



# When to Act – Framework for Regulation

CYBR 4400/5400: Principles of Internet Policy, Lecture 1-3

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# Today's Lecture

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- ✿ Recap of last lecture on Reasons to Regulate
- ✿ Lecture on When to Act – Framework for Regulation

# Key Concepts from Last Lecture

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- ❖ What did technocrats believe about the political system?
- ❖ Technocrats preference and vision for solving social issues
- ❖ Position of Barlow's Declaration regarding how governments of the industrial world should regulate cyberspace
- ❖ Barlow's concerns regarding copyright of content in digital form
- ❖ Bradner's History of the Internet view of cooperative partnership between early Internet researchers and established communications entities such as AT&T

# When to Act – Framework for Regulation

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# Key Lecture Concepts

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- ❖ What is policy and regulation
- ❖ Market failures justifying regulation

## **policy**

*A policy is a governing set of principles (fundamental truths), perhaps a plan of action, to be used in the making of particular decisions*

## **public policy**

*The principles, often unwritten, on which social laws are based*

## **regulation**

*State-imposed limitation on the discretion that may be exercised by individuals or organizations, supported by threat of sanctions*

## **distinction between policy and regulation?**

*Regulations: proposed through public hearing process, approved, and have force of law*

*Policy: may not have public hearing, do not have force of law but can greatly impact how services are implemented*

# Sidebar: FCC's “Policy Statement” Regarding Net Neutrality



- ❖ 2004: FCC Chairman Powell describes four “Network Freedoms” in Silicon Flatirons speech
  - ❖ Freedom to Access Content
  - ❖ Freedom to Use Applications
  - ❖ Freedom to Attach Personal Devices
  - ❖ Freedom to Obtain Service Plan Information
- ❖ 2005: FCC adopts Net Neutrality Policy Statement identical to Network Freedoms except:
  - ❖ Added freedom to use apps “subject to the needs of law enforcement”
  - ❖ Added freedom to attach “devices that do not harm the network”
  - ❖ Changed last freedom to “consumers are entitled to competition among network providers, application and service providers, and content providers”

# 1. Why Has Communications Been a “Regulated Industry”

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1. Government limited entry and exit from market using “licenses” or “franchises”
2. Government established key economic terms for companies to provide service through “tariffs”
3. Government set rates to achieve “universal service”
4. All the above

# What is a “Market Failure”?

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- ❖ Oxford Dictionary of Economics: When an economy has an equilibrium that is not Pareto efficient
- ❖ First Theorem of Welfare Economics: equilibrium of competitive economy is Pareto efficient
- ❖ Market failures provide *prima facie* case for considering government intervention in the economy
- ❖ Examples: asymmetric information, externalities, imperfect competition (monopoly, duopoly), missing markets, and public goods

