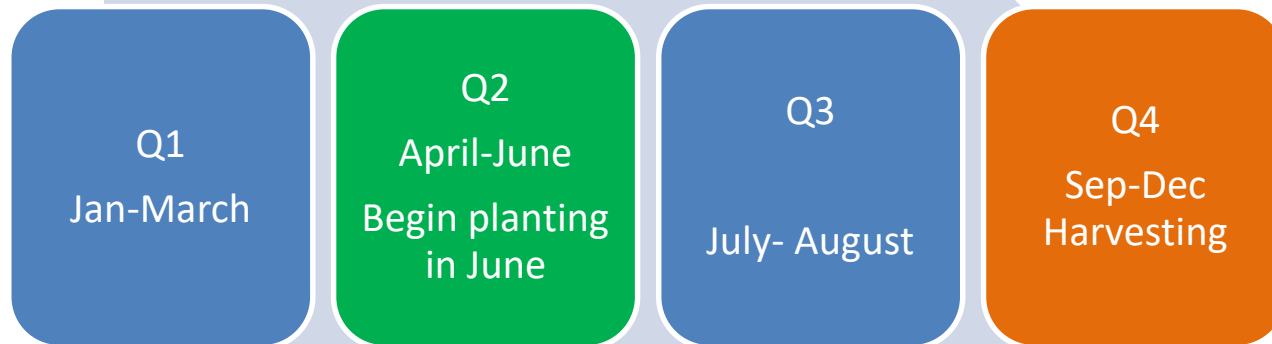
- Thai farmers' debt remains high since they have to borrow money to buy staple goods since the drought in late 2013.
- Loan for cultivation and consumption are needed while waiting for income generated from a new growing season (Q2 and Q3).
- Risk of defaulting is high because of high debt service coverage ratio.
- Rubber prices depends on China's growth, while rice prices are depressed due to high inventory.
- Household debt was 81% in 2016--11 trillion baht

Households Debt in Thailand decreased to 68.90 percent of GDP in the second quarter of 2017 from 69.20 percent of GDP in the first quarter of 2017, reaching an all time high of **71.60 percent of GDP in the fourth quarter of 2015** and a record low of 25.40 percent of GDP in the fourth quarter of 1991.



Source: [Tradingeconomics.com](http://Tradingeconomics.com)

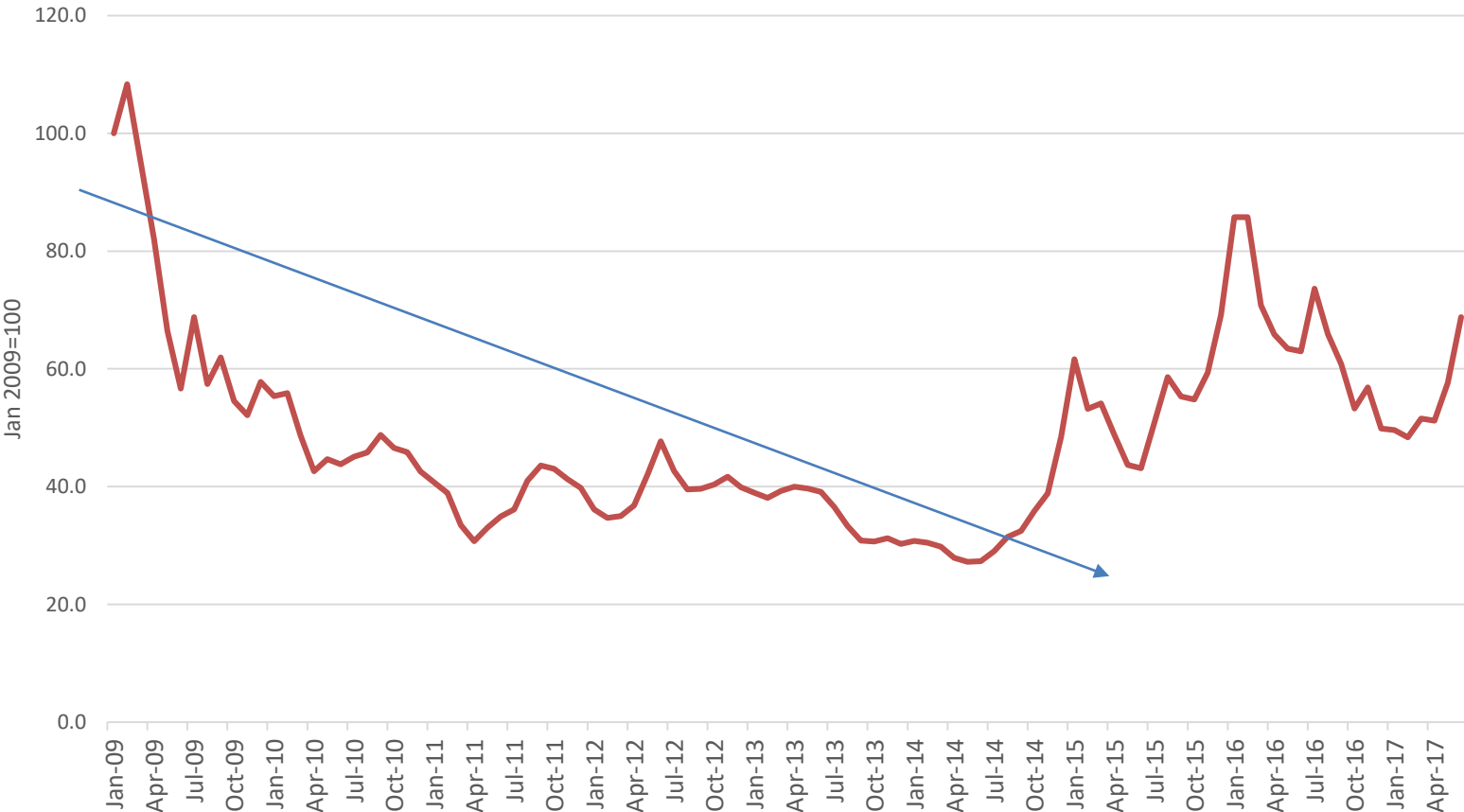
Rice farmers begin their main crop at the end of Q2 and harvest in Q4



Low paddy prices and high debt service keep farmers from normal spending pattern. They need to borrow while waiting Until Q4, when they can sell paddy.

