# Issues in Thailand's agriculture

Lecture 12

Bhanupong

# Main themes

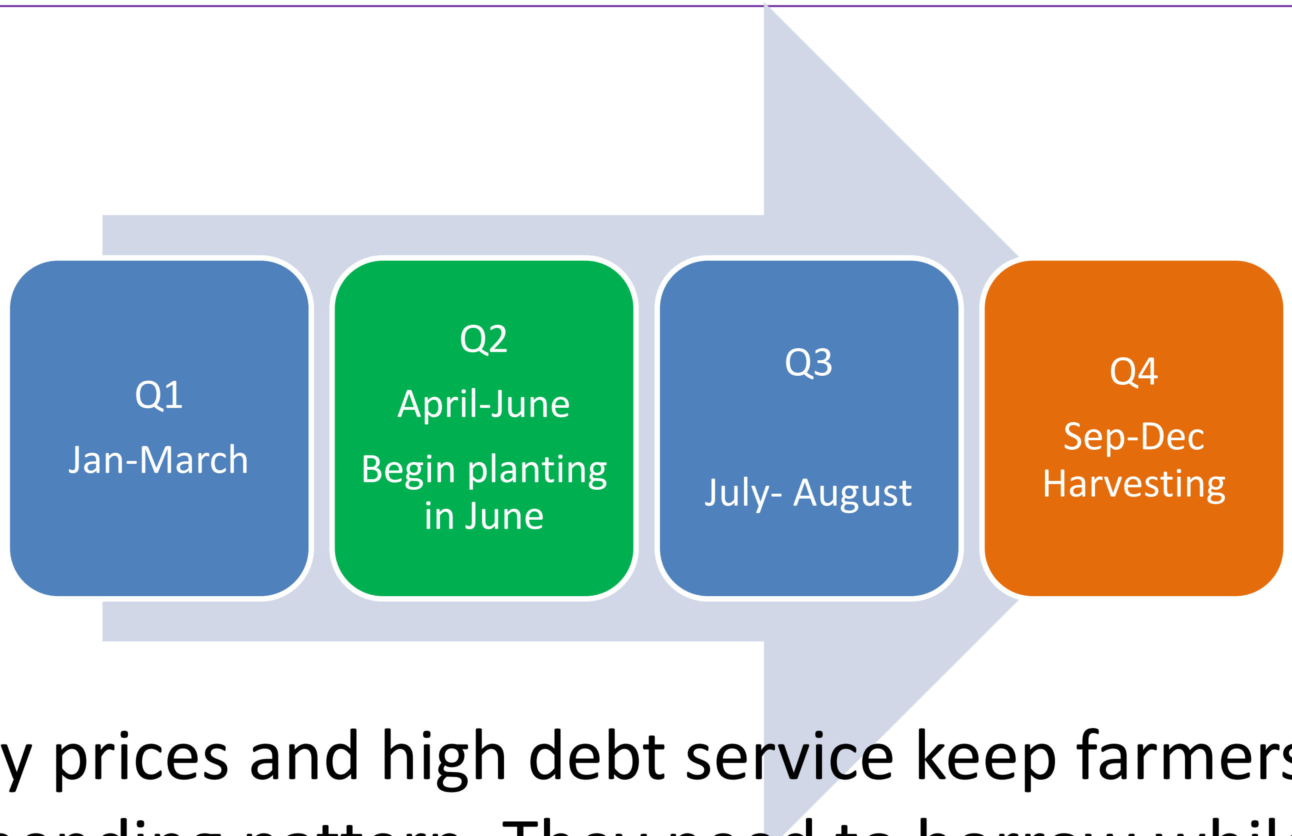
- Farm households' debt
- Declining agricultural prices
- Agricultural growth and volatility
- The rice-mortgage scheme
- Populism policy: agriculture subsidies
- A case study of cassava exports

# Farm household debt

- Thai farmers' debt remains high since they have to borrow money for 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.
- 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

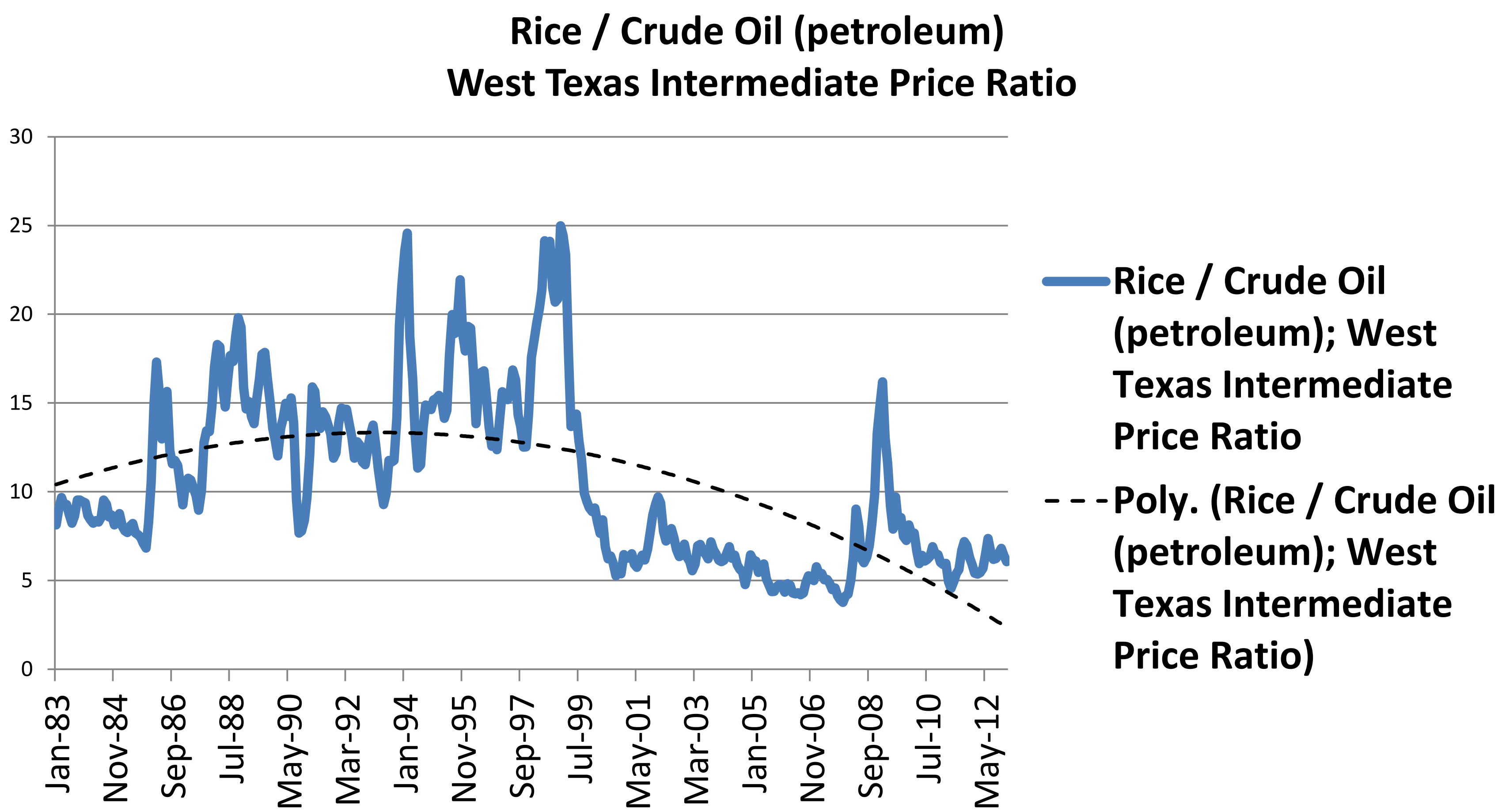
# Household debt (% GDP)

