

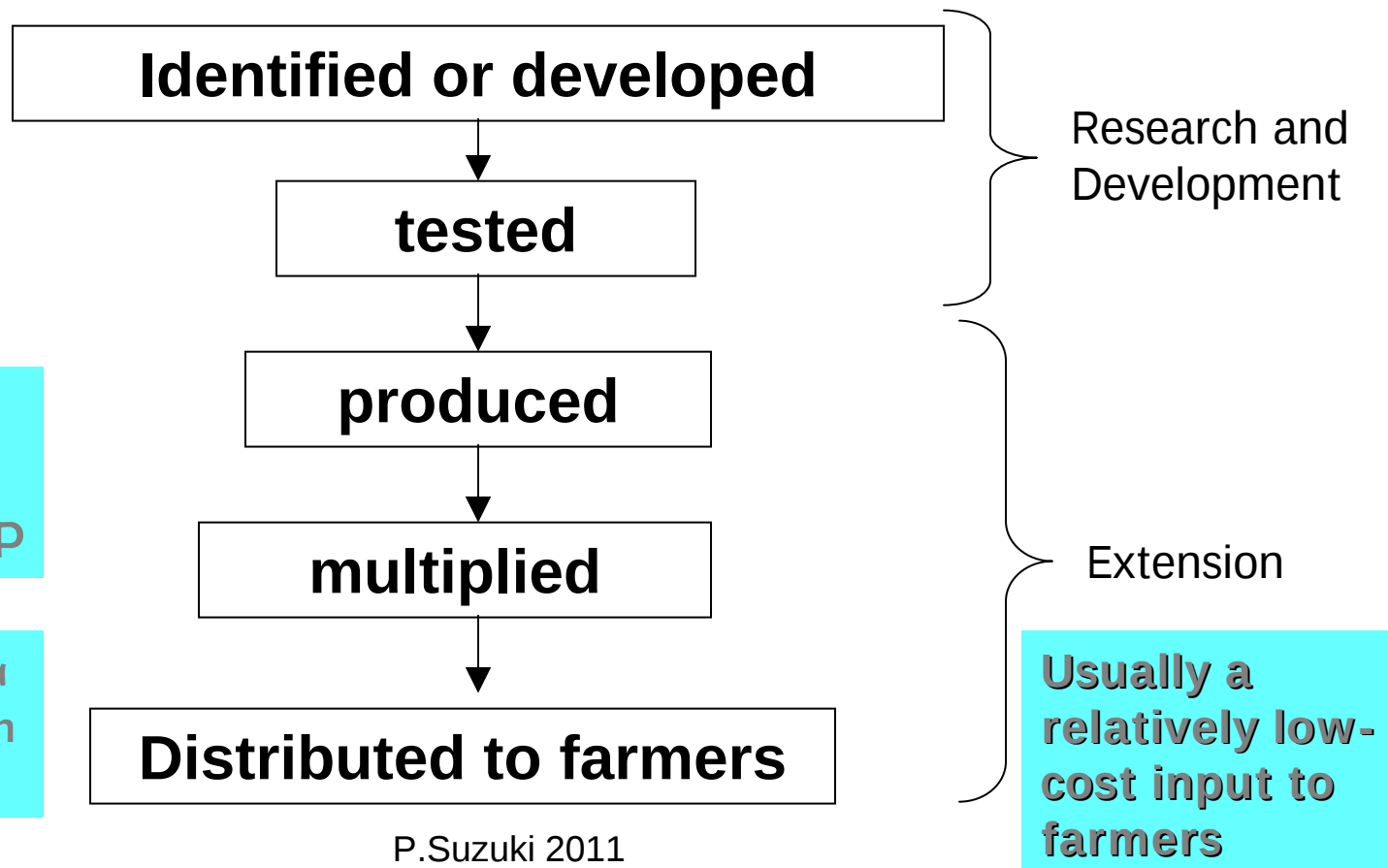
6. Input and Credit Policies

Importance of New Inputs

- **Limited land resource**
- **To increase output per unit area (average land productivity) and output per worker (average labor productivity)**
- **Manufactured inputs: seeds, fertilizer, pesticide**
- **Tend to be highly complementary**

Seed of high-yielding varieties

- Seed production (crop, aquaculture)