# When terms of trade turns against Thai farmers

Terms of Trade: Rice vs. Crude Oil

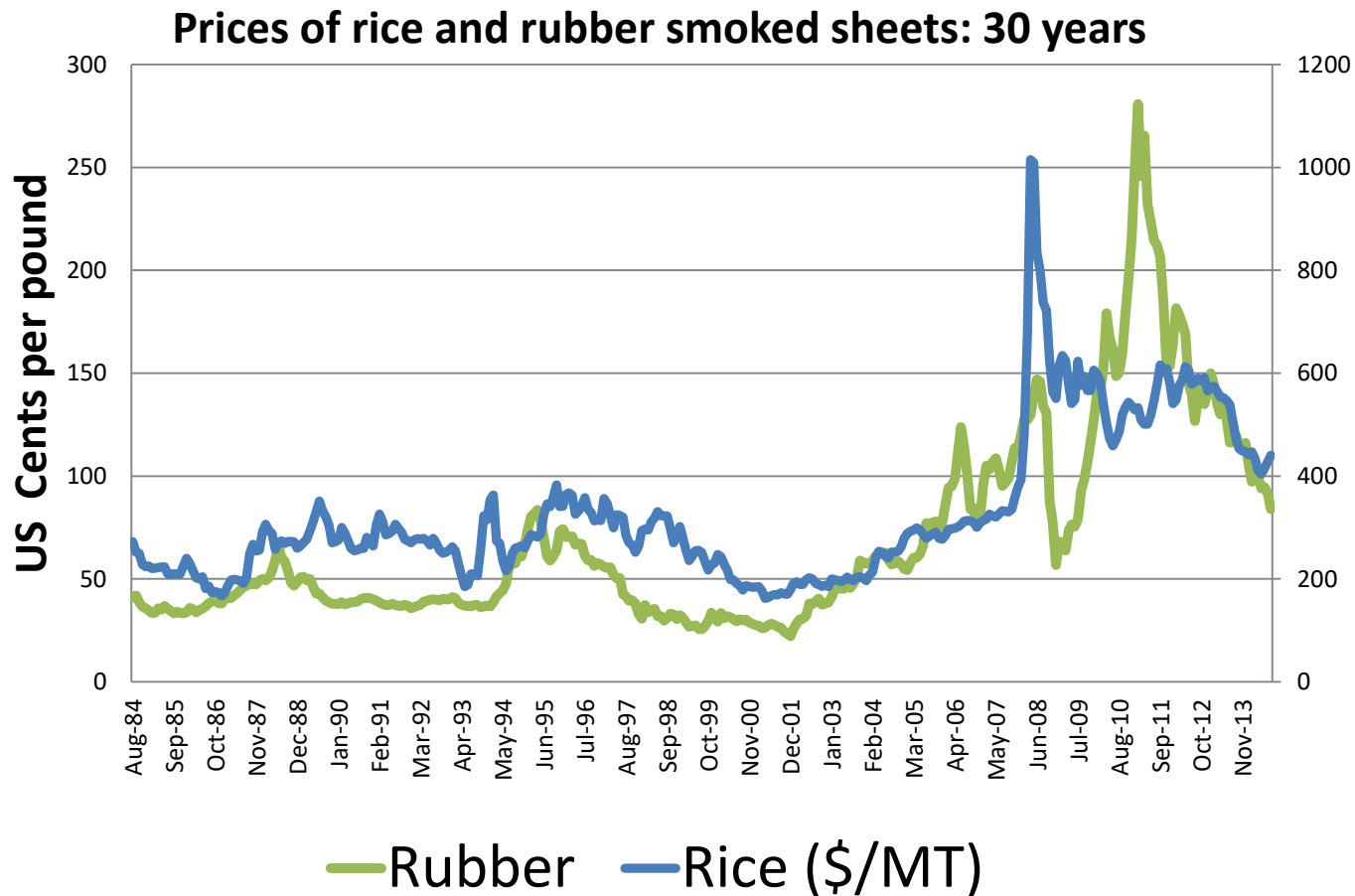


# The lucky year for Thai farmers: 2008

## Global Food Crisis

- Thai rice farmers only managed to get good prices in 2008 because 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 them in terms of prices, because..

A long run relationship (cointegration) between the rice and rubber prices (correlation coefficient = 0.72)



# Agflation 2008

## (Agriculture + inflation)

- A wide range of factors has been blamed for the hike in food prices in 2008.
- *Culprits include slowdown in agricultural productivity growth, climatic and weather-related factors, rising food demand from China and India, higher oil prices and demand for bio-fuels, speculative behavior in financial markets, hoarding, falling grain stocks, dollar depreciation, low interest rates, among others.*

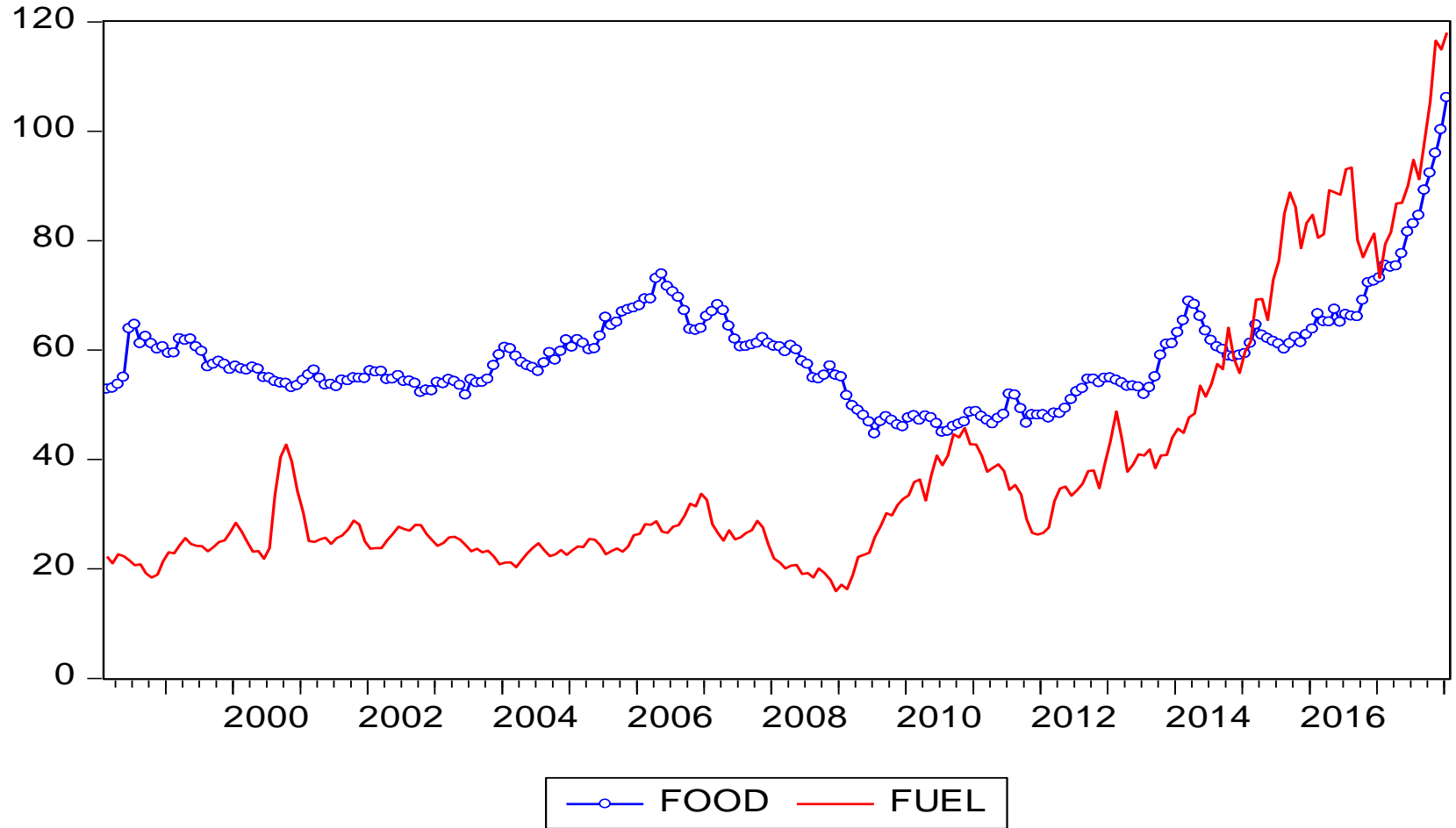
# Agflation 2008 (Agriculture + inflation)

- Alas, the spectacularly high price of rice did not last long.
- Because of food security reasons, some countries maintain high level of grain stocks
- The higher the imported grain dependency, the higher the risk of food insecurity.