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

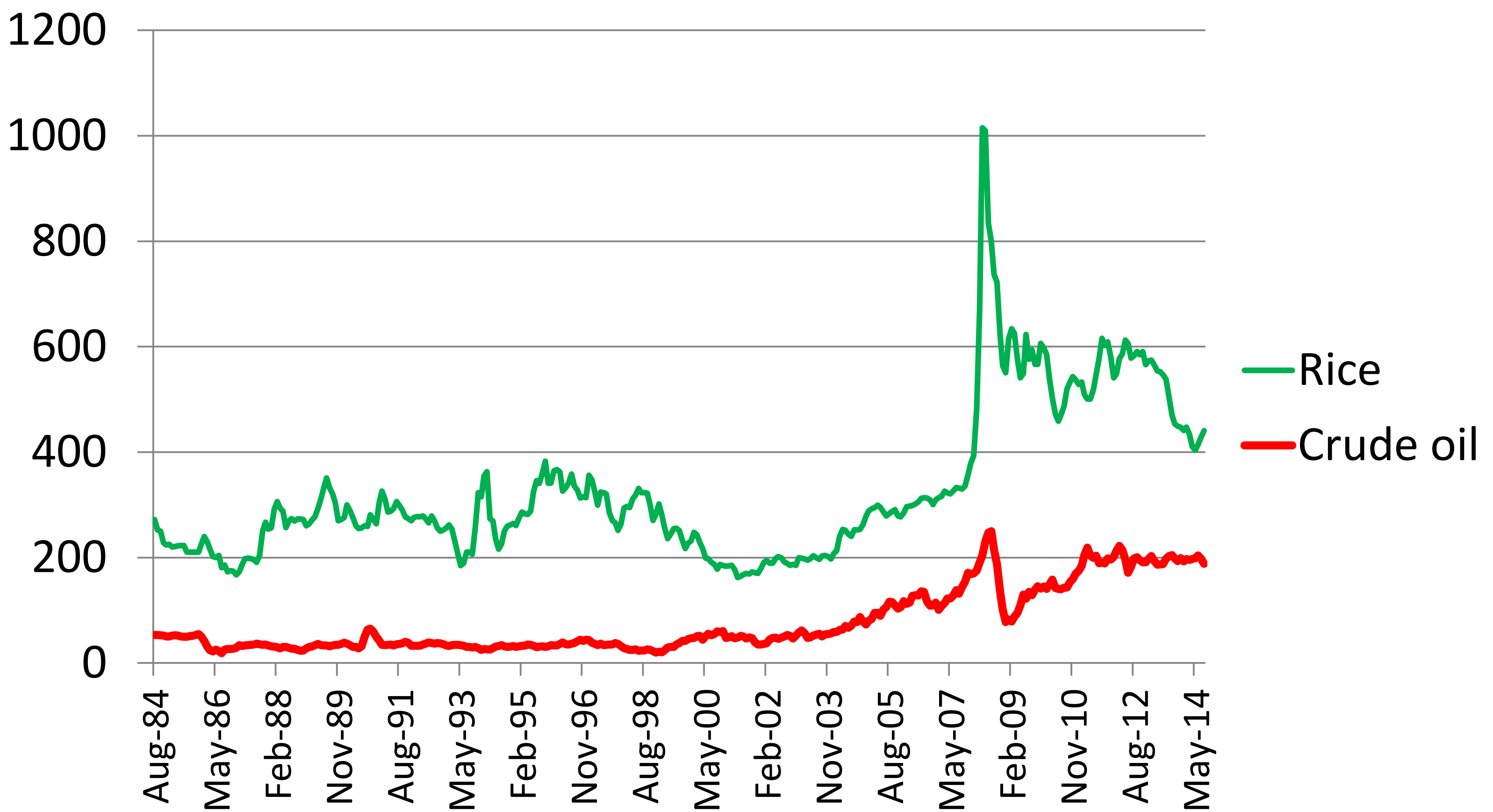



Low paddy prices and high debt service keep farmers from Normal spending pattern. They need to borrow while waiting For the time when they can sell paddy in Q4.

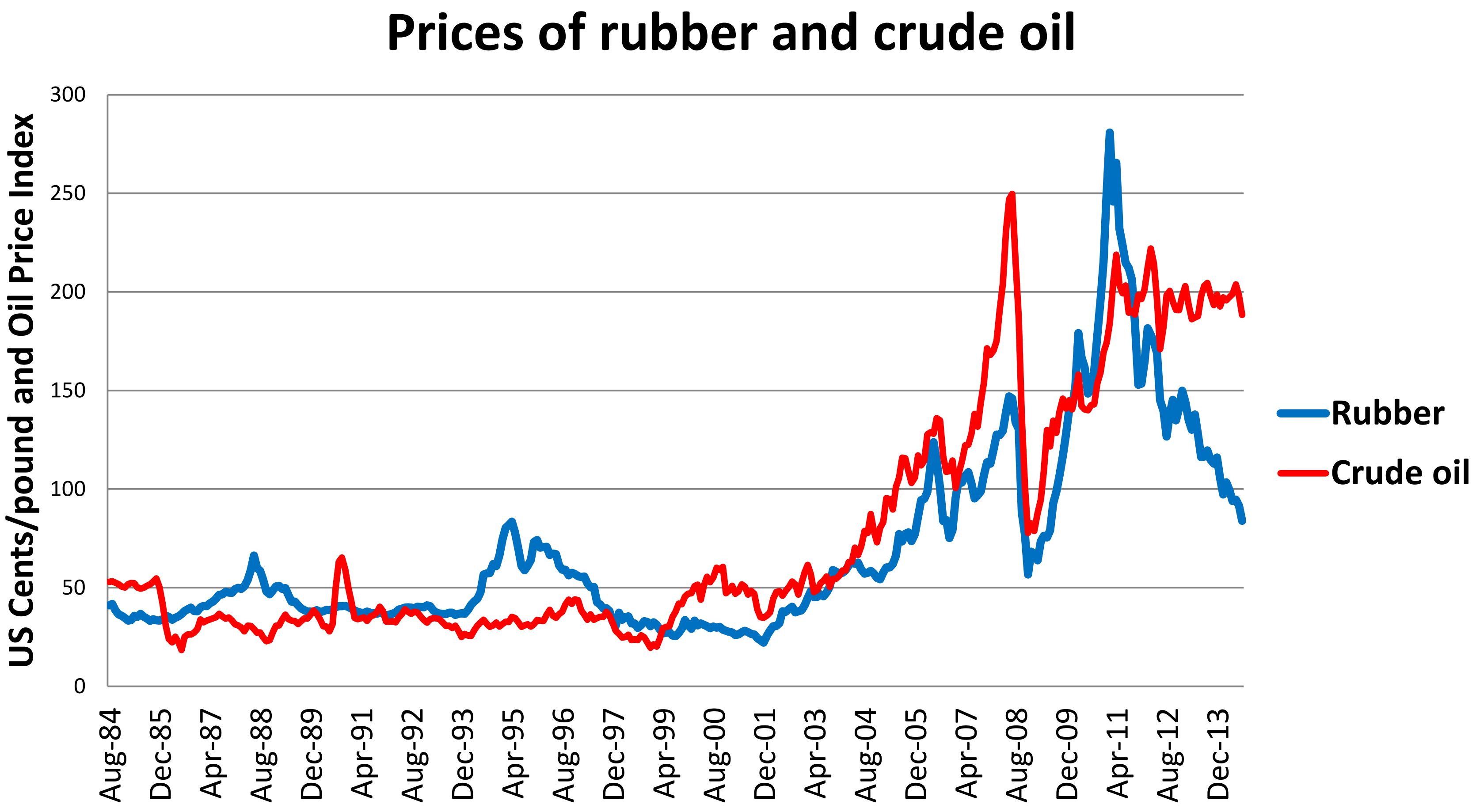
# Terms of trade have turned against Thai farmers