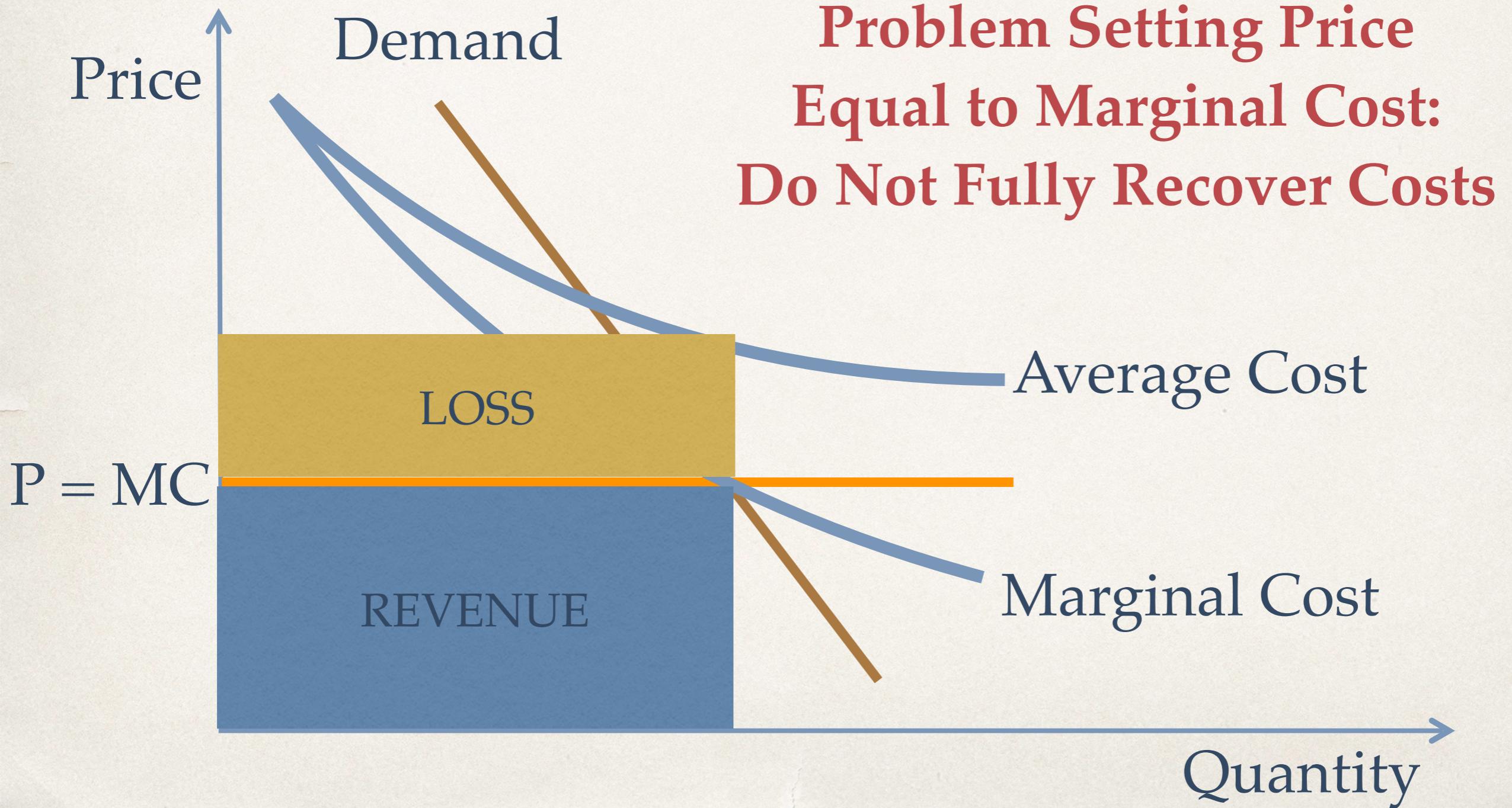
# Natural Monopoly

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- ✿ Market failure resulting from
  - ✿ Large fixed costs
  - ✿ Declining incremental costs with output
  - ✿ Demand variability (idle capacity)
- ✿ Causes lower productive and allocative efficiency
- ✿ Difference in social surplus from competition is deadweight loss from monopoly