# From booms to busts

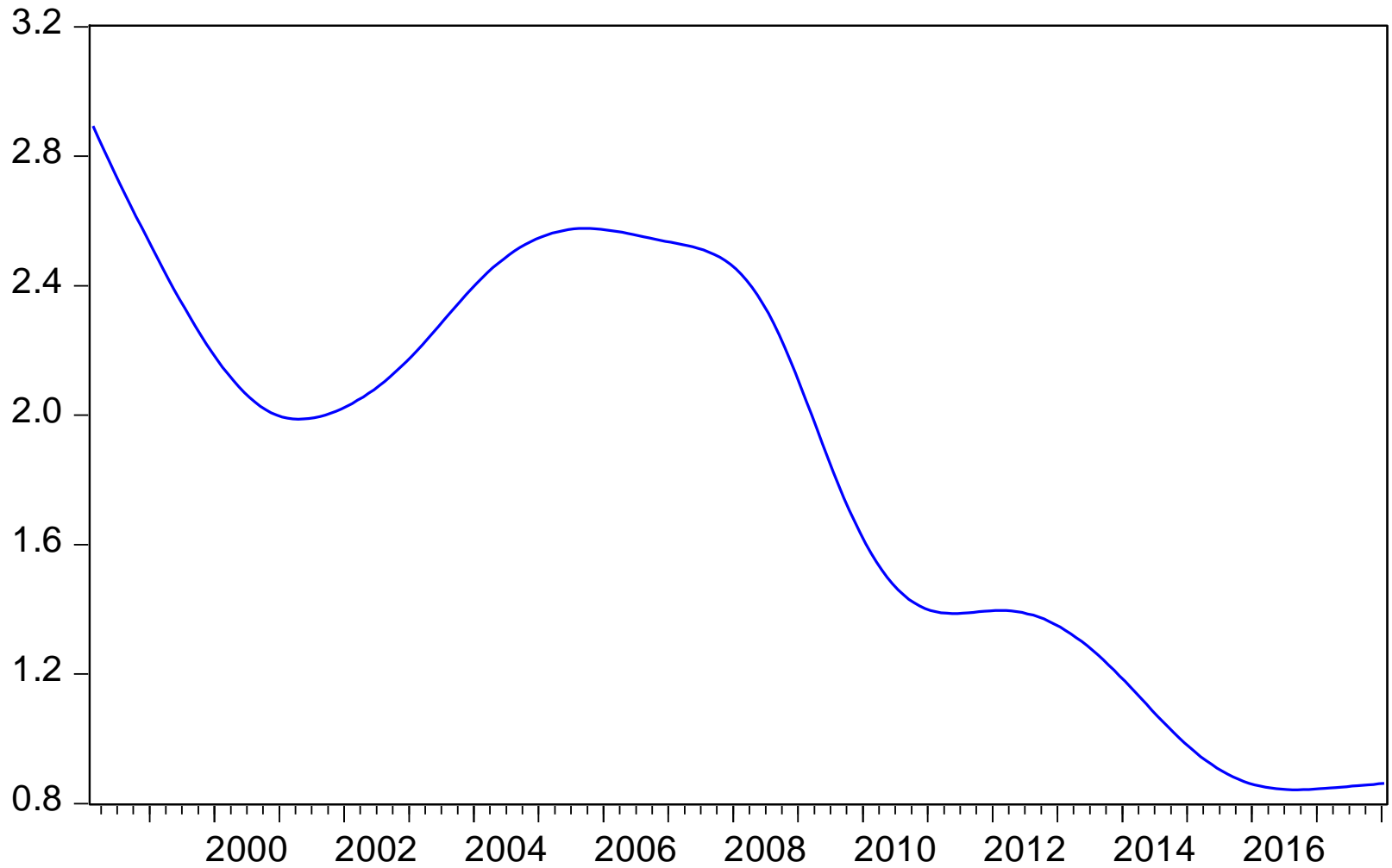
- From the second half of 2008, global attention shifted from food shortage.
- The eruption of the global financial crisis and slide of the global economy into recession raised fears that the world economy would plunge into another Great Depression.
- One consequence of the global recession has been a fall in world commodity prices that has also affected food commodity prices.

# Commodity Fuel (energy) Index, 2005 = 100, includes Crude oil (petroleum), Natural Gas, and Coal Price Indices



Source: Mundi index

## TERMS OF TRADE (Food vs Fuel)



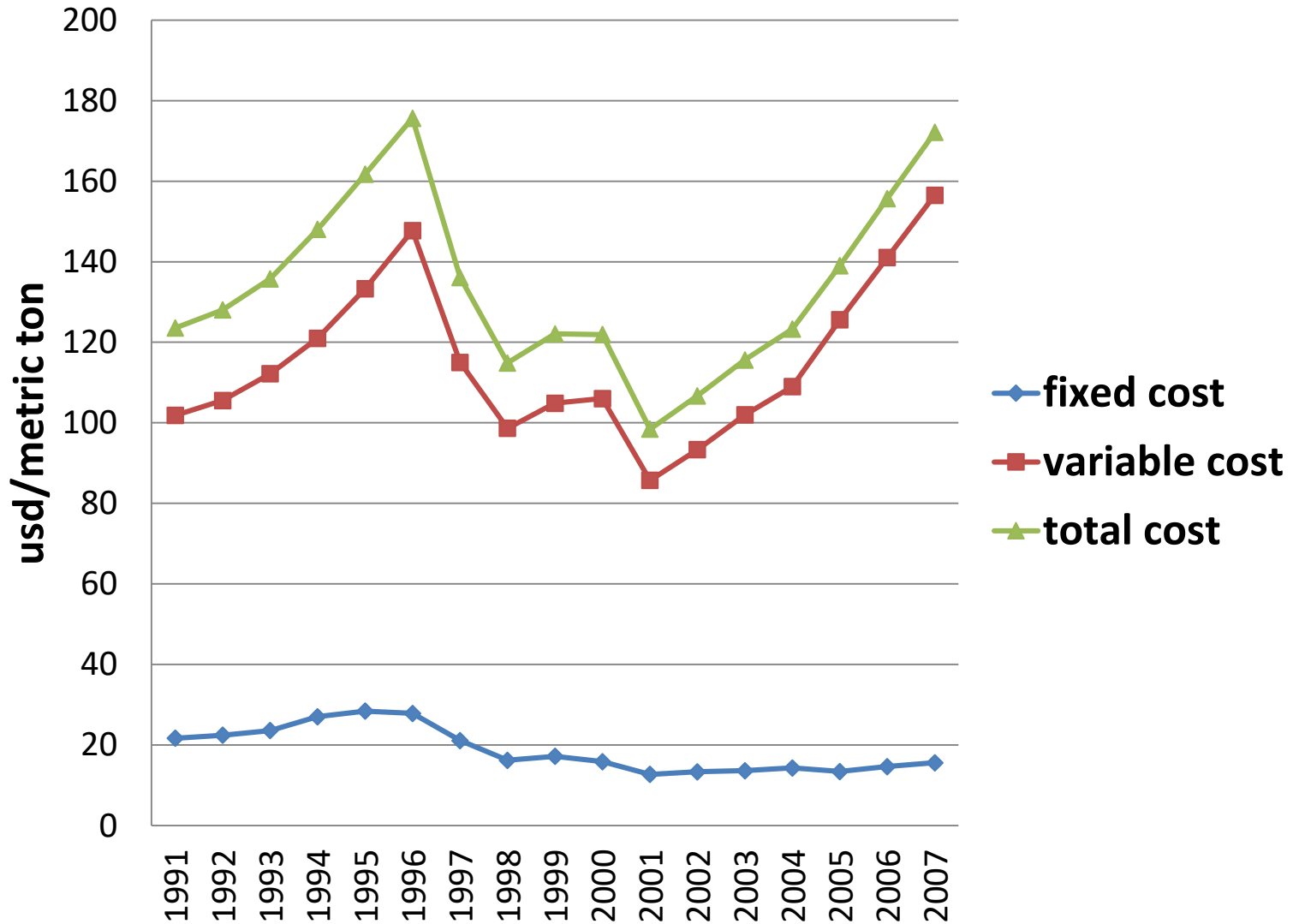
# Since you cannot control your product's prices, you must control your cost

- The fall in food prices (and the decline in oil prices) mitigated immediate concerns about large-scale food security.
- Our focus is now on cost control of food production.
- Total cost of farm products is dictated by variable costs.
- What are fixed and variable cost in rice production?

