UNIT 6

Market Failure and the Role of Government

Externalities, public goods, government intervention, and the measurement of inequality

8–13%	9–11	5
EXAM WEIGHTING	CLASS PERIODS	TOPICS IN UNIT

Teacher presentation · Aligned to the College Board Course and Exam Description

What This Unit Covers

TOPICS IN THIS UNIT

- 6.1 Socially Efficient and Inefficient Market Outcomes
- 6.2 Externalities
- 6.3 Public and Private Goods
- 6.4 Government Intervention in Different Market Structures
- 6.5 Inequality

BIG IDEAS

- POL — Market Inefficiency and Public Policy: How do markets fail?
- What role should the government play in markets?

WHY IT MATTERS

Perfectly competitive markets allocate resources efficiently, but real markets often fail. This unit examines the conditions under which markets fail, the effectiveness of government policies designed to correct those failures, and how economic inequality is measured.

8–13% of the AP Exam multiple-choice and free-response score

TOPIC 6.1

Socially Efficient and Inefficient Market Outcomes

Enduring Understanding POL-2 — Competitive markets allocate efficiently, but imperfect competition often does not.

LEARNING OBJECTIVES: POL-2.A–C — Social efficiency, how private incentives create inefficiency, and deadweight loss.

Social Efficiency and the Optimal Quantity

The Socially Optimal Quantity

The optimal quantity of a good occurs where the marginal SOCIAL benefit of the last unit equals the marginal SOCIAL cost of producing it — this maximizes total economic surplus.

When the Market Gets It Right

Market equilibrium quantity equals the socially optimal quantity only when ALL social benefits and costs are internalized by the participants in the market.

When the Market Gets It Wrong

If some costs or benefits are NOT internalized — they fall on outsiders — the market quantity will differ from the socially optimal quantity.

Sources of Market Inefficiency

Rational agents respond to PRIVATE costs and benefits — which can lead to socially undesirable outcomes.

Market Power

Monopoly, oligopoly, and monopolistic competition restrict output and set price above marginal cost — producing less than the efficient quantity.

Externalities

Negative or positive externalities mean costs or benefits fall on third parties, so private decisions do not reflect the full social cost or benefit.

Public Goods & Asymmetric Information

Insufficient production of public goods, and asymmetric information between buyers and sellers, also cause equilibrium to deviate from the efficient allocation.

TOPIC 6.2

Externalities

Enduring Understanding POL-3 — Private incentives can fail to account for all socially relevant considerations.

LEARNING OBJECTIVES: POL-3.A — Define externalities and how private markets ignore social costs and benefits. POL-3.B — Corrective policies.

What Is an Externality?

Externalities Defined

An externality is a cost or benefit that falls on a THIRD PARTY not involved in the transaction. Externalities are either negative (costs) or positive (benefits).

Why They Arise

Externalities arise from a lack of well-defined property rights and/or high transaction costs that prevent the affected parties from bargaining a solution.

Private vs. Social

In the presence of externalities, rational agents respond to PRIVATE costs and benefits, ignoring the EXTERNAL costs and benefits — so the market quantity is not socially optimal.

Negative Externalities: Overproduction

With a negative externality of production, the marginal social cost exceeds the marginal private cost.

- Marginal social cost (MSC) lies ABOVE marginal private cost (MPC) — the gap is the external cost.
- The market produces where MPC meets demand — TOO MUCH (Qmkt above the optimal quantity).
- The socially optimal quantity is where MSC meets demand (Qopt).
- Overproduction creates a DEADWEIGHT LOSS — units produced whose social cost exceeds their social benefit.

KEY TAKEAWAY

A negative externality means the market OVERPRODUCES: Qmkt exceeds Qopt, creating deadweight loss.

Positive Externalities: Underproduction

With a positive externality of consumption, the marginal social benefit exceeds the marginal private benefit.

- Marginal social benefit (MSB) lies ABOVE marginal private benefit (MPB) — the gap is the external benefit.
- The market produces where MPB meets supply — TOO LITTLE (Qmkt below the optimal quantity).
- The socially optimal quantity is where MSB meets supply (Qopt).
- Underproduction creates a DEADWEIGHT LOSS — beneficial units that society values but the market does not produce.

KEY TAKEAWAY

A positive externality means the market UNDERPRODUCES: Qmkt is below Qopt, creating deadweight loss.

Correcting Externalities with Policy

Well-designed policy internalizes the externality — making private decision-makers face the full social cost or benefit.

- A per-unit TAX equal to the external cost shifts MPC up to MSC — correcting a negative externality.
- A per-unit SUBSIDY equal to the external benefit shifts MPB up to MSB — correcting a positive externality.
- Other tools: environmental regulation, public provision of the good, and assigning property rights.
- The Coase theorem: if property rights are clear and transaction costs are low, private parties can bargain to the efficient outcome themselves.

KEY TAKEAWAY

Tax a negative externality, subsidize a positive one — set the policy equal to the external effect to reach the socially optimal quantity.

TOPIC 6.3

Public and Private Goods

Why some goods will not be provided by private markets at all.

LEARNING OBJECTIVES: POL-3.C — Define whether goods are rival and/or excludable; explain the free-rider problem.