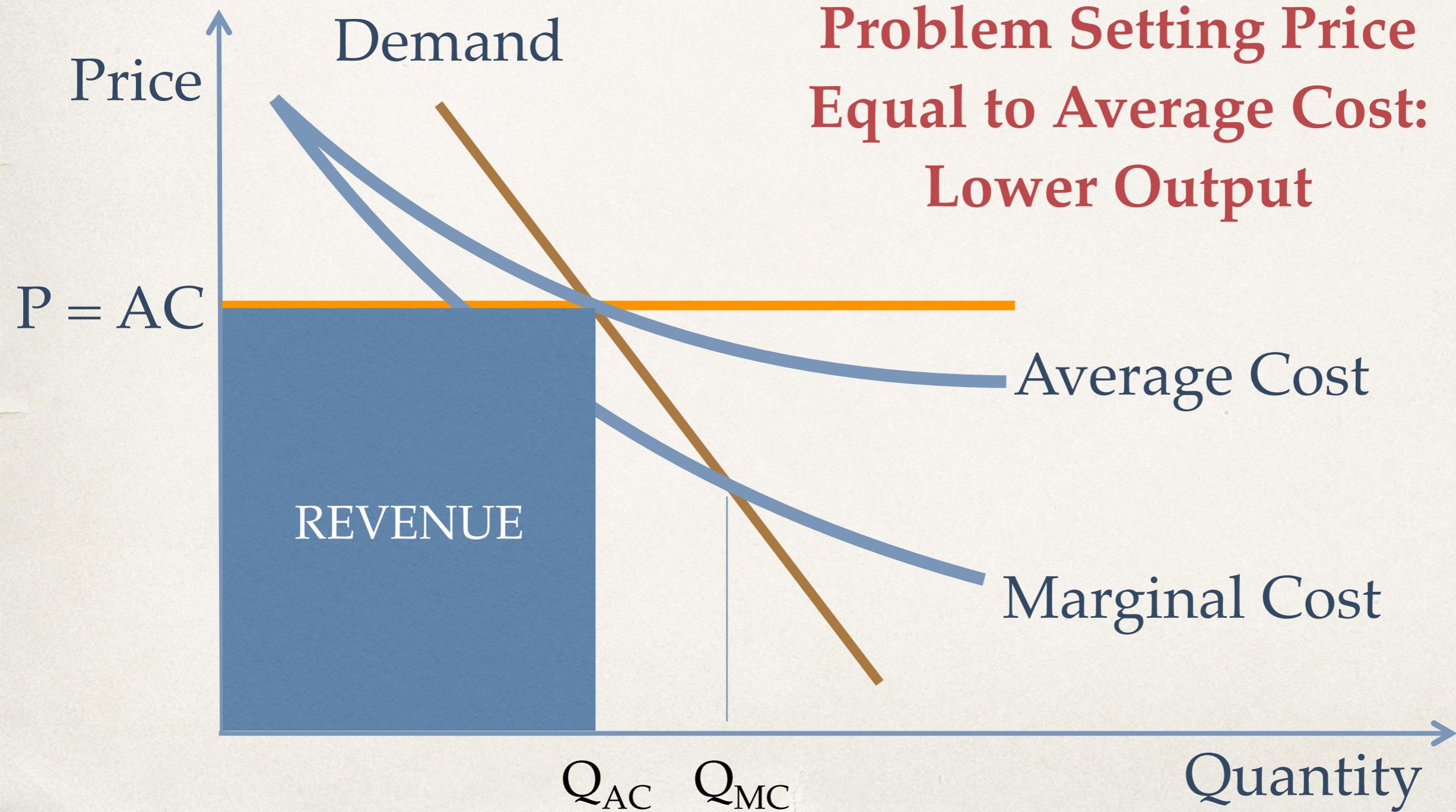
# Pricing in Presence of Economies of Scale