# Transplanting rice in Chaiyaphum



## Cost of paddy production in Thailand



# Fertilizer application



# Pesticide spraying



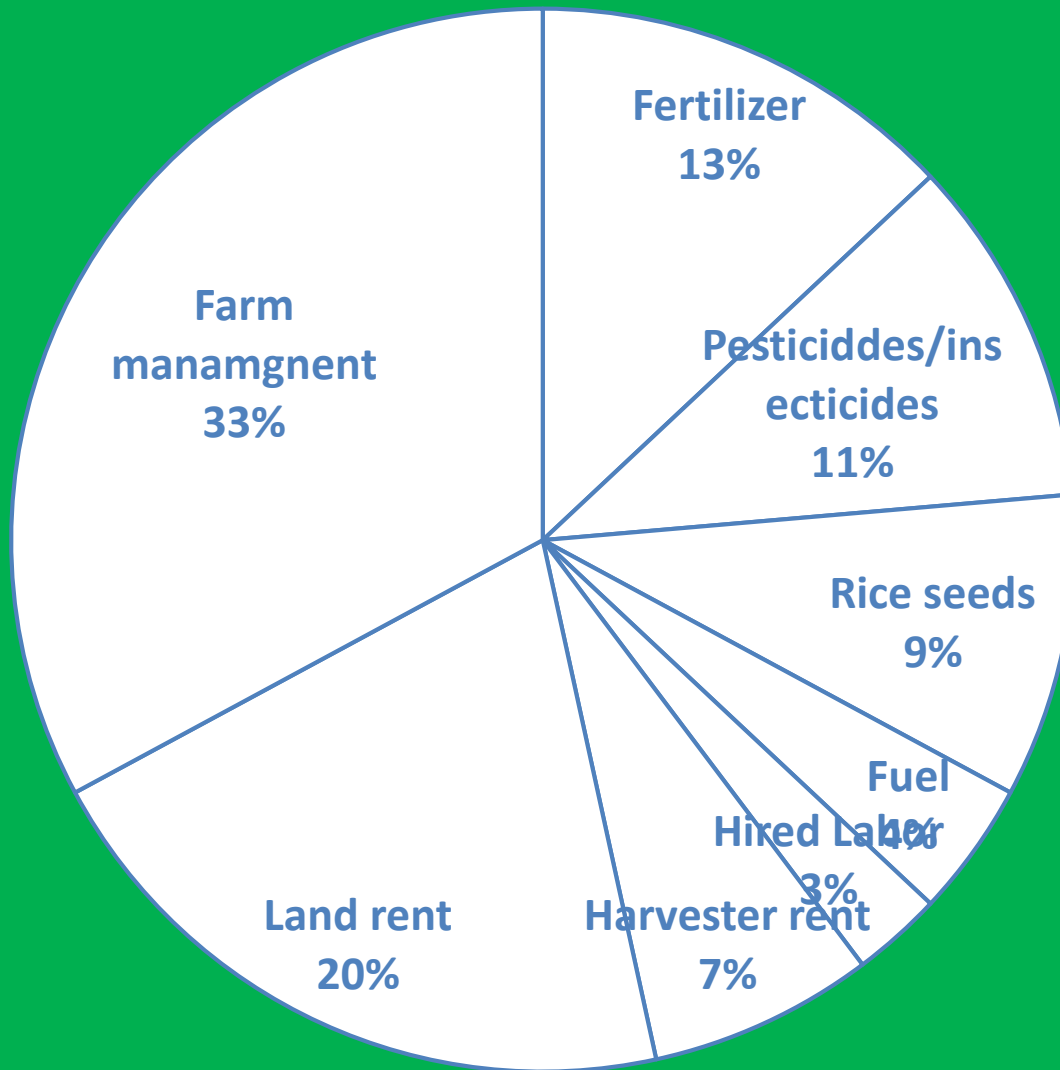
In this 2012 file photo farmers spray pesticide over a paddy field in Ayutthaya province, Thailand. REUTERS/Sukree Sukplang

# Cost of chemical farming: 2010

(baht /rai)