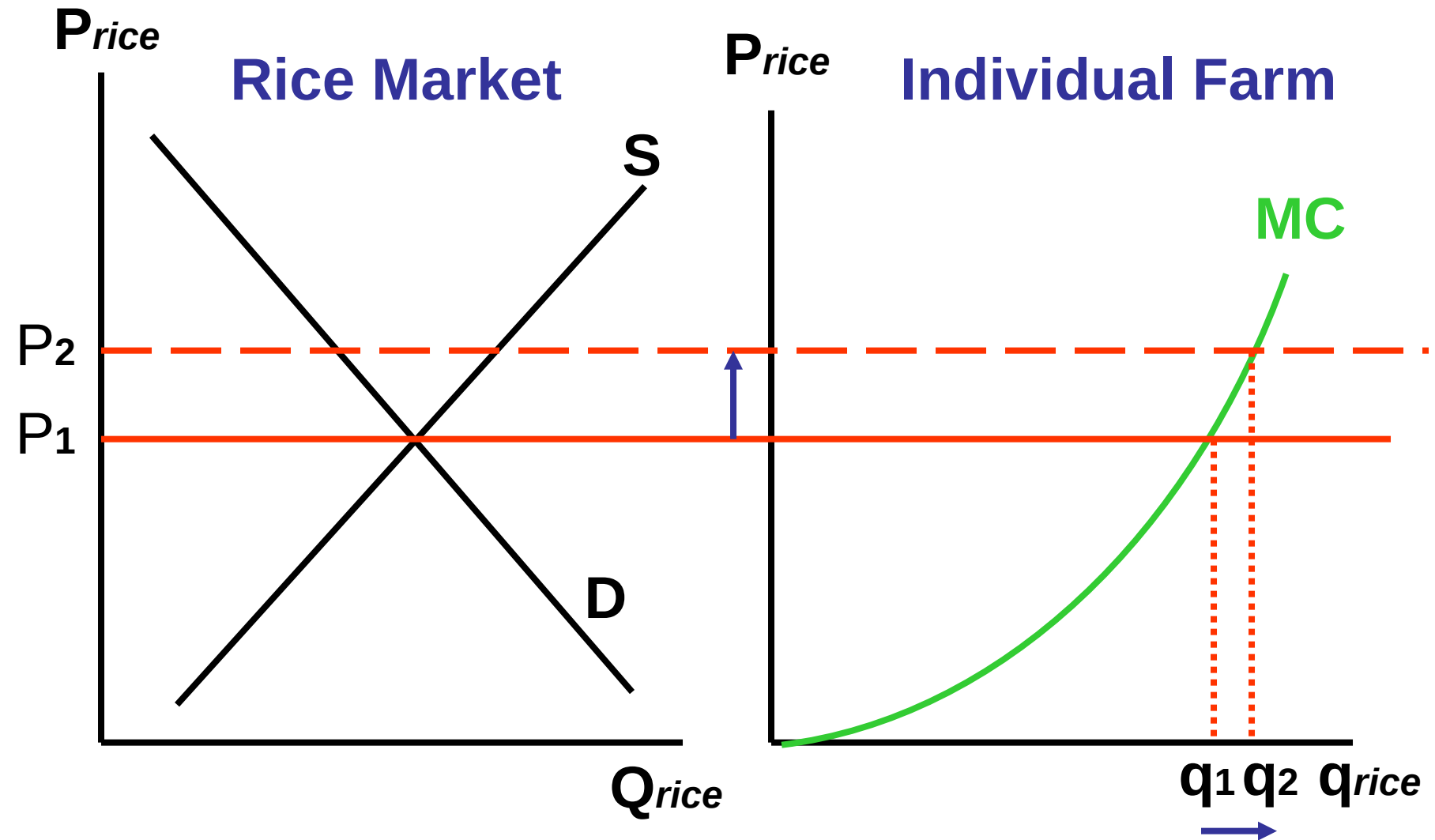


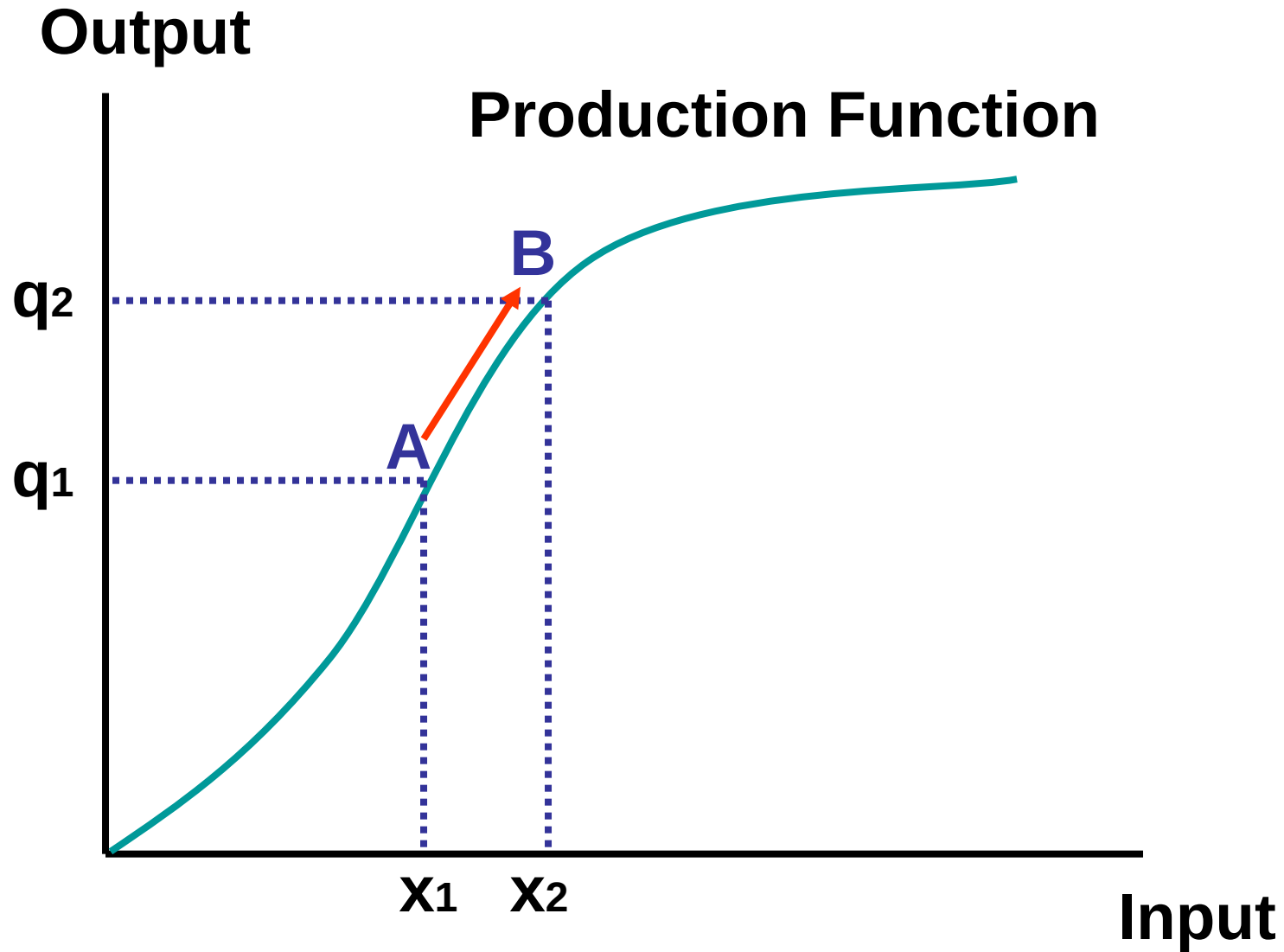
Seed industry
14,873 M.฿ (2006)
= 1.5% of Ag.GDP