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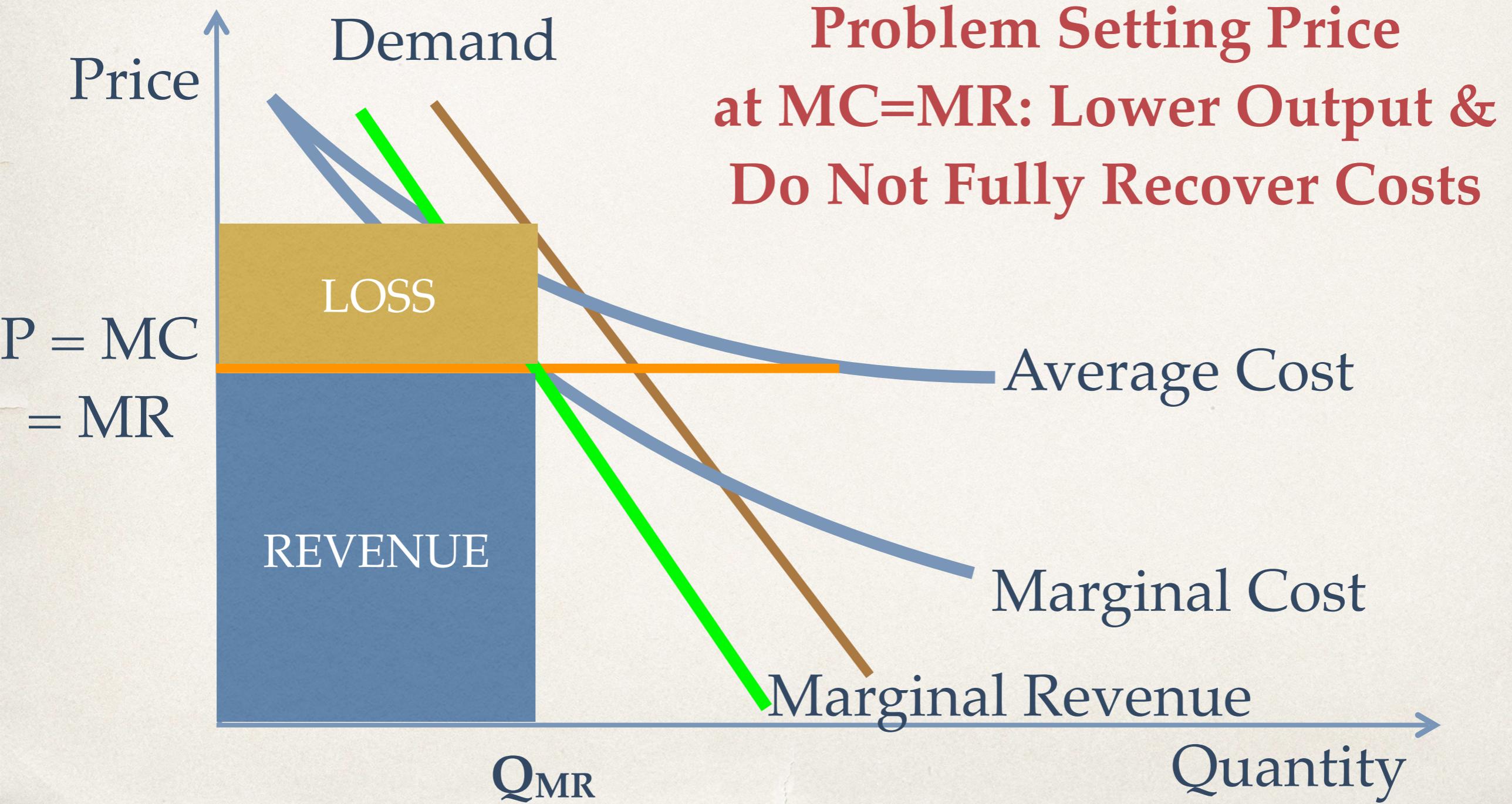
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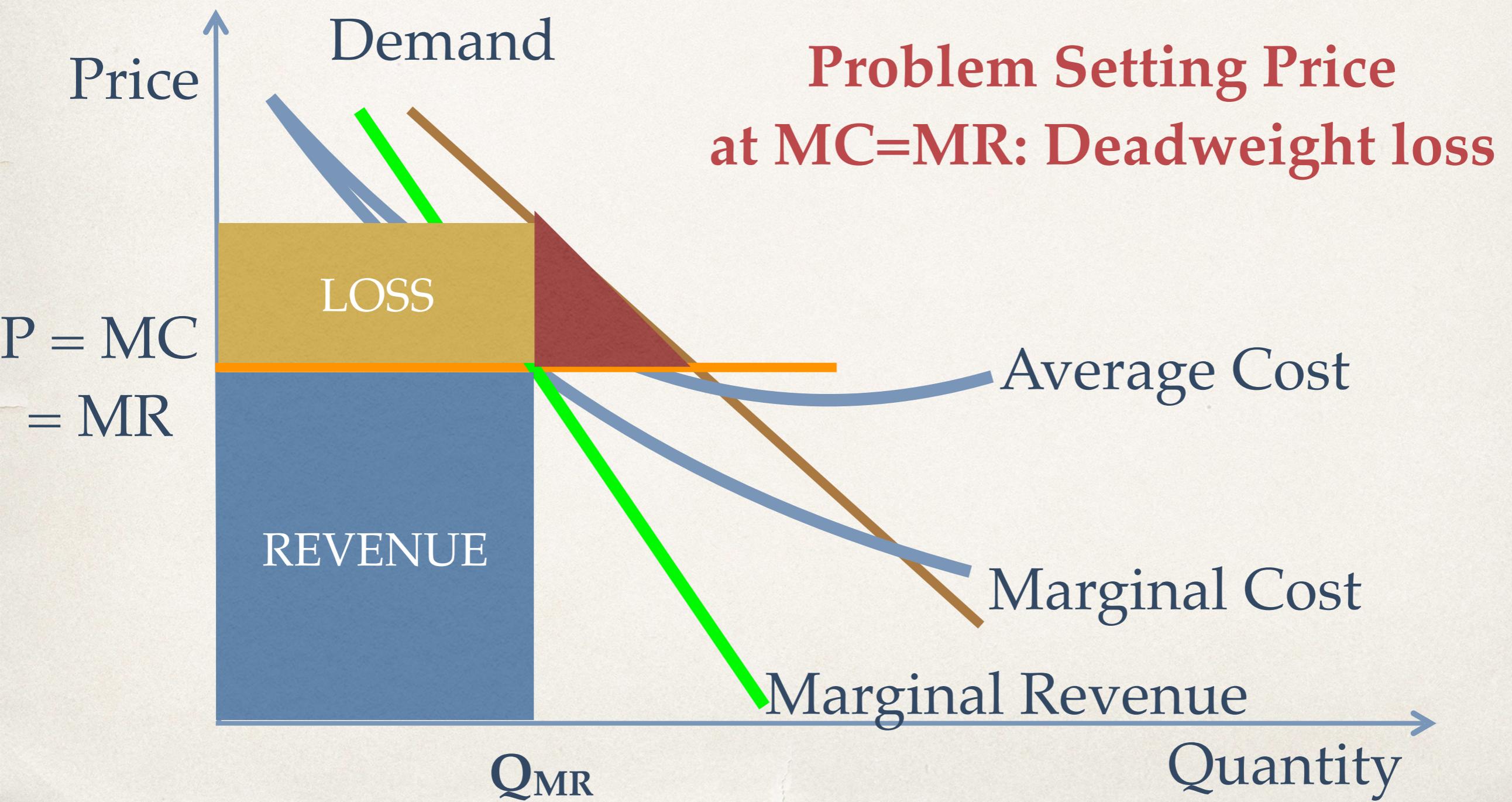
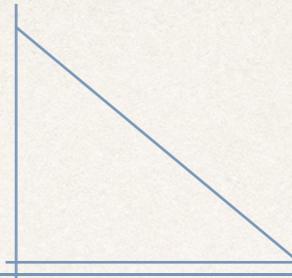