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

## COST STRUCTURE OF RICE FARMING



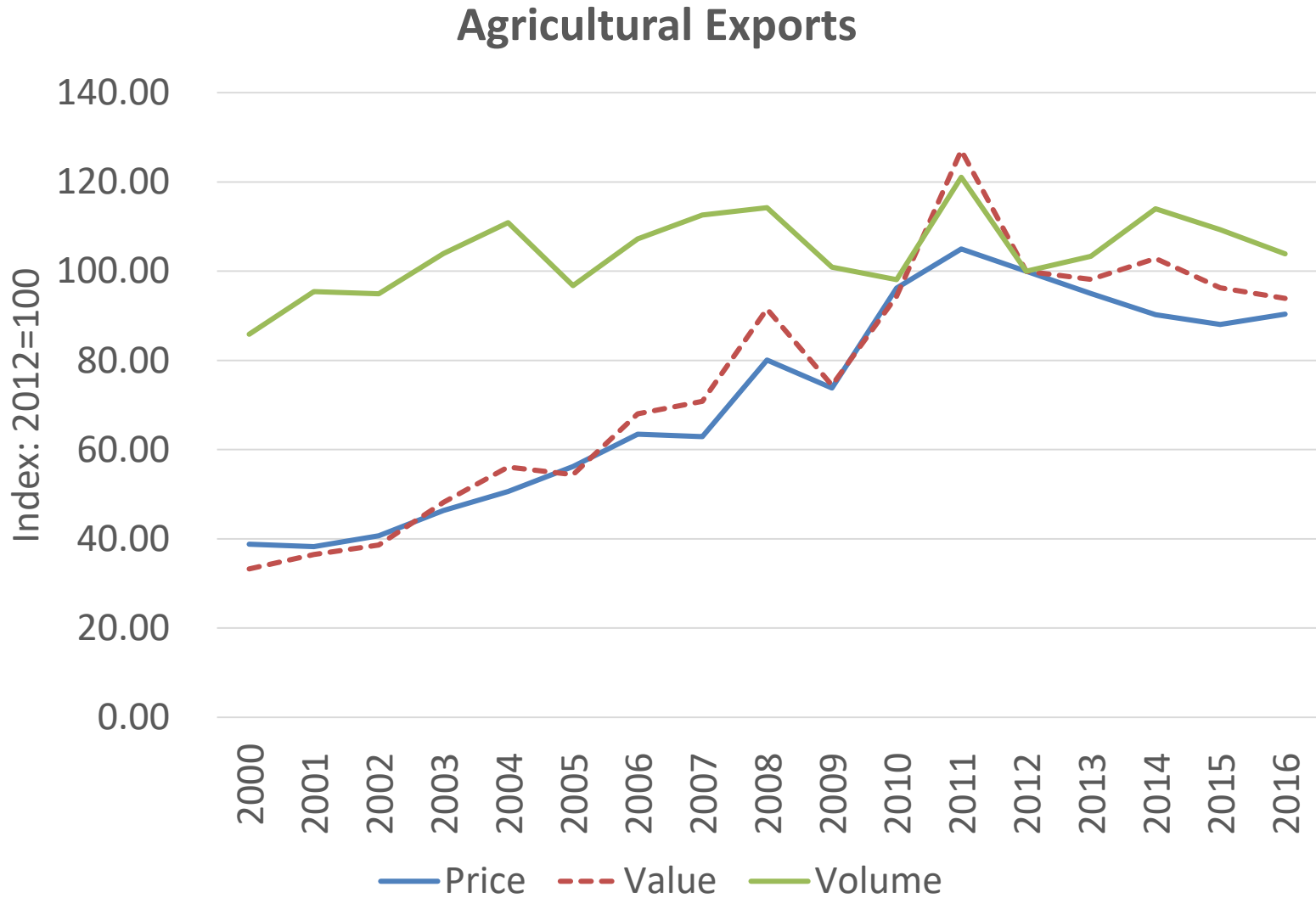
# Disappearing buffaloes



# Dwindling number of Thai buffaloes

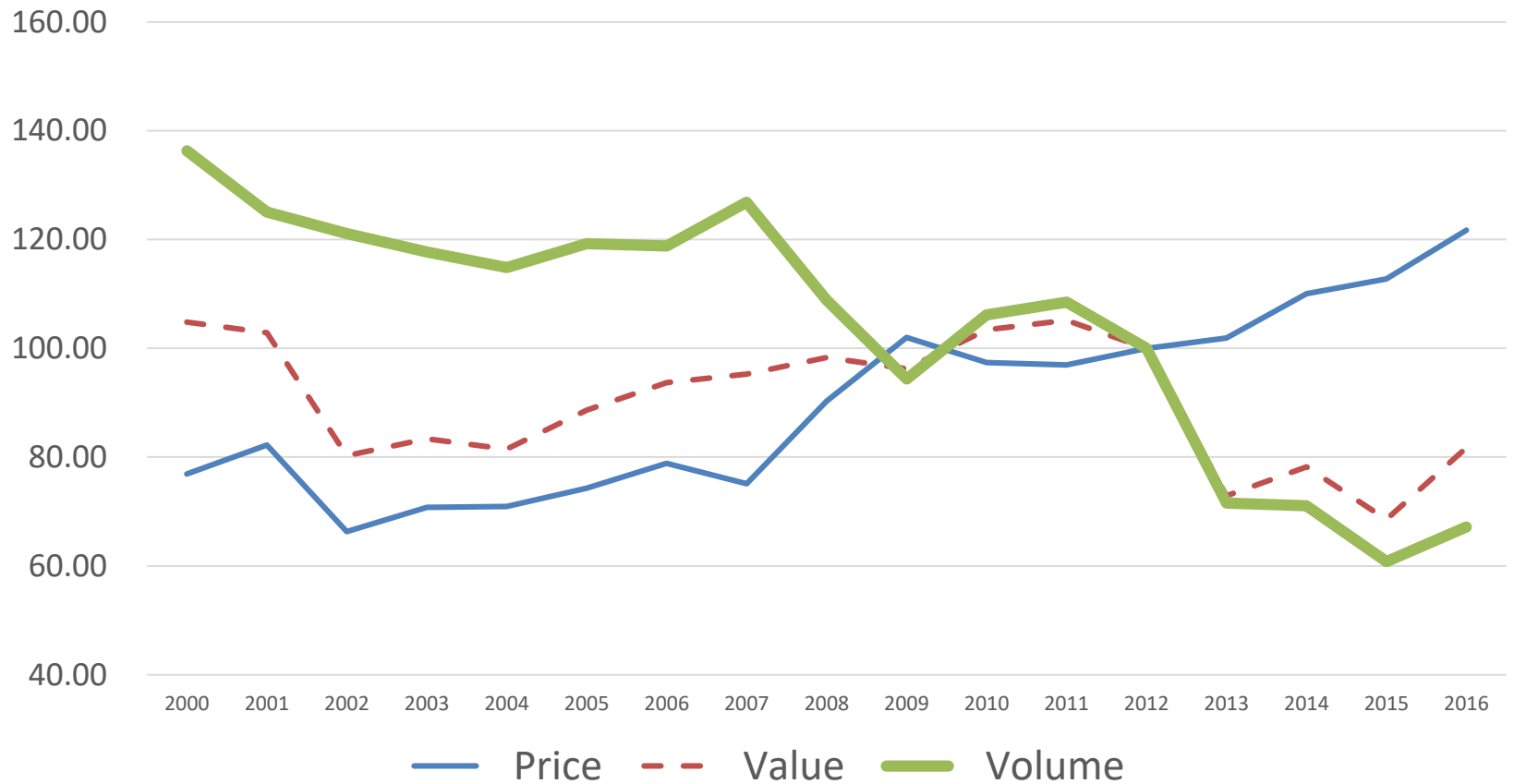
- From the last decade, the number of buffaloes declined from 1.5 million to 840,000 heads, representing 56 % decline from 2004,
- Due to disappearing animal farm land, smuggling, and slaughtering of mother buffaloes for meat consumption.
- Department of livestock proposed 5.6 billion baht budget for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