Thailand can be a
production base in
ASIA

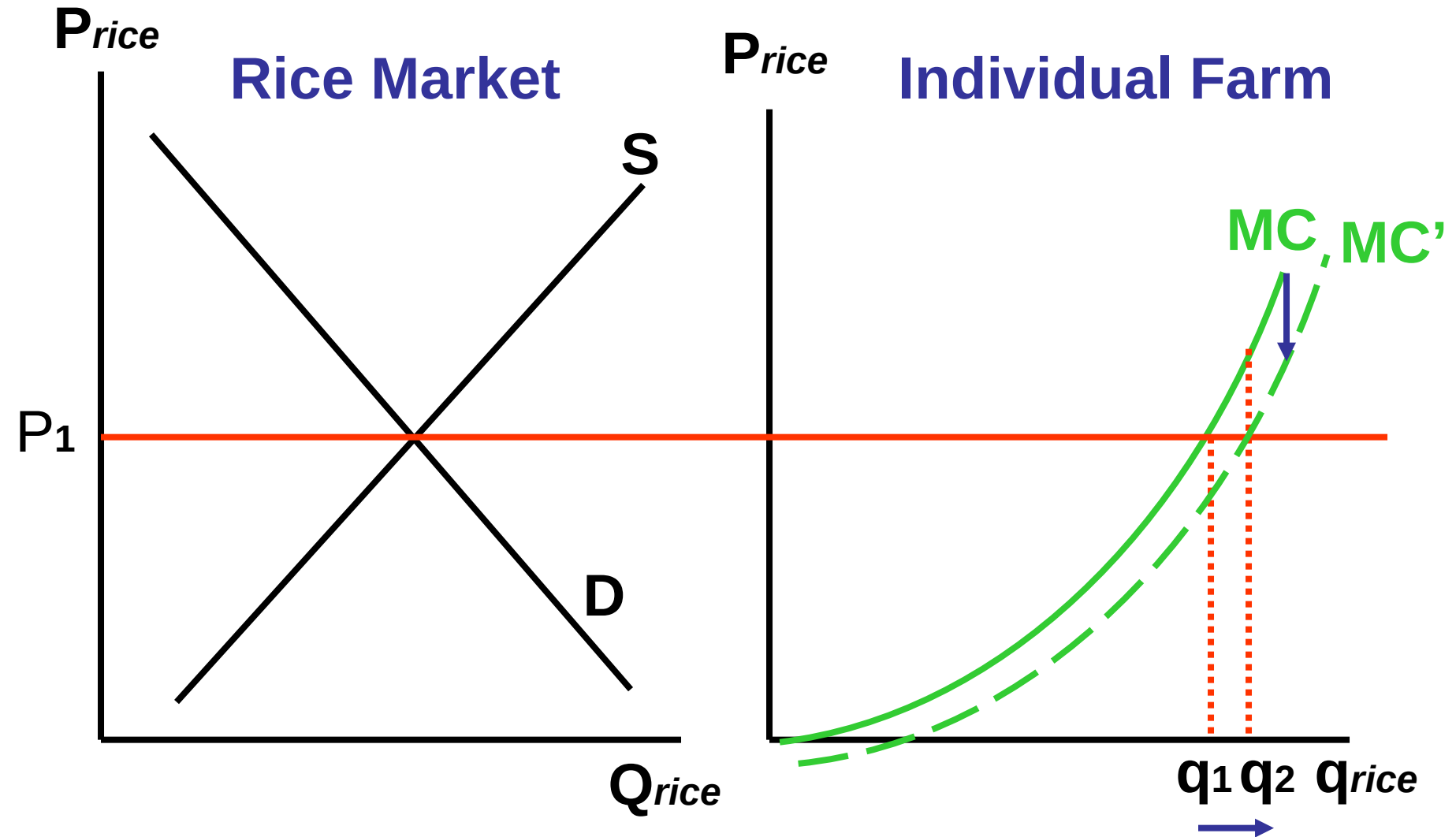
- **How to encourage a farmer to use more inputs ?**

1. Raise output price





2. Lower the input price



Economic Questions

- Which is preferable, #1 or #2 ?
- Will **the subsidy** be passed to the farmers?
- What are cost of **subsidy** to the society?

Which is preferable?

#1

- High output price → an incentive to increase output (high VMP) → use more inputs (given land and labor)
- High output price → Hurt urban consumers and agr. export (without export subsidy)