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



# High correlation

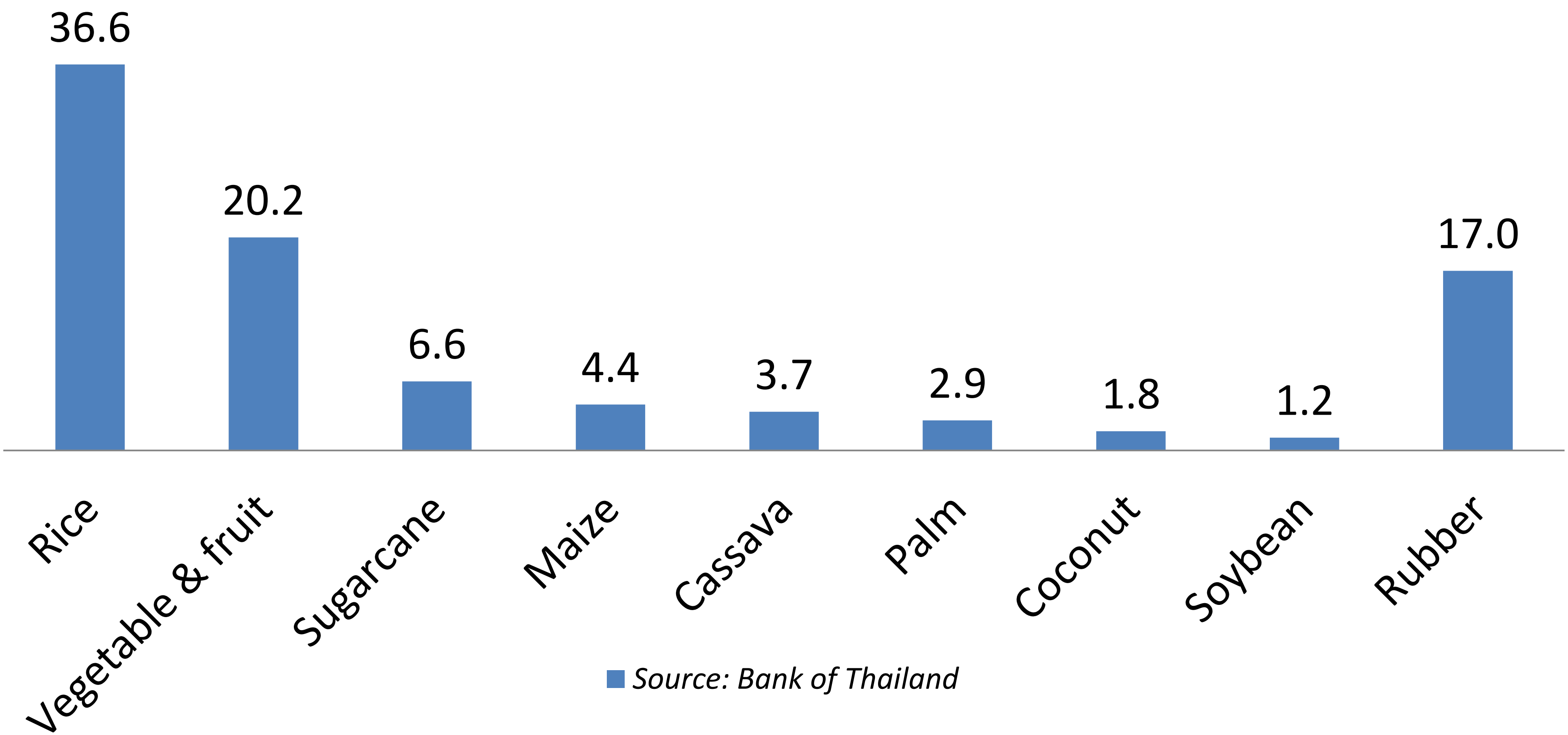


# Sectoral Growth Rates
# 2000-2011

| | STDV (1) | Average(2) | Coefficient of variation (1/2) |
|---|---|---|---|
| **Agriculture** | 3.9 | 2.8 | 1.42 |
| **non Agriculture** | 2.9 | 4.3 | 0.67 |
| **GDP Growth** | 2.6 | 4.2 | 0.63 |

*From 2012 to 2016, same conclusion?*

# Relative importance of each crop (weight in Crops Production index)

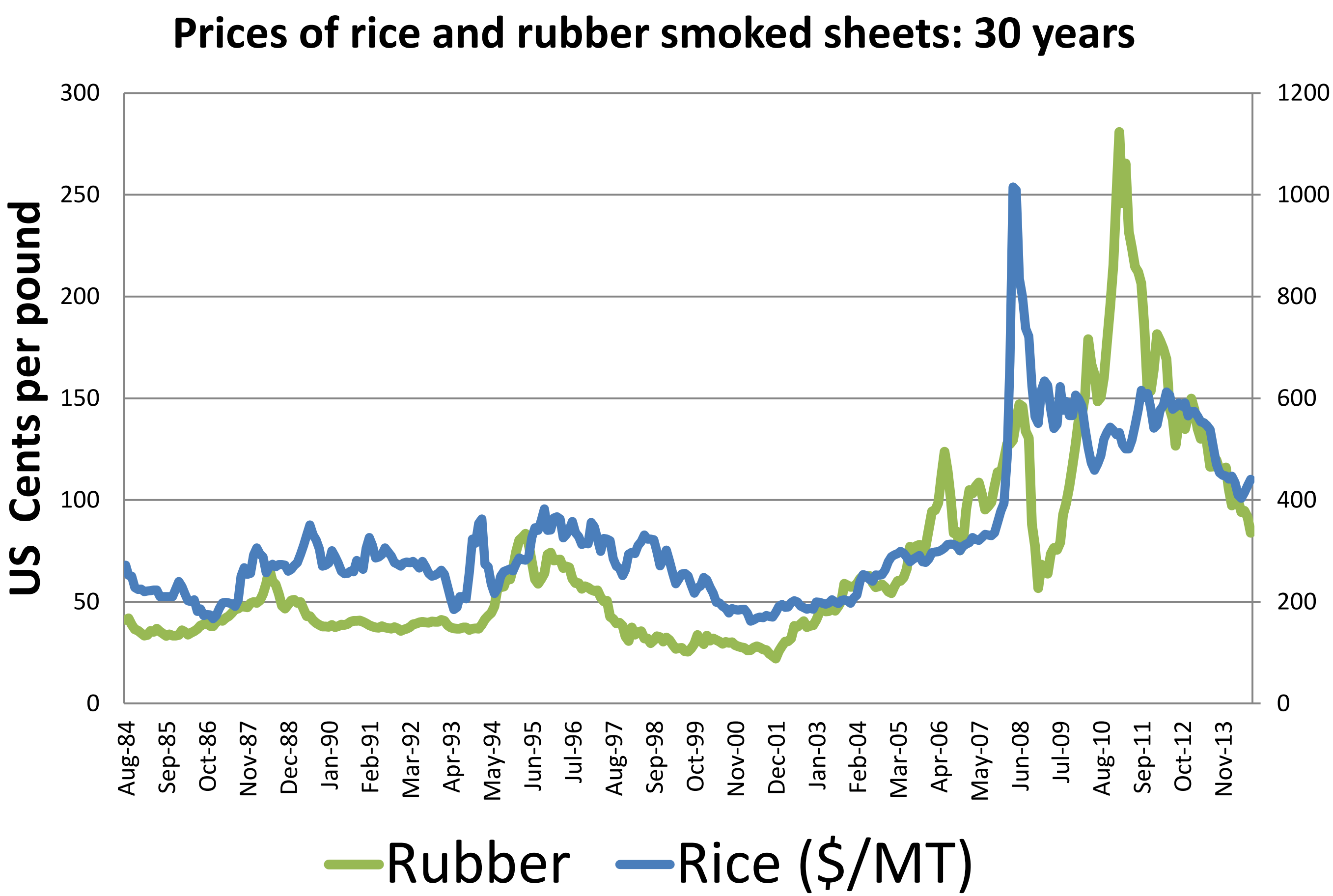


# The lucky year for Thai farmers: 2008

- 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..