# The important role of prices

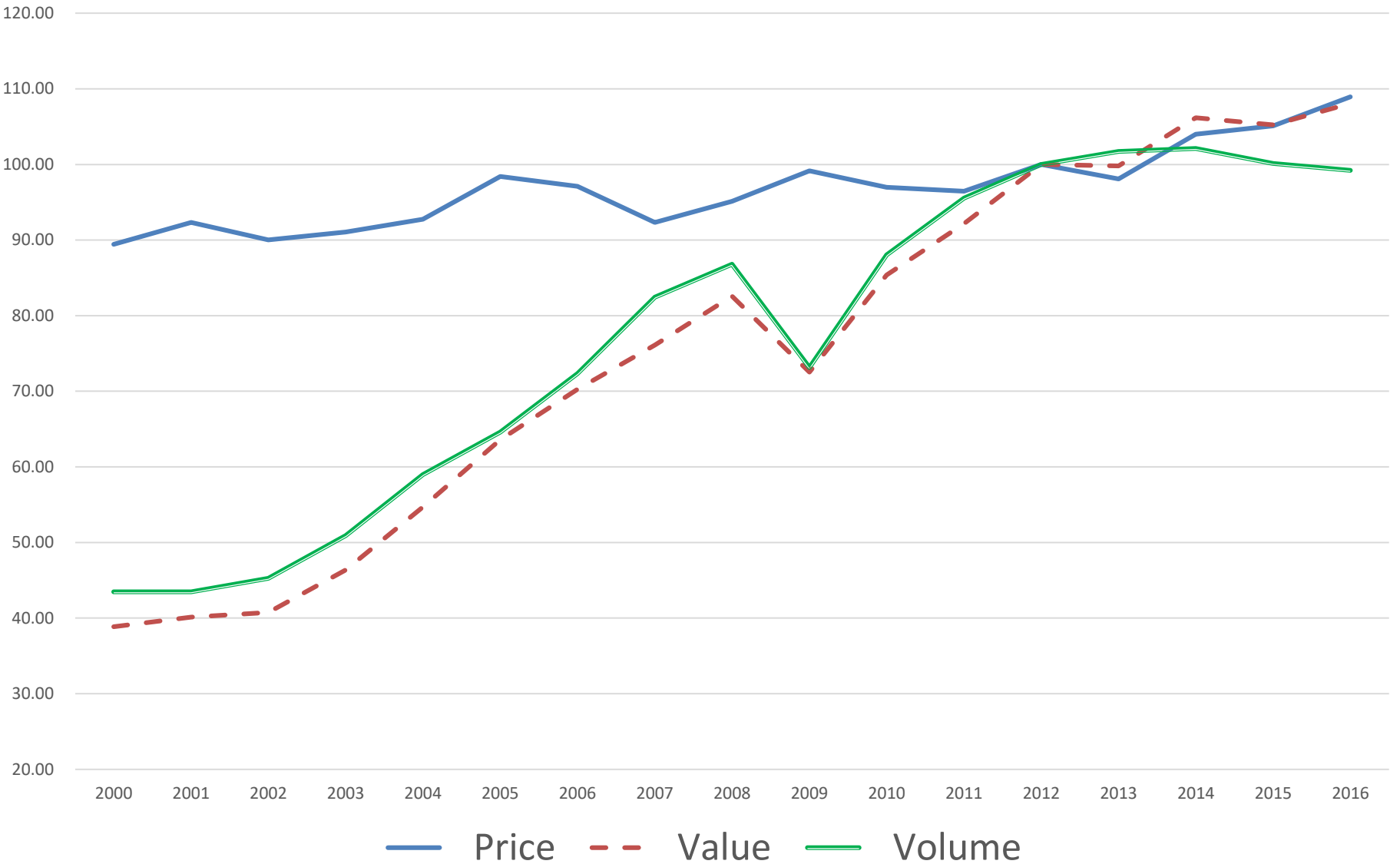


# Exports of fishery products: Supply Problems

## EMS (Early Mortality Syndrome) in shrimp farms



# Indexes of Manufactured Exports



# Correlation coefficients between export values (2000-2012)

	Price	volume
agriculture	.98	<b>.62</b>
manufacturing	.98	.99

# Supply and demand analysis

- Price elasticity of supply (higher in manufactured products)
- If both demand and supply of agricultural products are price inelastic, we observe more fluctuations in prices.
- A small country assumption can be applied for some products which Thailand has low market power.
- Price elasticity of demand depends on availability of substitutes.
- The more narrowly defined commodities, the higher the price elasticity (because of availability of substitutes)

# Innovation and competition

- 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 has 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.
- The LSU rice breeding took 12 years to obtain a long-grain rice with good milling quality, high yield and the correct Jasmine aroma and flavor.

# Jasmine vs. jazzman

- Consumers and Asian restaurants in the US may shift to serving Jazzman rice as it tastes the same as Thailand's jasmine rice but is cheaper.
- Another challenge is the yield differences:
- **1260** kilograms per rai of Jazzman rice, compared to
- **400** kilograms of Thai jasmine rice production.
- What will be the impact on the elasticity of Thailand's export demand for Jasmine rice?

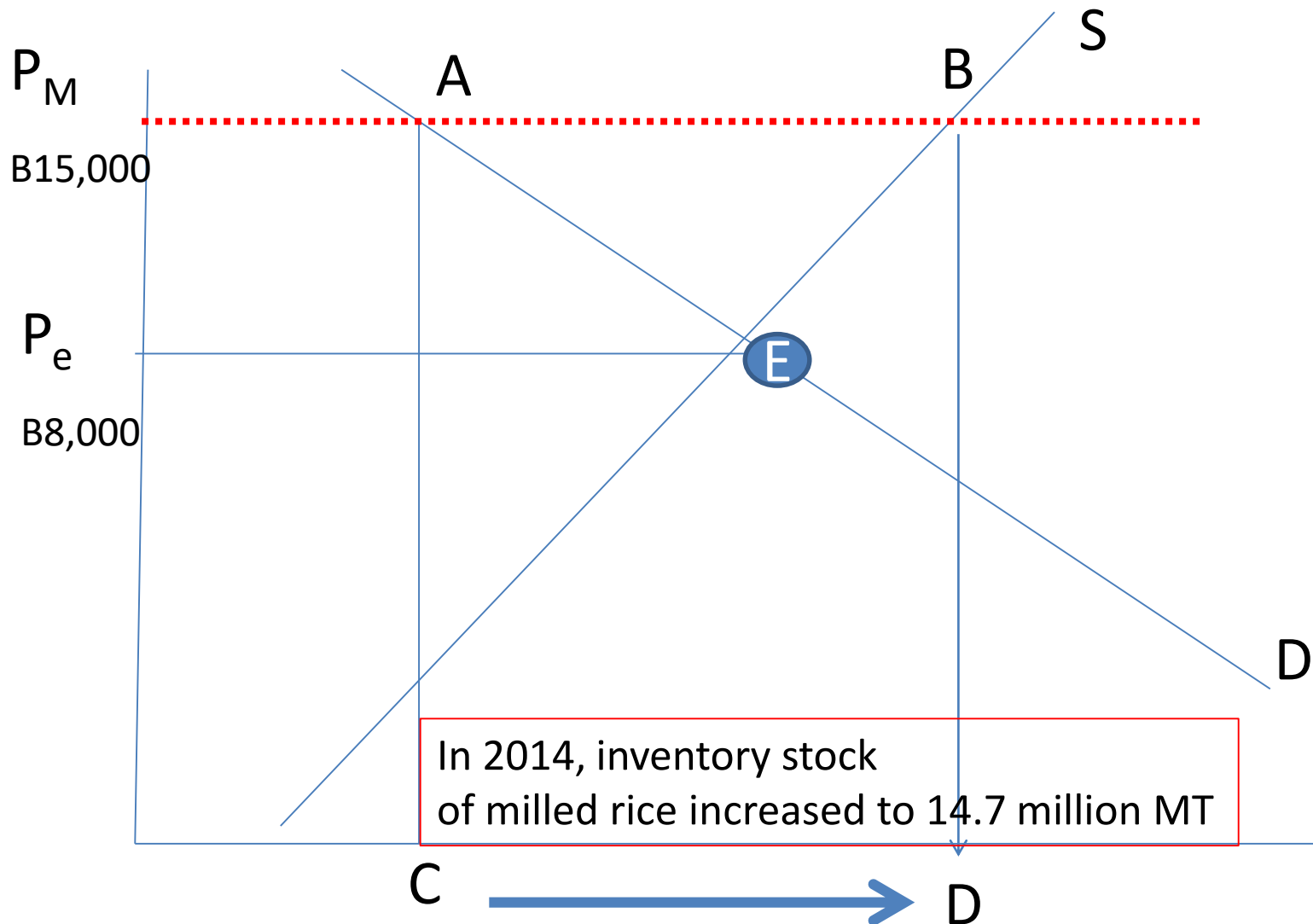
# “Jasmine” rice from Vietnam and Cambodia

- 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 %.

# 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 grains from farmers above market prices to boost domestic prices and to lift rural incomes.
- Analytical diagram (Area ABCD)

# Mortgage Price Support Program for paddy rice



# Consequences of the rice mortgage scheme

- 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 prices**.
- The government rice inventories reached 14.7 million tonnes in 2014, compared with 6.1 million in 2010.
- Storage cost and steep depreciation rate of old rice stock
- Smuggled rice from neighboring countries
- Loss of international competitiveness

# Good intention, bad outcomes

- The government had good intentions in helping farmers earn more from their crops even though it also expected 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.
- Others have benefited much more than the farmers, such as millers, brokers, corrupt politicians and officials.

# How the rice mortgage system works And why it did not work as planned

- 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 interests to BAAC.
- But there was a technical glitch, 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...

# From The Nation: February 20, 2015

- Public prosecutors indicted ex-PM Yingluck Shinawatra on February 19, 2015 for negligence and filed criminal charges at the Supreme Court.
- The charges stem from the Yingluck government's controversial rice-pledging scheme, which caused Bt600 billion losses to the state.

# Who is afraid of S44?

Meanwhile, government spokesman Sansern Kaewkamnerd said Ms Yingluck would be prosecuted for failing to deal effectively with the 2011 floods, the worst to hit the country in six decades.

In addition to poor management of the flooding, her government's response was marked by questionable spending, he said.

Ms Yingluck, whose government was overthrown in the military coup of May 2014, is facing prosecution in as many as 15 cases of alleged wrongdoing. They include her government's issuance of a passport to her brother, the fugitive former prime minister Thaksin Shinawatra; undue influence on a military reshuffle; the transfer of a former secretary-general of the National Security Council; 7.5 million baht in individual compensation for people affected by political unrest in 2009-10, and illegal assistance for people prosecuted for political crimes.

All money is gone, and so is she..