#2 = input or production subsidy

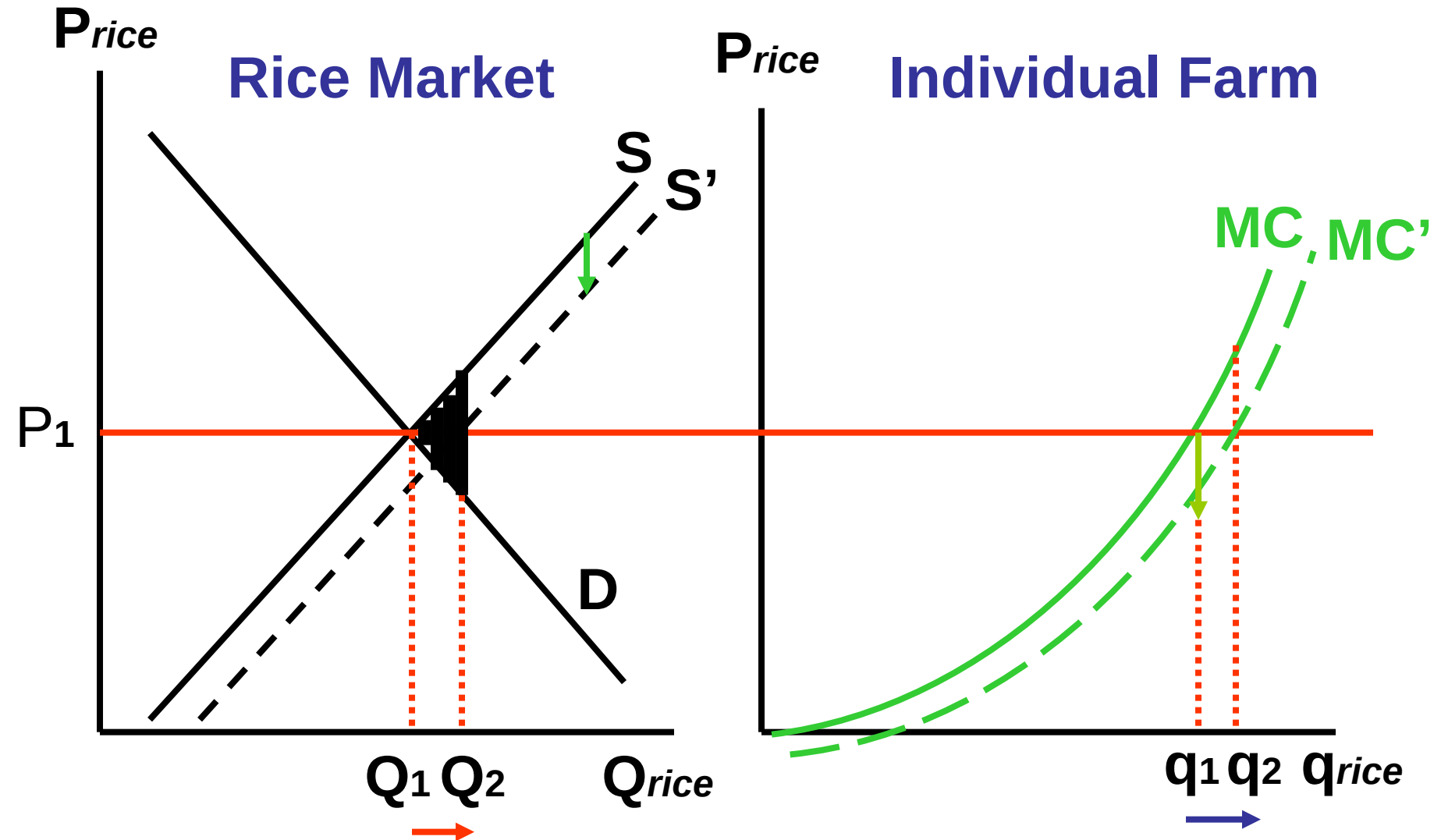
- Lower input price to farmers → lower production cost for farmer → increase market supply → lower output price

Impacts (cost of subsidy)

- Efficiency loss
- Government spending (non-sustainable)
- Over use of chemicals →
environmental damage
- Lower output price (if not a small country in the world market)

→ Inadvisable

2. Lower the input price



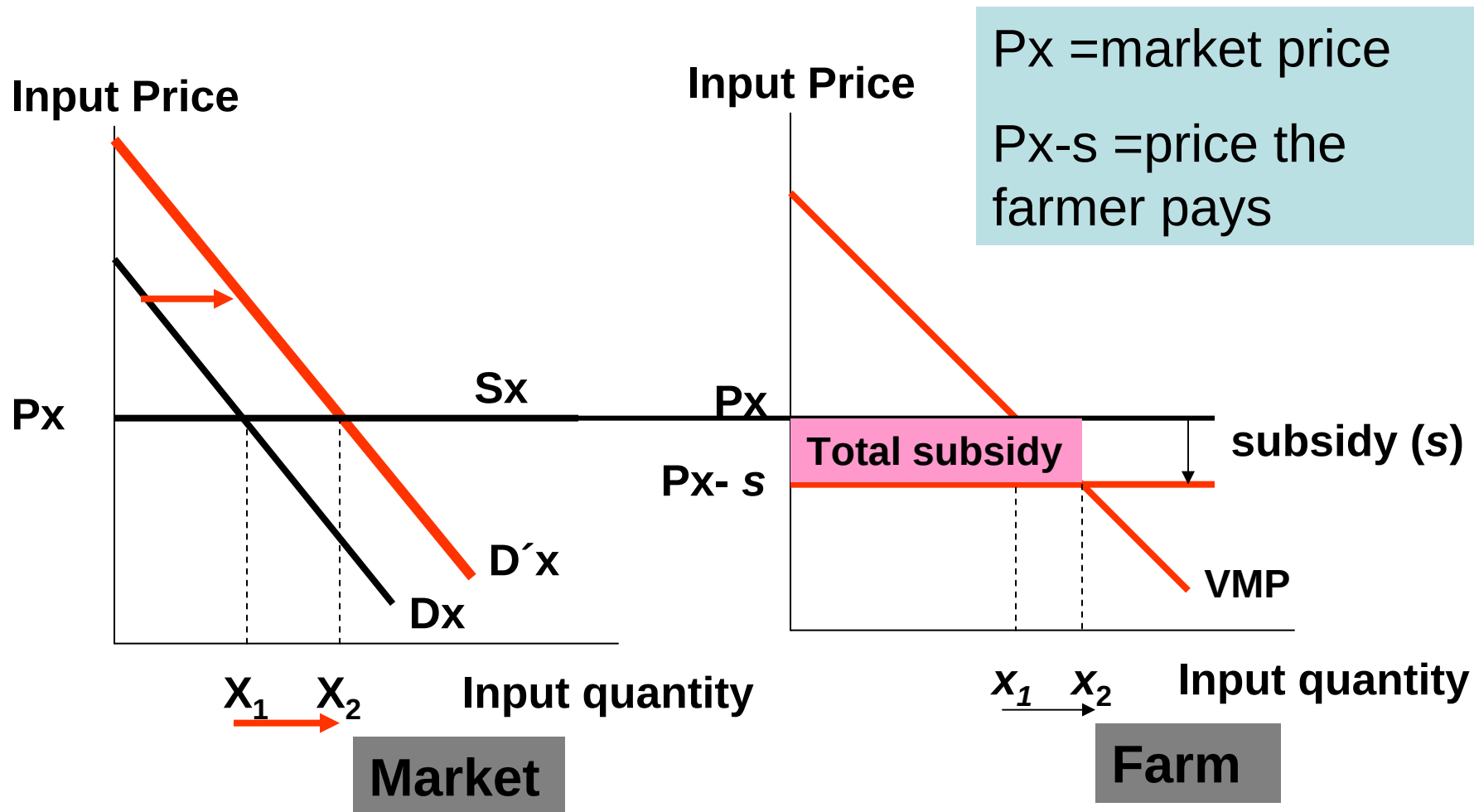
Will the subsidy be passed to farmers?