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

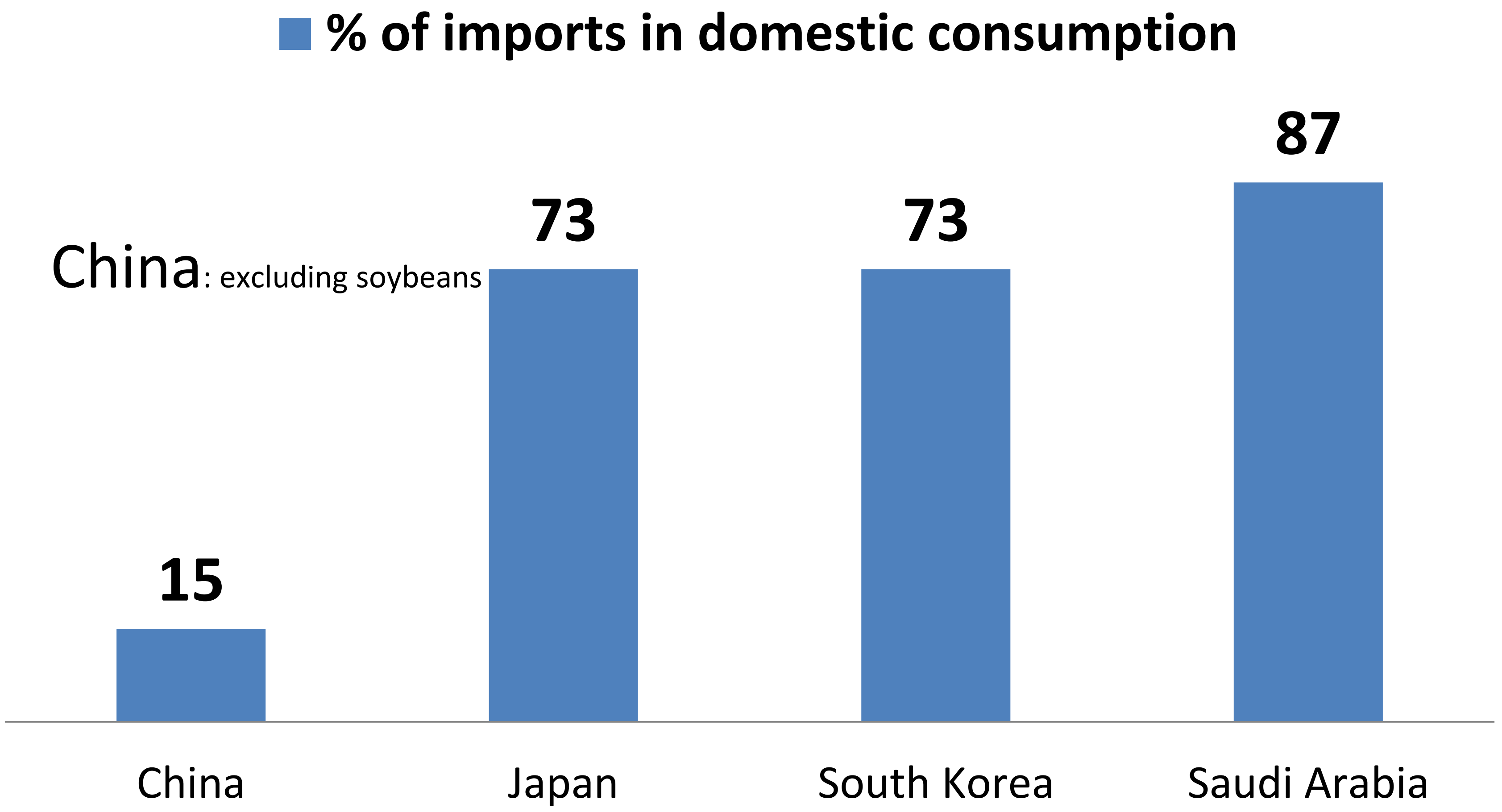
(correlation coefficient = 0.72)



# Agflation

- A wide range of factors has been blamed for the food price increases in 2008.
- 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.
- 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 food security risk.

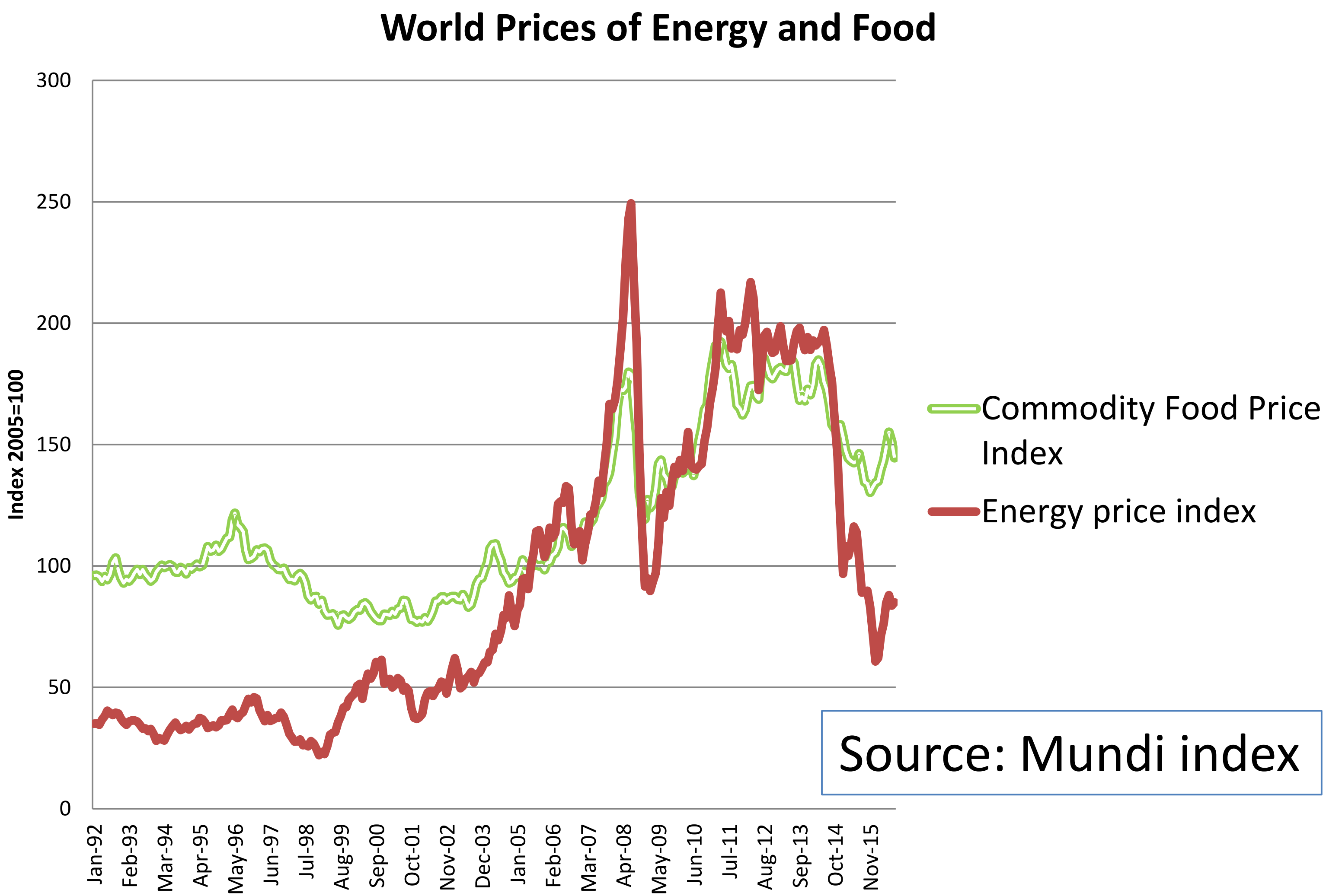
# Imported Grain Dependency



# From boom to bust

- 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 Food Price Index, 2005 = 100, includes Cereal, Vegetable Oils, Meat, Seafood, Sugar, Bananas, and Oranges Price Indices
Commodity Fuel (energy) Index, 2005 = 100, includes Crude oil (petroleum), Natural Gas, and Coal Price Indices