# In 2015, Thai government set \$240 million budget to combat drought

**Source: Reuters - Wed, 18 Feb 2015**

- Thailand's cabinet has approved a 7.8 billion baht (\$240 million) budget to alleviate drought in the country and tackle "water emergencies"
- Thailand is battling drought in eight of its 76 provinces.
- The cabinet approved a 7.8 billion baht budget to be disbursed for 1,712 projects and to be used for water emergencies
- The funds would be used to provide mobile water tanks and to install water pumps in affected areas,

# Bangkok Post: October 21, 2016

- The government controls 8.4 million tones of rice, half of which is good quality and the rest is only suitable for industrial uses.
- The quantity of rice stocks has fallen from 18.7 million tones accumulated through various rice-pledging schemes in 2011-14.
- Since May 2014 coup, 8.6 million tones has been sold in 18 auctions, fetching 89 billion baht. G-to-G rice deals have unloaded 3.8 million tons worth 50 billion baht.

# Cash handouts to rice farmers who delayed selling their crops for six months

- In September 2016, the National Rice Policy Committee, chaired by the PM, approved measures to prod farmers to delay rice sales.
- The measures include 1,000 baht per rai in cash handouts to rice farmers, plus a 4% interest rate subsidy worth of combined 1.24 billion baht to millers and agricultural cooperatives that agree to hold rice in their warehouses for six months.

# Cassava: Another subsidized crop



## How to subsidize cassava farmers in 2015

### Incentives for good deeds: low cost interest rate

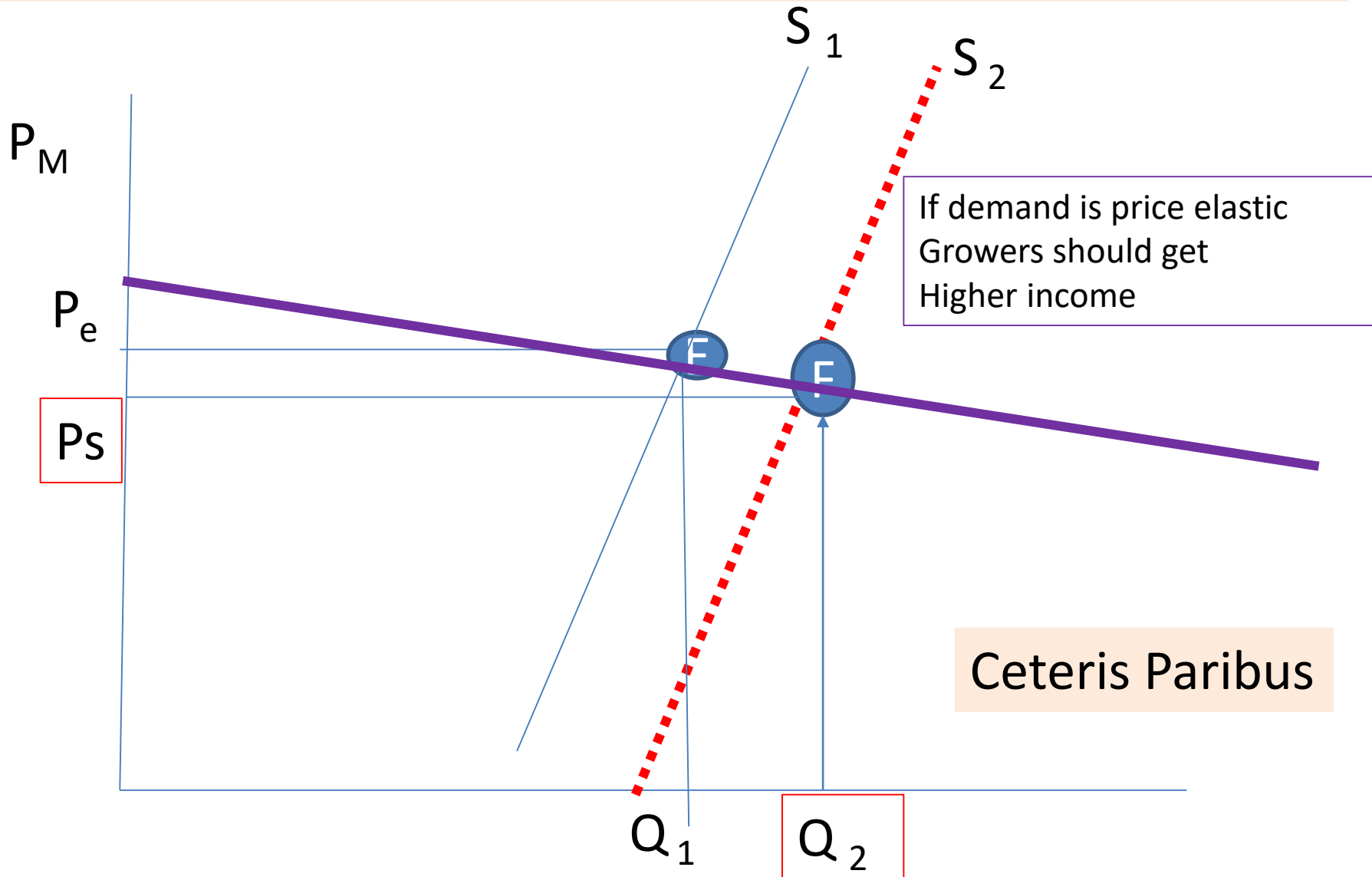
- In January 2015, the cabinet approved 2,760 million baht to subsidize 3 % interest rate for BAAC's 50,000 baht loan for each farmers who **postpones harvesting** in order to push up the price to 2.80 baht/kg at the beginning harvest season.
- The interest subsidy at 3% also goes to processing factories, 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.

How to subsidize cassava farmers in 2015

Incentives for good deeds: low cost interest rate

- This is a desperate attempt to raise the price during the ample supply reason through raising artificial demand and restraining supply of cassava to the market at the harvest season.

# To subsidize inputs for cassava growers



# Another 1.2 billion baht subsidy: 2016

- Ministry of Commerce (September 2016) sought Cabinet approval for a Bt1.2-billion budget to help 500,000 cassava farmers,
- Bank for Agriculture and Agricultural Cooperatives (BAAC) released Bt20 billion loans to help increase financial liquidity for farmers.
- The Bt1.2-billion budget used to pay the 1.5 per cent interest rate for 500,000 cassava farmers for 24 months.
- (Another low interest scheme)