# Pricing in Presence of Economies of Scale

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# Pricing in Presence of Economies of Scale



# Regulatory Tools for Natural Monopoly: Common Carrier Regulation

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- ❖ Reserved for essential services that are public necessity / utility
- ❖ Subject to pervasive regulation to protect public interest since competition not permitted (wasteful)
  - ❖ Companies operate in defined service territories with licenses
- ❖ Must offer "just and reasonable" rates that mimic competitive market
  - ❖ Earn revenues sufficient to cover costs and reasonable rate of return...not monopoly returns

# What is a Communications Common Carrier?

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- ❖ Implemented in Title II, 1934 Communications Act:

“any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or interstate or foreign radio transmission of energy...”

- ❖ Carriers of communications
- ❖ For hire
- ❖ Holds out its services indiscriminately to all who desire to use it
- ❖ Exercises no control over the content of the communications

# Another Common Carrier Requirement: Universal Service

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- ❖ Must serve all
- ❖ Funded by explicit and implicit subsidies to achieve “affordability”
- ❖ Again, only applies to essential services
  - ❖ Telephone in 1910
  - ❖ Broadband in 2010 (in areas of only one provider)

# Common Carrier Obligations

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1. Rates must be non-discriminatory (cost-based is OK)
2. Overall rate regulation (no excessive profits)
3. Control over entry and exit
4. Obligated to offer reasonable service

# Common Carrier Regulation

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Managing monopolist entry into  
new telecommunications markets  
source of controversy 1970 - 2000..



# Common Carrier Regulation

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Still very controversial today...