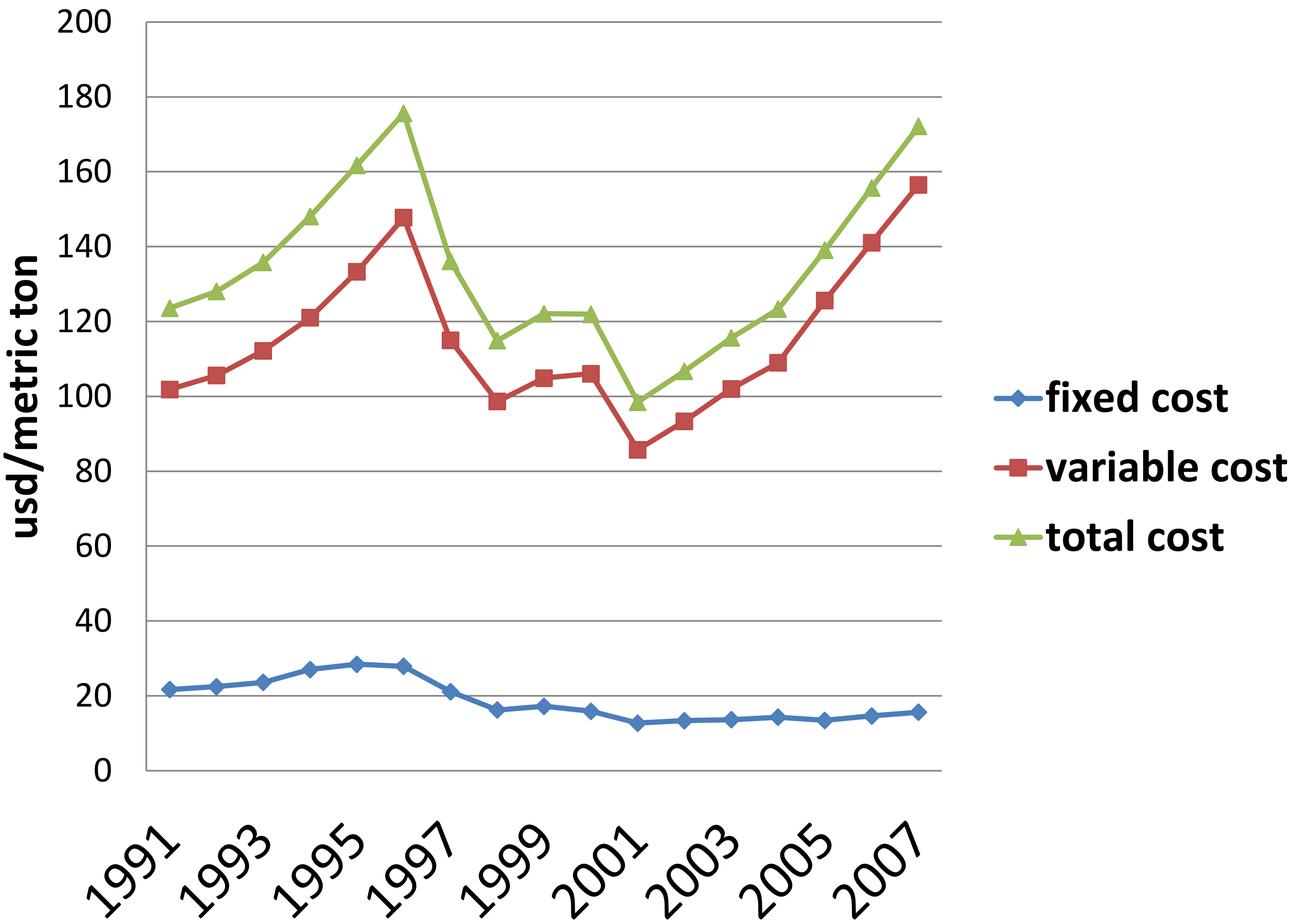



Source: Mundi index

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

- The fall in food prices (and the fall in oil prices) mitigated immediate concerns about large-scale food insecurity.
- 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?

# Cost of paddy production in Thailand



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)

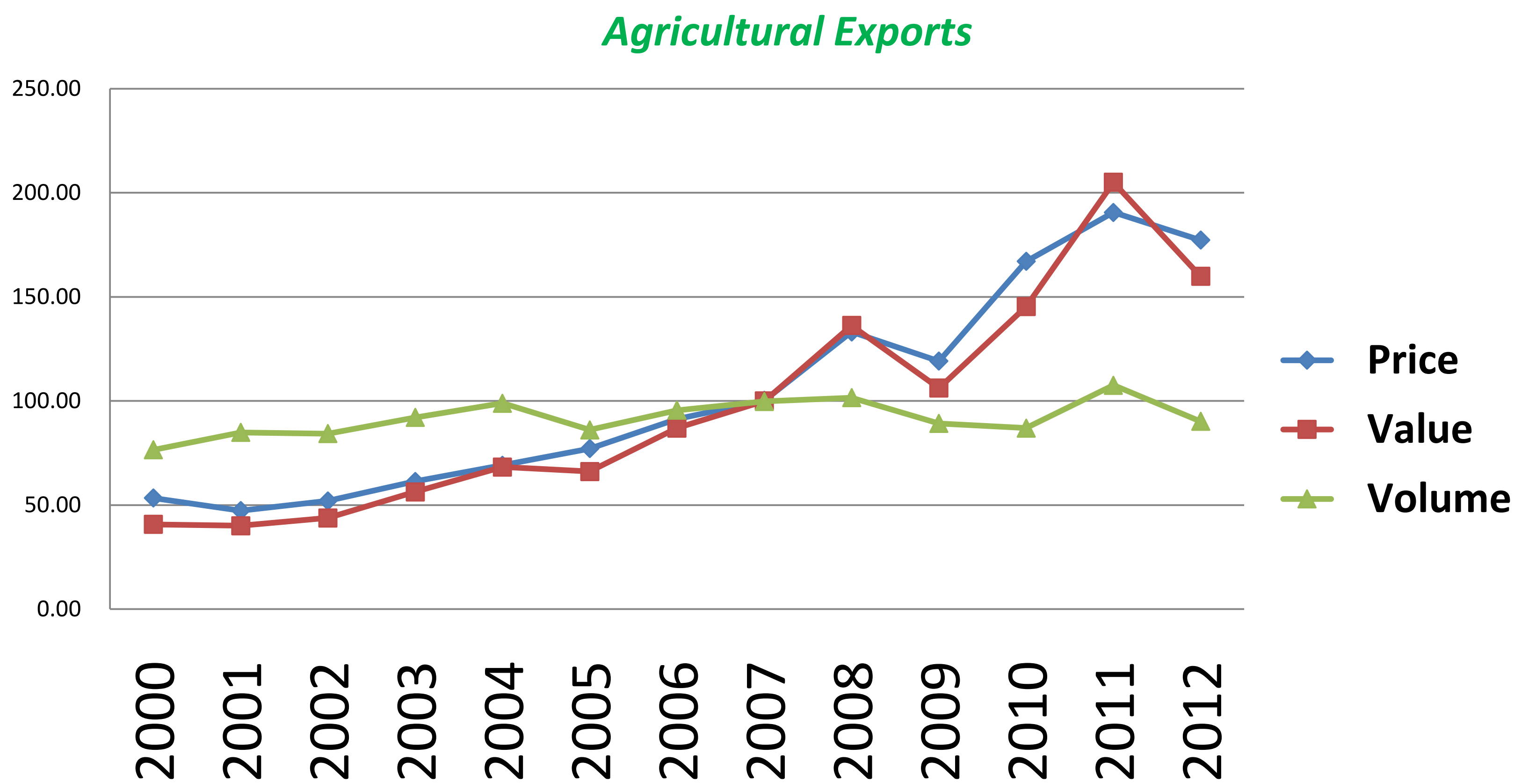
| **Fertilizer** | **900-1000** |
|---|---|
| Pesticides, insecticides | 550-1000 |
| Rice seeds | 600-750 |
| Fuel | 300 |
| Labor | 200 |
| Harvester rental price | 500 |
| Land rent | 1500 |
| Farm management fee<br>Total cost | 2400<br>7450-8150 |