- Yes, if X is bought and sold in a competitive market**
- If not a competitive market, farmers receive lower than VMP**

**An Economic Analysis:
Cases of a constant cost industry
and a subsidy at the farm level**

- **Farmers gain less if an input is purchased and sold in non-competitive market**
- **A monopolist can also obtain benefit from the policy**

Subsidy at the farm level, Competitive Market for X



Subsidy at a farm level, Competitive Market for X

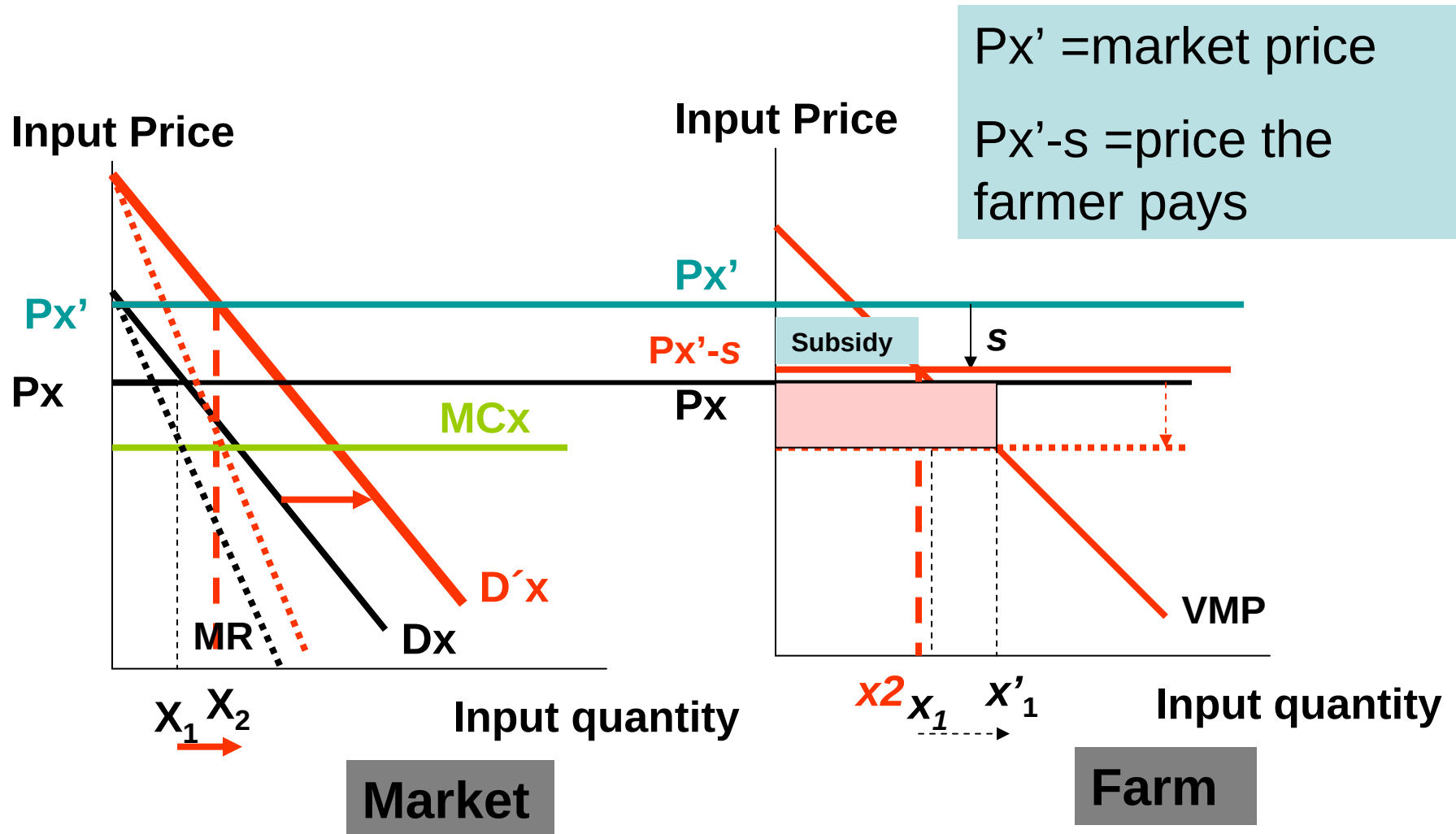
Farmers pay a lower price of X ($P_x - s$)