# Market Failure Justifications (cont'd)

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## 2. Network effects — demand-side phenomenon

- ✿ Value increases with the number of other consumers
- ✿ Occurs not only with communications services, but platforms
- ✿ Addressed through interoperability mandates and interconnection requirements

# Market Failure Justifications

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## 3. Public good

- ❖ Product or service for which demand is nonrivalous
- ❖ Marginal costs of next consumer is zero, but still need to recover costs - potential to underproduce
- ❖ Concern to television broadcasting

# Additional Justifications

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- ✿ Well-functioning market still does not provide the communications services needed by society
- ✿ Universal service
- ✿ Lack of “high-value” services such as 911, government cable channels, children’s TV programming, etc...
- ✿ Net neutrality

# Regulatory Challenges

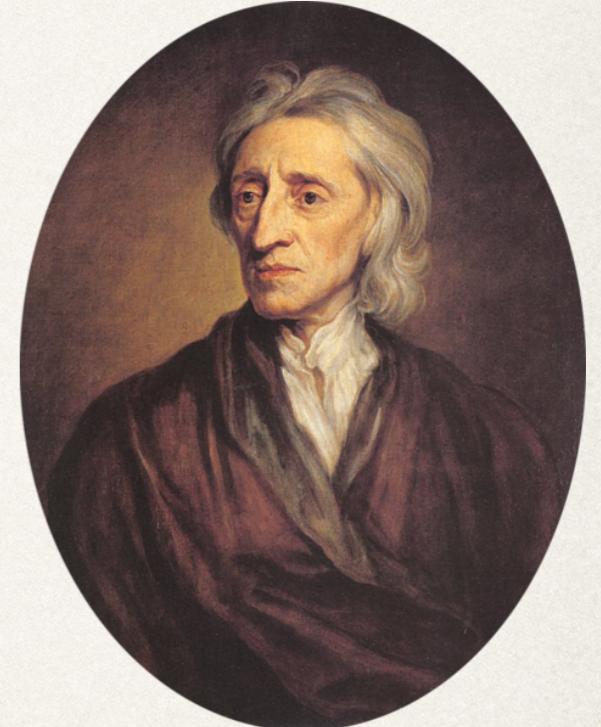
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- ✿ Direct costs (e.g., \$350M FCC budget)
- ✿ Obtaining the correct information
- ✿ Creating market distortions
- ✿ Gaming the regulatory system (e.g., public choice theory assuming government actors maximize their own private goals)

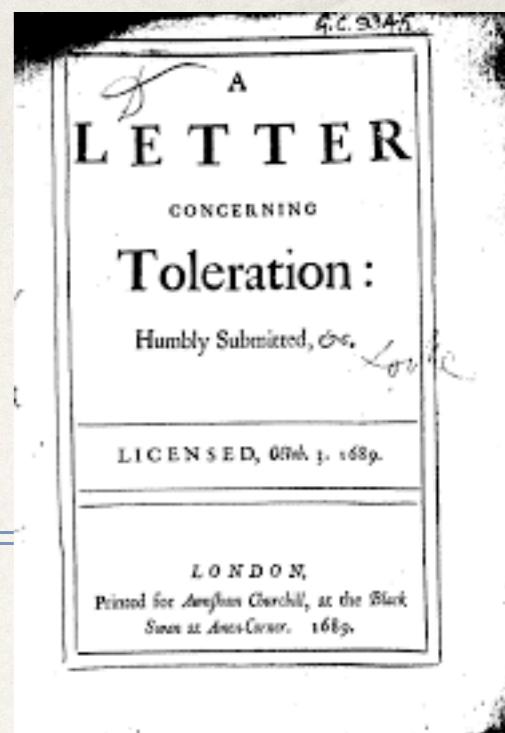
# Characteristics of Government

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- ❖ John Locke (1632–1704) — how to protect individual rights
  - ❖ Government action only takes place as result of general laws that apply to a spectrum of individuals
  - ❖ Laws voted by representatives of people
  - ❖ Implemented by executive
  - ❖ Violations by judiciary
- ❖ Courts can determine legality of the law (both executive and legislative)
- ❖ Due process of the individual



# Sidebar: John Locke



- ❖ People have rights independent of the laws of any particular society
- ❖ Legitimate political government result of a social contract where people transfer some of their rights to better ensure comfortable enjoyment of their lives, liberty, and property
- ❖ Governments that fail contract can be resisted and replaced with new governments
- ❖ Locke thus important for his defense of right of revolution



# Policy Analysis Framework from Reading

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- ✿ What market failures or other issues are given to justify intervention?
- ✿ What does the government need to know to administer proposed regulations effectively?
- ✿ What are the likely market effects?
- ✿ How will the government assess effectiveness?
- ✿ Who will likely benefit from proposed policies?