# Disappearing buffaloes

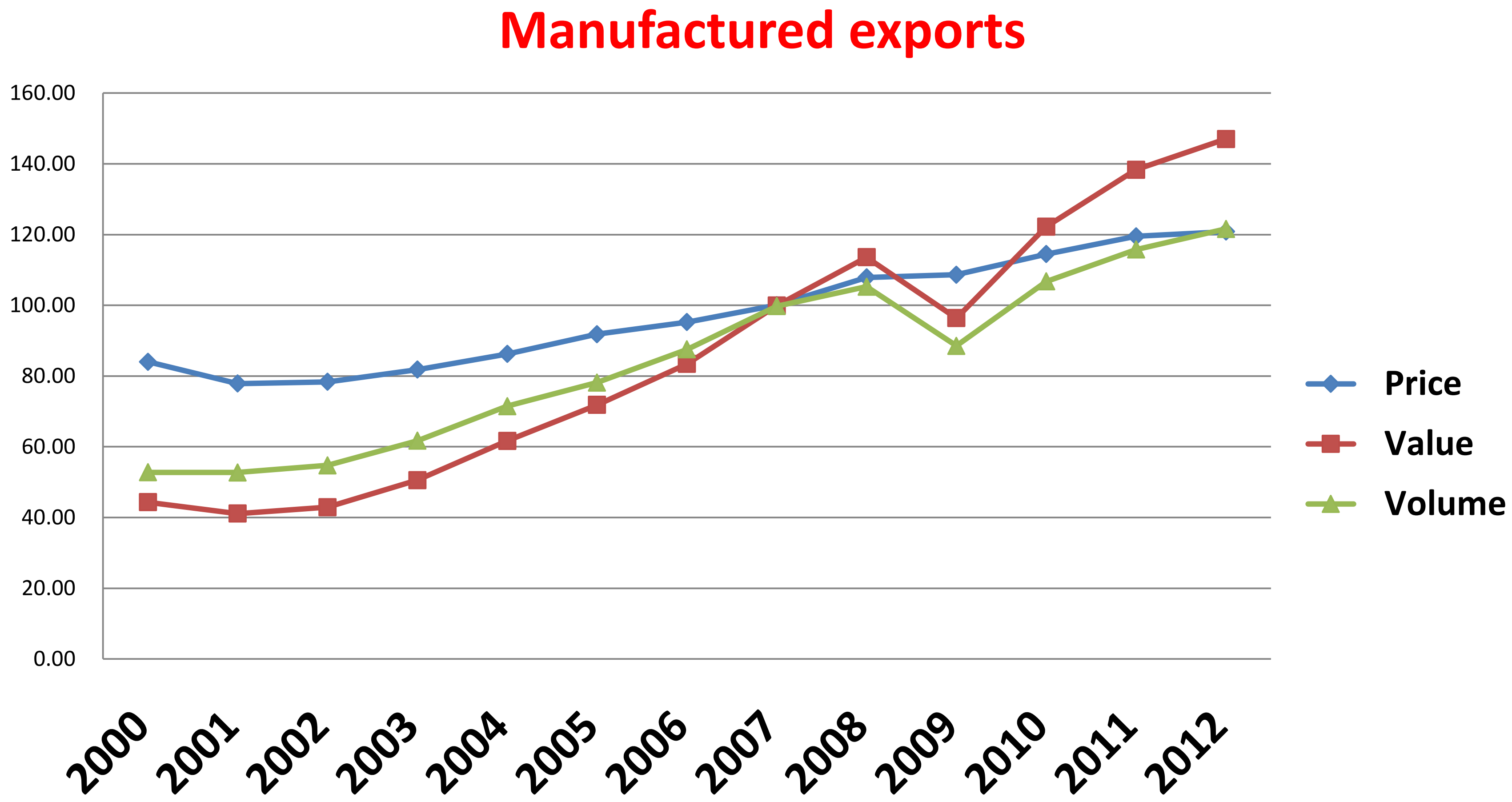
# Dwindling number of Thai buffaloes

- 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?

# Total Agricultural Export Revenue
# Value= PxQ
# Price factor dominates quantity



# A small country assumption: Export prices are determined by the world market
# Thailand's small share in the world market means no price-setting power



# Correlation coefficients between export values (2000-2012)

| | Price | volume |
|---|---|---|
| agriculture | .98 | **.62** |
| 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 lower 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 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.
- 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 k**ilograms per rai of Jazzman rice, compared to
- **400 k**ilograms 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 %.

# Thailand rice exports hit 12-year low in 2012

- 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.

# Thailand rice exports hit 12-year low

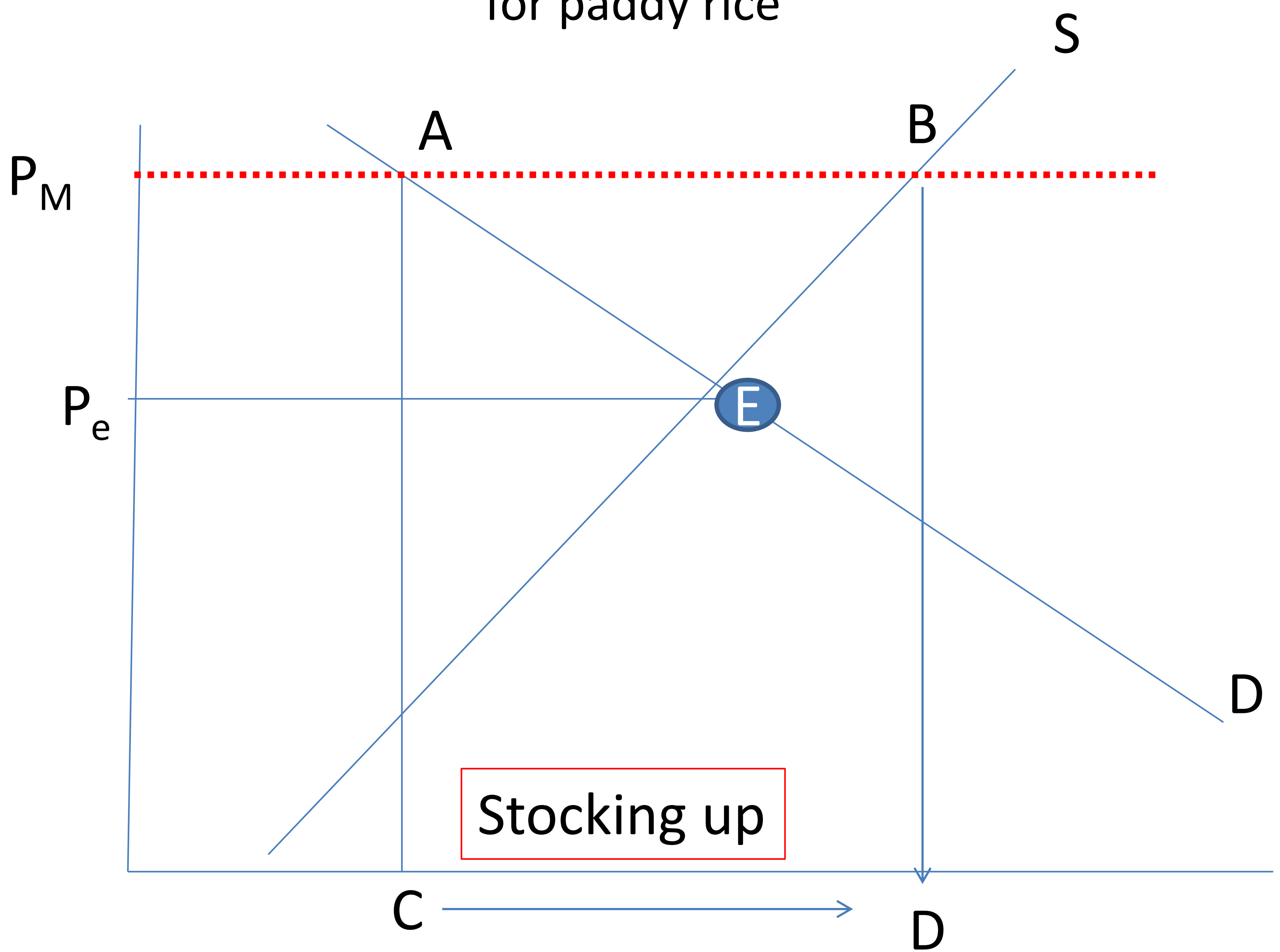
Published Bangkok Post Jan 24, 2012

- 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.
- What was the reason behind that dismal export performance?