Farmers use more X ($x_1 \rightarrow x_2$)

Raise market demand for X ($D_x \rightarrow D_x'$)

Given a constant supply (MC) curve, market price of X is the same and market quantity supply rises

Subsidy at the farm level, Monopoly Market for X



Subsidy at a farm level, Monopoly Market of X

Farmers pay a lower price of X ($P_x - s$)

Farmers use more X ($x_1 \rightarrow x_2$)

Market Demand for X rises ($D_x \rightarrow D_x'$)

Monopolist raises market Price of X ($P_x \rightarrow P_x'$)

At equilibrium, farmers pay ($P_x' - s$) which is higher than ($P_x - s$) and apply input x_2 units

Question

- **An input monopolist tends to prefer input subsidy policy and may bribe the government to impose such a policy.**

Why?

(Explain verbally how the market works to benefit the monopolist)

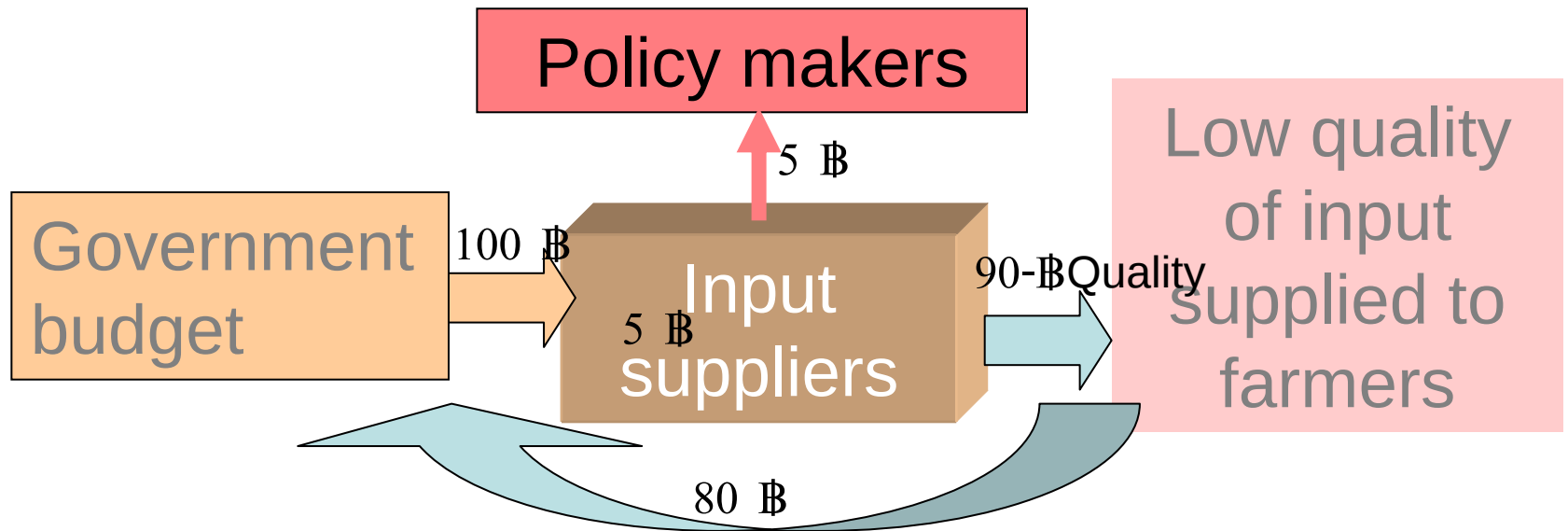
Facts

- **What can be hypothesized to explain an intensive use of fertilizers in Vietnam?**
- **Why does the fertilizer-land ratio and the machine-land ratio in the US are so low comparing with other countries?**

Unlike industrial technology, agricultural technology is location-specific.

Fertilizers / Seedlings

- Imperfect information on input quality → Rent-seeking



Why subsidy? (Asia)

- **Emerging with Green revolution + Asian food crisis in 1970s**
- **Perception of policy makers**
 - **Must increase output to feed the urban and industrial sectors**
 - **farm income**
 - **Farmers were technologically backward**

Forms of Subsidies

- **Selling inputs to farmers at a below cost**
- **Distribution of inputs from input suppliers to farmers**

Constructive role of Government

- Availability of inputs (e.g. improvement of rural roads)**
- Dissemination of price information**
- Setting quality standards for inputs**
- Regulating use of toxic chemicals**



Nice farm, Bad Temper (Picture from the Economist)

P.Suzuki 2011



Credits

Role of credit

- For the purchase of inputs, investment, marketing → improve efficiency
- For better management of risk (borrow during bad year, pay back during good years) → reduce income risk
- Without availability of credit only wealthier farmers can purchase new inputs → improve income distribution

Types of Money-Markets

- **Formal (organized) lending sources**
e.g. banks (private, state, cooperatives)
- **Informal lending sources**
e.g. money lenders, merchants,
landlords, friends, relatives

Informal sources

- **Low administrative cost**
 - know each other
 - Personal contact (know each other)
 - Simple accounting
 - require little collateral
- **loans are accessible at all times**
- **loans for production and consumption**
- **flexible in rescheduling loans**

Do informal Money-Markets Exploit Borrowers?