Classifying Goods: Rivalry and Excludability

Two properties define every good — whether it is RIVAL in consumption and whether it is EXCLUDABLE.

Private Goods

RIVAL and EXCLUDABLE — one person's use prevents another's, and non-payers can be kept out. Most goods (food, clothing) are private goods, and markets supply them well.

Public Goods

NON-RIVAL and NON-EXCLUDABLE — one person's use does not reduce availability, and non-payers cannot be excluded. National defense is the classic example.

Common Resources

RIVAL but NON-EXCLUDABLE — open-access resources like ocean fisheries. Because no one can be excluded, individuals overconsume them.

The Free-Rider Problem

The Free-Rider Problem

Because public goods are non-excludable, rational agents have an incentive to FREE RIDE — to enjoy the good without paying for it.

Why Markets Underprovide Public Goods

If everyone free rides, no one pays, so private firms lack the incentive to produce public goods — leaving the government as essentially the only producer.

Government and Private Goods

Governments sometimes also choose to produce certain private goods — such as education — and provide free access to them, because of their large positive externalities.

TOPIC 6.4

Government Intervention in Different Market Structures

Enduring Understanding POL-4 — In imperfect markets, well-designed government policy can reduce waste.

LEARNING OBJECTIVES: POL-4.A — How government policies alter outcomes in perfectly and imperfectly competitive markets.

Per-Unit vs. Lump-Sum Taxes and Subsidies

Per-Unit Taxes and Subsidies

A per-unit tax or subsidy changes the total price consumers pay, the net price firms receive, equilibrium quantity, surplus, deadweight loss, and government revenue. The impact depends on the elasticities of supply and demand.

Lump-Sum Taxes and Subsidies

A lump-sum tax or subsidy is a fixed amount that does NOT change marginal cost or marginal benefit. It affects only FIXED costs — so it does not change the firm's profit-maximizing quantity or price.

Why the Difference Matters

Because a lump-sum tax leaves marginal cost unchanged, the firm produces the same quantity. A per-unit tax changes marginal cost and therefore changes quantity.

Government Intervention Can Improve Imperfect Markets

When Intervention Helps

Unlike intervention in an already-efficient market, government intervention in an IMPERFECT market can INCREASE efficiency — if the policy correctly addresses the incentives that caused the failure.

Regulating Monopoly

Government can use price regulation to address monopoly inefficiency. A natural monopoly priced at the allocatively efficient quantity (P = MC) earns a loss, so it requires a LUMP-SUM subsidy to keep operating.

Antitrust Policy

Governments use antitrust policy to break up or prevent monopoly power and make markets more competitive.

TOPIC 6.5

Inequality

Enduring Understanding POL-5 — Market outcomes can result in income inequality.

LEARNING OBJECTIVES: POL-5.A — Measures of income and wealth inequality. POL-5.B — Sources of inequality.

Measuring Economic Inequality

Inequality Varies Widely

Income levels and poverty rates vary greatly both across and within groups — by age, gender, and race — and across countries.

The Lorenz Curve

The Lorenz curve plots the cumulative share of income against the cumulative share of households. The further it bows away from the line of perfect equality, the greater the inequality.

The Gini Coefficient

The Gini coefficient summarizes inequality in a single number from 0 (perfect equality) to 1 (perfect inequality). It allows comparison across countries, policies, or time.

Sources of Income and Wealth Inequality

Inequality arises from many interacting factors — in markets and in social institutions.

Marginal Productivity

In a factor market, each factor of production is paid the value of its marginal product. Differences in productivity across workers translate directly into differences in income.

Human and Social Capital

Differences in human capital (education, skills, health) and social capital (networks and connections), along with inheritance, generate income and wealth gaps.

Institutions and Access

Tax structures (progressive vs. regressive), the effects of discrimination, access to financial markets, economic mobility, and bargaining power within firms, unions, and families all shape inequality.

Common Pitfalls & Exam Tips

Negative externality = overproduction

MSC lies above MPC; the market produces too much. The optimal quantity is where MSC meets demand.

Positive externality = underproduction

MSB lies above MPB; the market produces too little. The optimal quantity is where MSB meets supply.

Tax negatives, subsidize positives

Set a per-unit tax or subsidy equal to the external cost or benefit to reach the socially optimal quantity.

Rival and excludable

Private goods are both; public goods are neither; common resources are rival but not excludable.

Per-unit vs. lump-sum

A per-unit tax changes marginal cost and quantity; a lump-sum tax affects only fixed costs, leaving quantity unchanged.

Lorenz & Gini: interpret only

Know what the Lorenz curve and Gini coefficient measure — but the exam does not ask you to draw or calculate them.

Unit 6 — Key Takeaways

1. A market is socially efficient where marginal social benefit equals marginal social cost; many forces cause it to fail.
2. Negative externalities cause overproduction; positive externalities cause underproduction — both create deadweight loss.
3. Correct externalities by internalizing them: tax negative externalities, subsidize positive ones, or assign property rights.
4. Public goods (non-rival, non-excludable) suffer the free-rider problem, so government is typically their only producer.
5. In imperfect markets, well-designed intervention can improve efficiency; per-unit and lump-sum taxes differ in their effects.
6. Inequality is measured by the Lorenz curve and Gini coefficient and arises from productivity, capital, and institutions.