# 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 (Area ABCD)

# Mortgage Price Support Program for paddy rice



# 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

# An alternative way to help

- 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.


เซีย 20/2/58
ไทยรัฐ
เงินทั้งหมดอยู่กับพวกเค้าค่ะ
ปปช.ให้คลัง
ฟ้องเรียกเงิน
6 แสนล้าน
ค่าเสียหาย
จำนำข้าว
โครงการจำนำข้าว
ยกระดับราคาข้าว
พัฒนาคุณภาพชีวิต
ชาวนา
พ่อค้าปุ๋ย
ยากำจัดศัตรูข้าว
ชาวนา
โรงสี
พ่อค้าข้าว
เกม
ทำลายล้าง
ทางการ
เมือง

# How the rice mortgage system works

- Farmers kept their rice in their own granary and got money from the Bank o f 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...

# 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.

# Water mismanagement?

- The disastrous flooding in 2011 was blamed on alleged mismanagement of the country's water supplies at different dams.
- Critics said the dams were holding too much water at a time when the country was hit by a series of rainstorms.
- The flooding lasted more than ***five*** months and affected 65 of the country's 77 provinces, including Bangkok.
- It left more than 800 people dead and damaged property worth more than Bt1.4 trillion.

# Who is afraid of M44?

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 Thakshin 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.

# Thai government sets $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,

# Paddy output fell by 30%

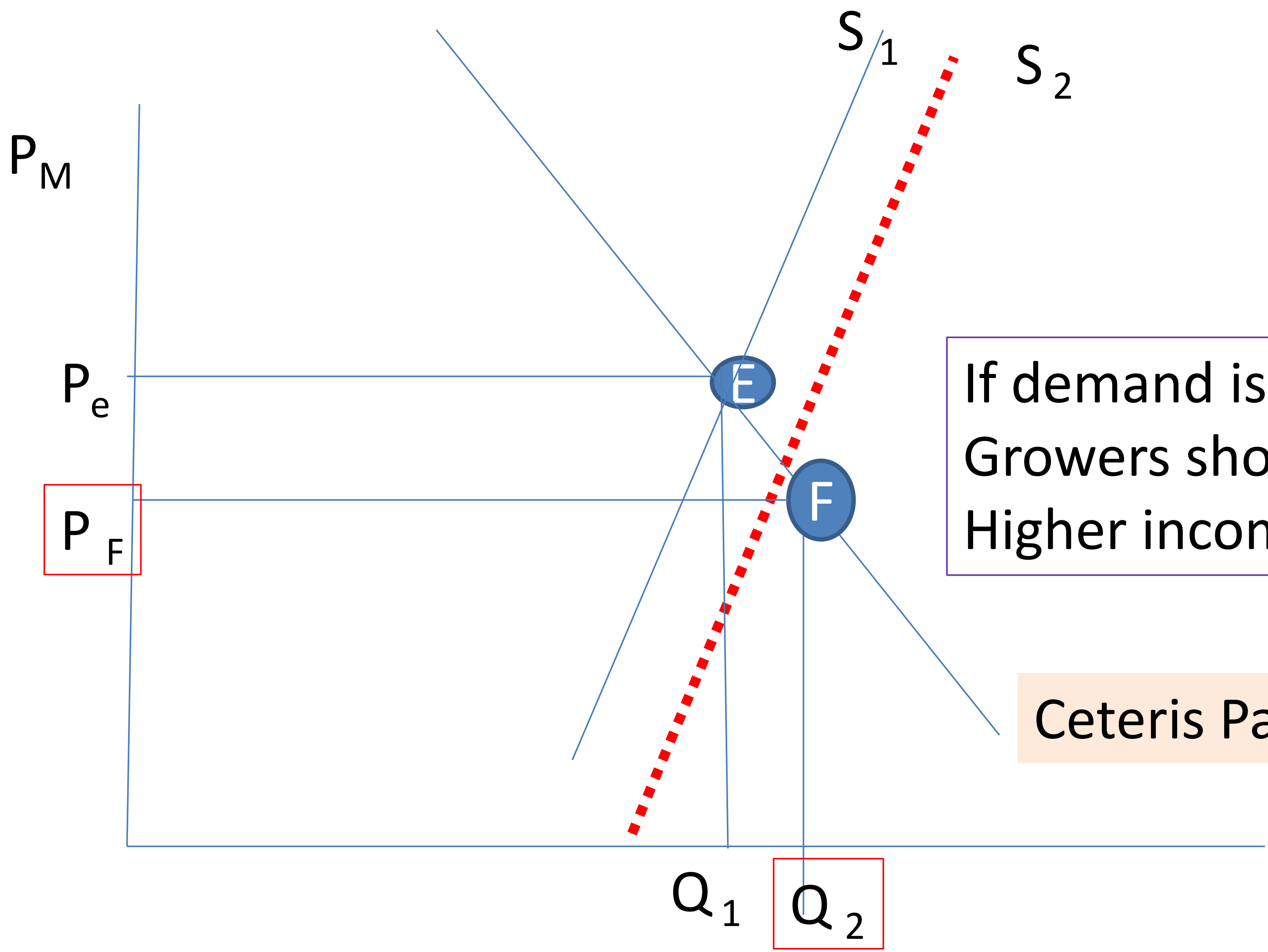
- According to the Office of Agricultural Economics, drought will cut the off-season crop in top exporter Thailand by more than 30 percent.
- Off-season rice is grown between November and April after the main crop is harvested.
- It needs irrigation as there is little rain during that period in many parts of the country.
- Aid for drought-hit areas would focus on the agricultural north and northeast.
- Thailand will enter its hot season in March.

# Cassava

# How to subsidize cassava farmers in 2015

- 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.

# To subsidize input for cassava growers




If demand is elastic
Growers should get
Higher income

Ceteris Paribus

# Another 1.2 billion baht subsidy: 2016

- Ministry of Commerce  (September 2016) sleeked Cabinet approval for a Bt1.2-billion budget to help 500,000 cassava farmers, and also asked the Bank for Agriculture and Agricultural Cooperatives (BAAC) to release loans totalling Bt20 billion to help increase financial liquidity for farmers.

# For 500,000 cassava farmers

- The Bt1.2-billion budget will used to pay the 1.5 per cent interest rate for 500,000 cassava farmers for 24 months.
- In addition, the BAAC will waive interest of 1.5 per cent due from the farmers during the same period.
- The government will also ask 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.