Evidences of market power

- Monopoly profits earned by the lenders
- High interest rate
- Landlords or merchants, as money lenders, force their borrowers to rent, borrow, buy from them and sell to them

**** Does high interest rate always imply market power and exploitation?**

Factors determining the rural interest rates

- 1. Administrative costs**
- 2. Opportunity cost of lending**
- 3. A risk premium due to the probability of default in repayment**
- 4. Monopoly profit**

Factors determining the rural interest rates: informal sources

- 1. Administrative costs ()**
- 2. Opportunity cost of lending ()**
- 3. A risk premium due to the probability of default in repayment (high)**
- 4. Monopoly profit ?**

Formal sources

1. **Administrative costs ()**
2. **Opportunity cost of lending ()**
3. **A risk premium due to the probability of default in repayment (high)**
4. **Monopoly profit ?**

Risk premium is high particularly without formal collateral

- **Weather tends to affect all farmers in a given area → simultaneous default of a large number of borrowers**

Monopoly profit

- The case of exploitation
- not as large as often believed because of competition (case of entry)
- If profit margins are large → incentives for new money lenders to enter the business
- High interest rate $\nexists$ exploitation (not always)

Organized Money-Markets: Why limited?

- **High transaction costs**
- **Loans are small, comparing with the administrative cost (paper work, evaluation of potential borrowers, collecting payments, supervising loans)**
- **Loan size & interest rate → negative relationship**
- **regulated maximum interest rate may fail to cover admin. cost and risk.**

- **High interest rate for rural credit**
- **An interest rate charged by formal sources should have been higher than informal sources**
- **In fact, r by formal sources $< r$ by informal ones. Why?**

Lessons Learned

- ➔ **Small ag. loans: costly, risky**
- ➔ **Formal ag. credit is mostly subsidized**
 - **encourage loans to large farmers**
 - **Sometime binding with the purchase of inputs. (another form of input subsidy)**

Why subsidy?

Based on the notion that

- (1) credit is critical for the adoption of new technology**
- (2) compete with money lenders (who exploit farmer)**
- (3) credit + supervision + education → increase capacity of farmer to use modern inputs**
- (4) offset other policies that discriminate against agriculture**
- (5) lessen inequalities in rural sector.**
- (6) easy vehicle for transferring public funds**

Effects of subsidized credit

- favorable impacts on the individual borrowers
- few positive net effects on econ. development and rural financial system

Why?

- excess demand for subsidized credit
→ credit is to be rationed → goes to large farmers (lower admin. cost)

Effects of subsidized credit

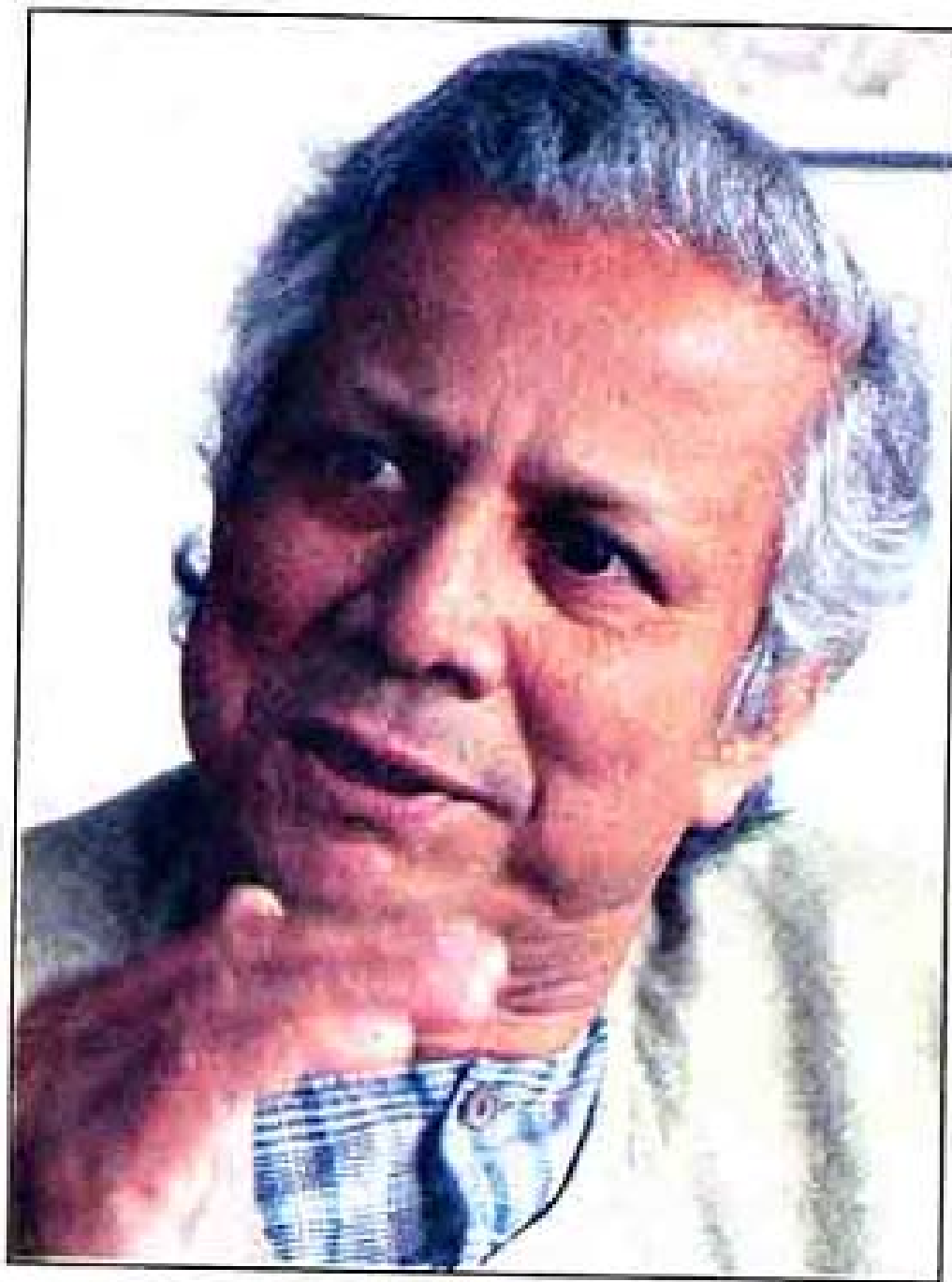
- **subsidized loan rates → lower all interest rate → discourage private saving**
- **subsidized credit may be used for consumption or nonproductive assets → raise the default rate**

Constructive Role

- to reduce agriculture risk → reduce default → reduce interest rate
→ e.g. irrigation, crop insurance, land reform
- to reduce transaction cost associated with lending and borrowing
→ e.g. roads, means of communication, group borrowing

Why subsidies exist?