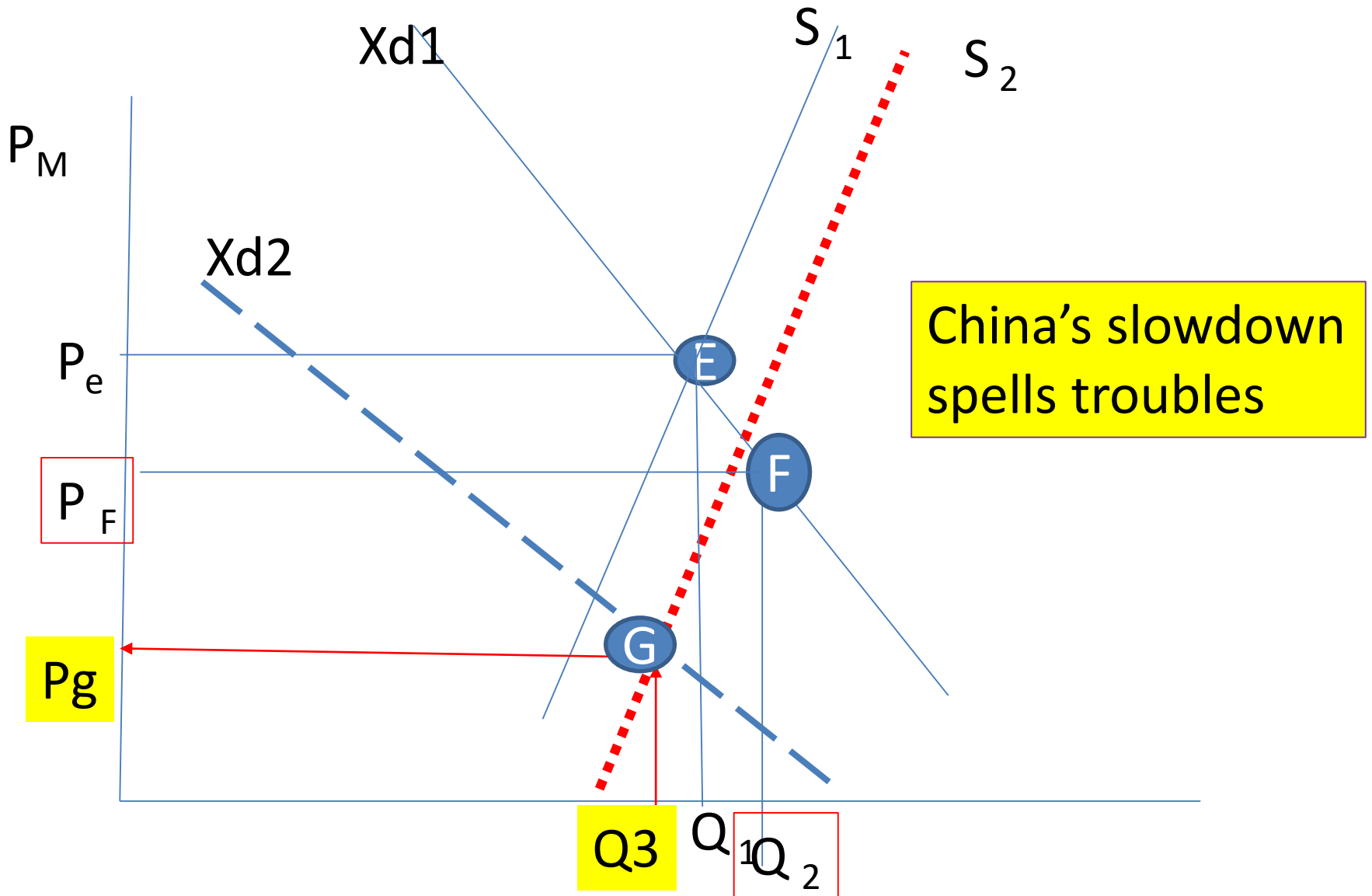
# Cheap loans for 500,000 cassava farmers

- In addition, the BAAC will **waive** interest of 1.5 per cent due from the farmers during the same period.
- The government also asked the BAAC to provide soft loans to help some 500,000 farmers.
- The budget allocation will cover soft loans of Bt20,000 to each farmer.
- Farmers will be charged an interest rate of only 0.5 per cent per month for the 12-month tenure of the loan.

# Bad news for cassava growers

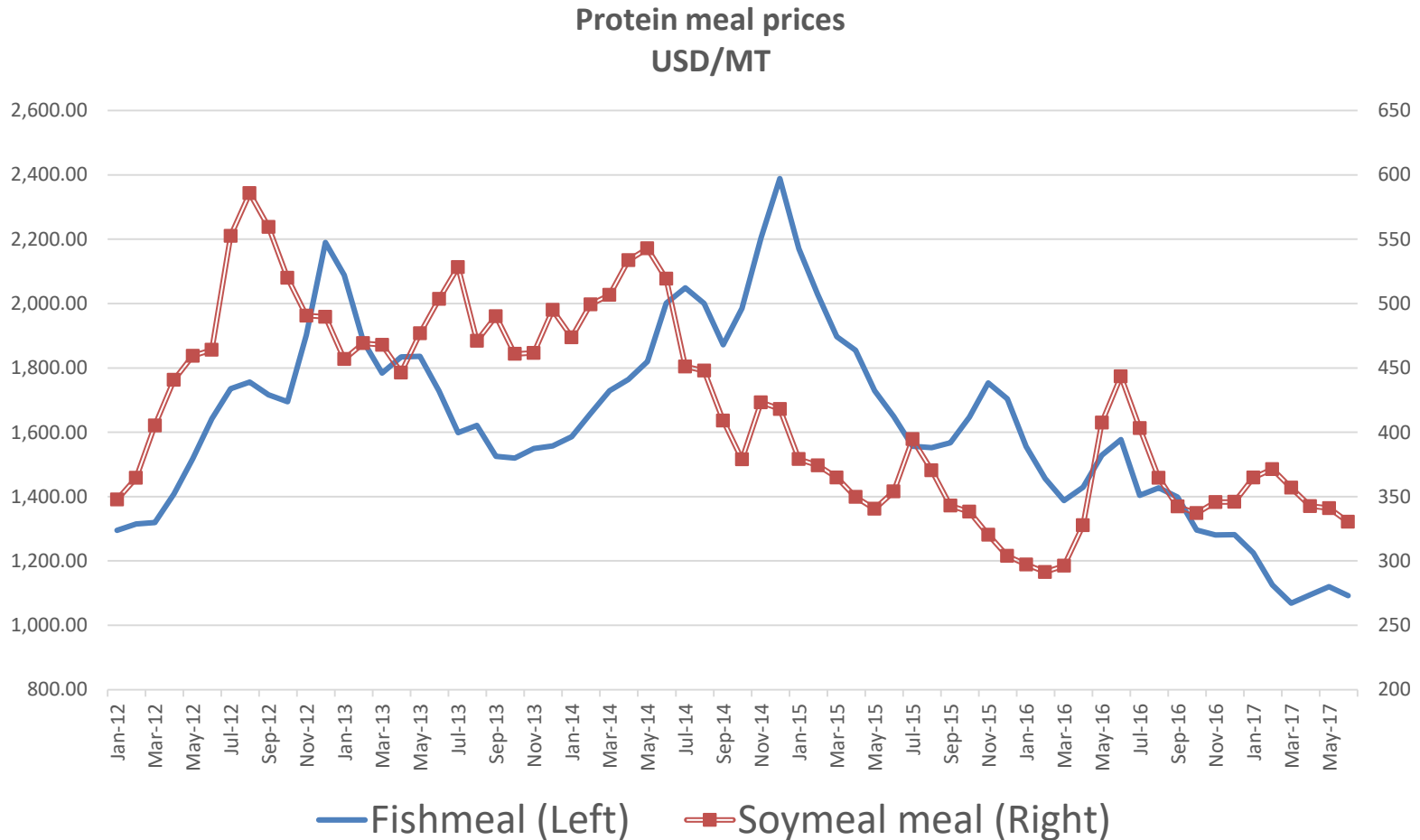
- In 2016, the export price of tapioca decreased 10 per cent from \$289 per tonne in 2015 to \$264.
- The government *has asked* tapioca traders to purchase cassava at Bt1.90 per kilo to protect farmers from the falling prices.
- Cassava is currently traded at Bt1.60 to Bt1.70 per kilogram, lower than last year's price of Bt2.50 per kilo.
- **It is estimated that cassava production in 2016 reached 31 million tonnes, of which 21 million tonnes grown from November to April.**
- ***But more supply does not mean higher export revenues.***

But other things do not remain unchanged: no more Ceteris Paribus assumption



# Declining prices of protein meal

Tapioca prices move in line with other protein meal used for animal feeds



In 2017, tapioca stock-export ratio is raised to 1.5/1

- The first 11 months of 2016, tapioca exports declined to 10.1 million ton (5.1 %) and 2.7 \$ billion (17.4 %)
- Previously, Ministry of Commerce required tapioca exports to maintain previous month of stock at least 50% of export quantity.
- The MoC reacted to falling the falling price by raising the required stock export ratio to 150% of exports.
- The idea is to raise the domestic demand for cassava to shore up the price level.
- What are the consequences of this scheme?

# Review 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 farm inputs?
- What should be a sustainable scheme to help farmers in the long run?