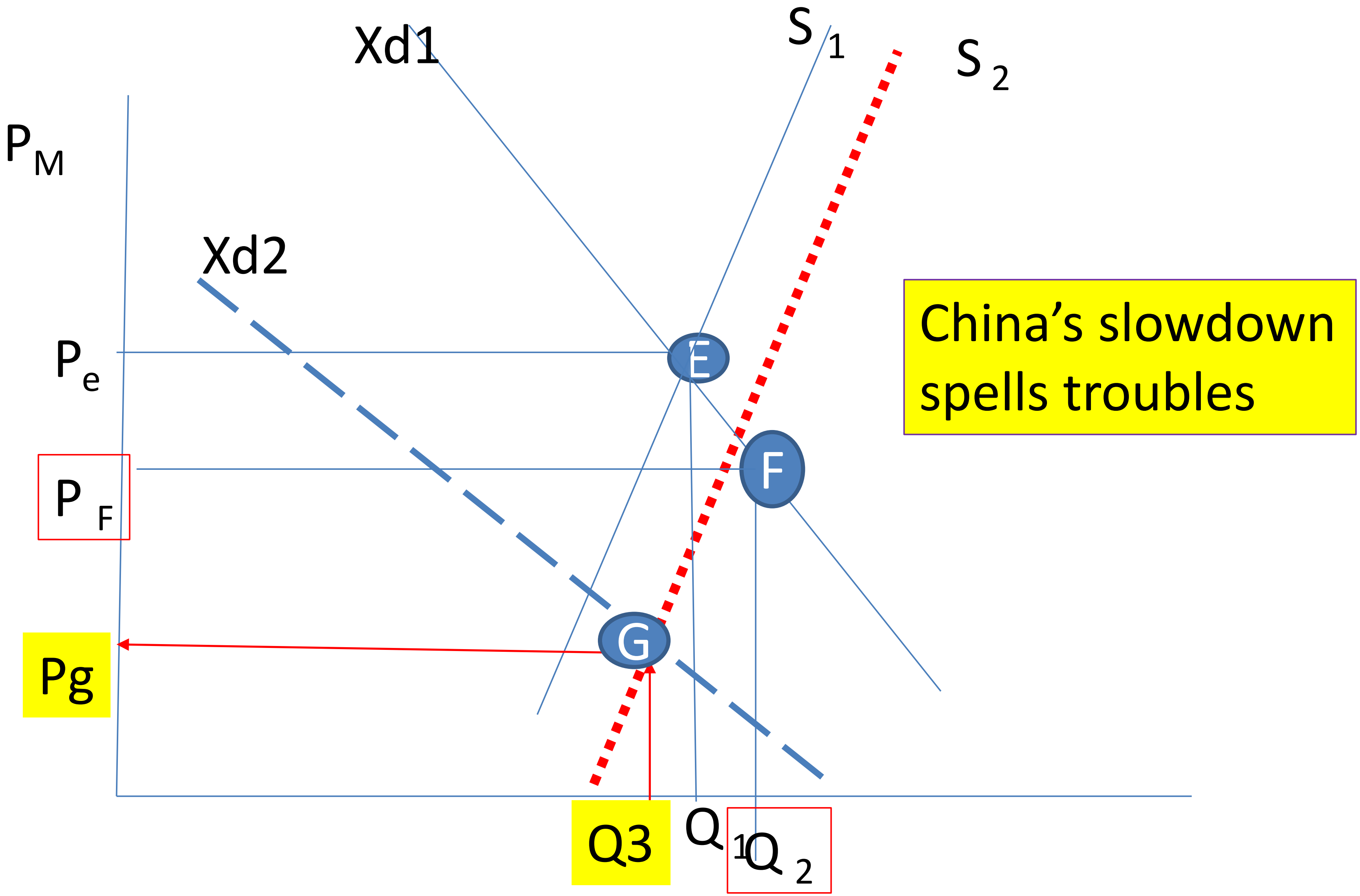
# To protect Thai farmers?

- To protect Thai farmers, the government will ensure stringent inspections at border checkpoints to prevent cassava smuggling from neighboring countries.
- Thailand would also enforce stringently sanitary standards for cassava and tapioca imports.
- The Foreign Trade Department will strive to promote cassava exports overseas in an attempt to reduce supply in the domestic market, in particular during the harvest season starting in October.
- Besides China, India is one of potential markets for cassava imports from Thailand.

# Bad news on prices

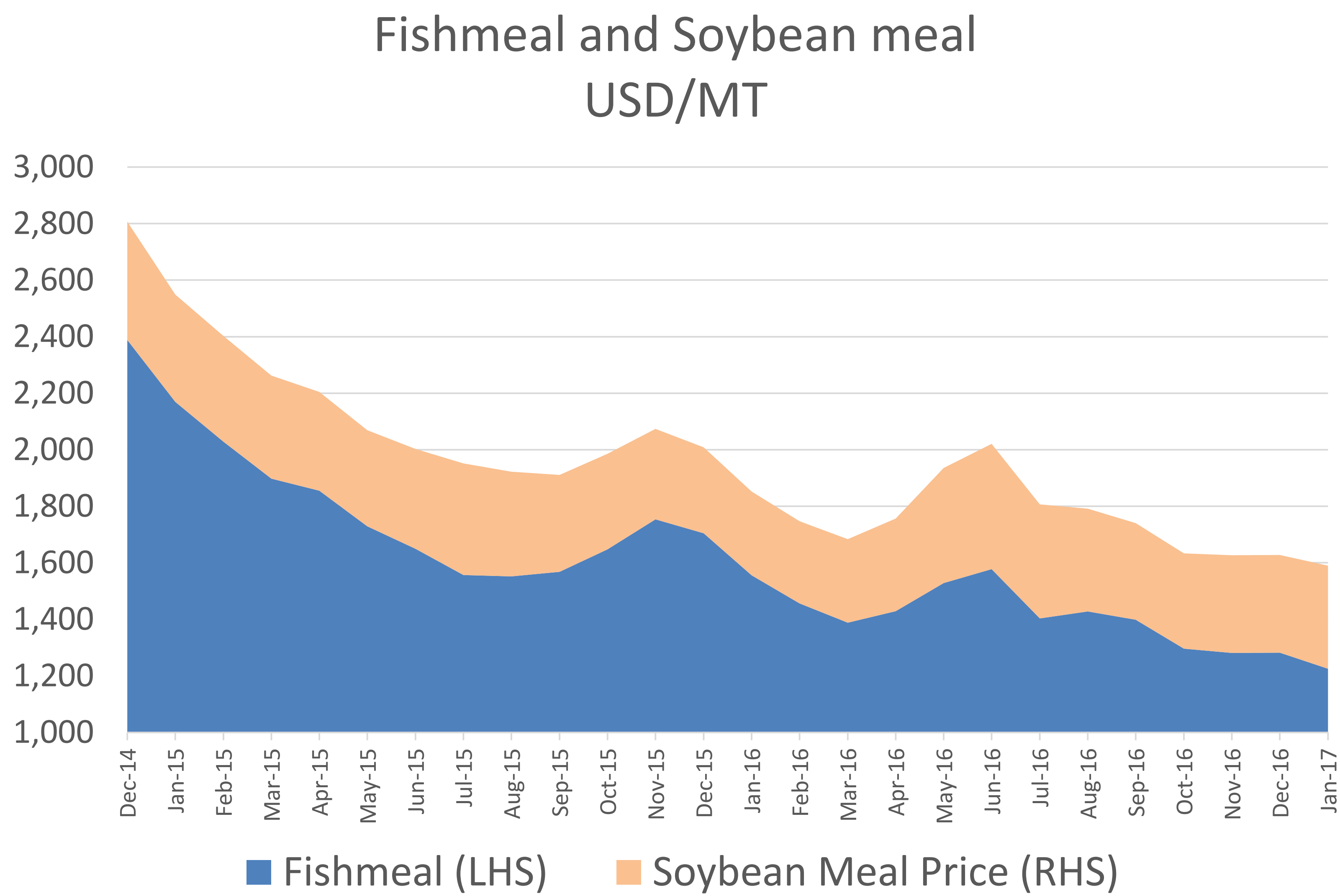
- The export price of tapioca per unit decreased 10 per cent from $289 per tonne in 2015 to $264 per tonne in 2016. In addition, the government has asked tapioca traders to purchase cassava at Bt1.90 per kilo to protect farmers from the falling prices.
- Cassava is currently traded at Bt1.60 to Bt1.70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

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



# 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?


Fishmeal and Soybean meal
USD/MT
3,000
2,800
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
Dec-14
Jan-15
Feb-15
Mar-15
Apr-15
May-15
Jun-15
Jul-15
Aug-15
Sep-15
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Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Fishmeal (LHS)
Soybean Meal Price (RHS)

# Bangkok Post October 21,2016

- The government controls 8.4 million tones of rice, half of which is good quality and the rest is suitable for industrial use.
- The quantity of rice stocks has fallen from 18.7 million tonnes 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 transfers

- The National Rice Policy Committee, chaired by the PM, approved in September 2016 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.

# 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?