- **avored by individual farms**
- **politicized**



Microfinance

Professor Mohammad Yunus in Dhaka. Yunus, 63, is the founder of Grameen Bank, which has made more than \$4 billion (156 billion baht) in tiny loans to poor Bangladeshis, providing a lifeline for millions and a banking model that has been copied in more than 100 nations from the US to Uganda.

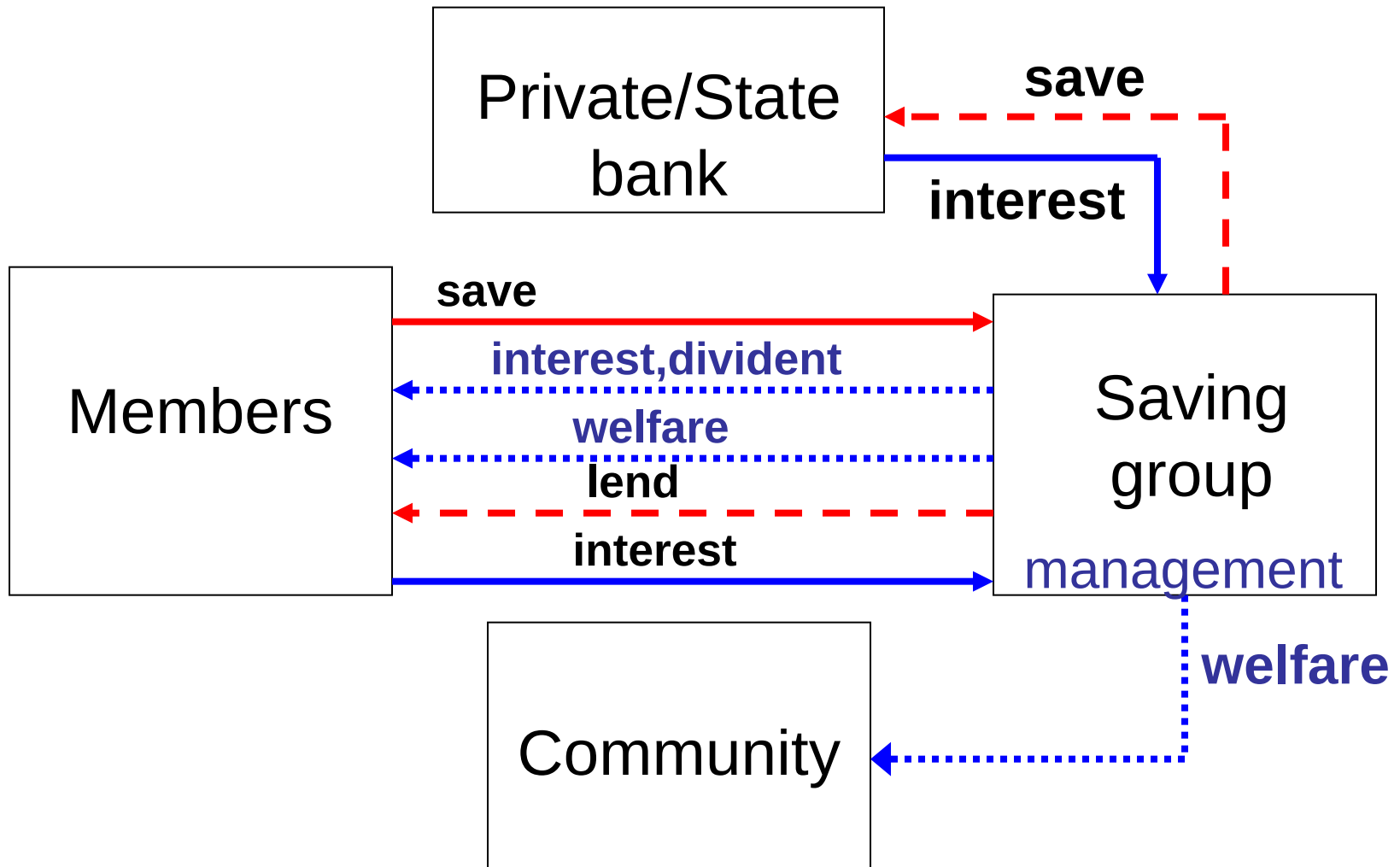
The Grameen Bank (Bangladesh)

- Target: households with < 0.5 acres
- Farmers are organized into groups
- **Credit without collateral**
- Utilization of loans are supervised
- Max. amount of loans is fixed
- The bank is subsidized

- **94% of loans were for livestock, processing, trading**
6% for crop production → risky
- **Interest rate charge 16% (26.5% if to break even)**
- **26.5% is mostly for administrative cost**
- **default rate < 2%**
- **If less supervision → lower admin. cost
→ higher default**

Bank of Agriculture and Agricultural Cooperatives: BAAC (Thailand)

- In 1947 **the Bank for Cooperatives:** funds for the cooperatives
- 1966 the Bank for Agriculture and Agricultural Cooperatives (BAAC): a state enterprise under the Ministry of Finance: to extend credit more widely, to individual farmers as well as through farmer institutions



Saving groups in Thailand