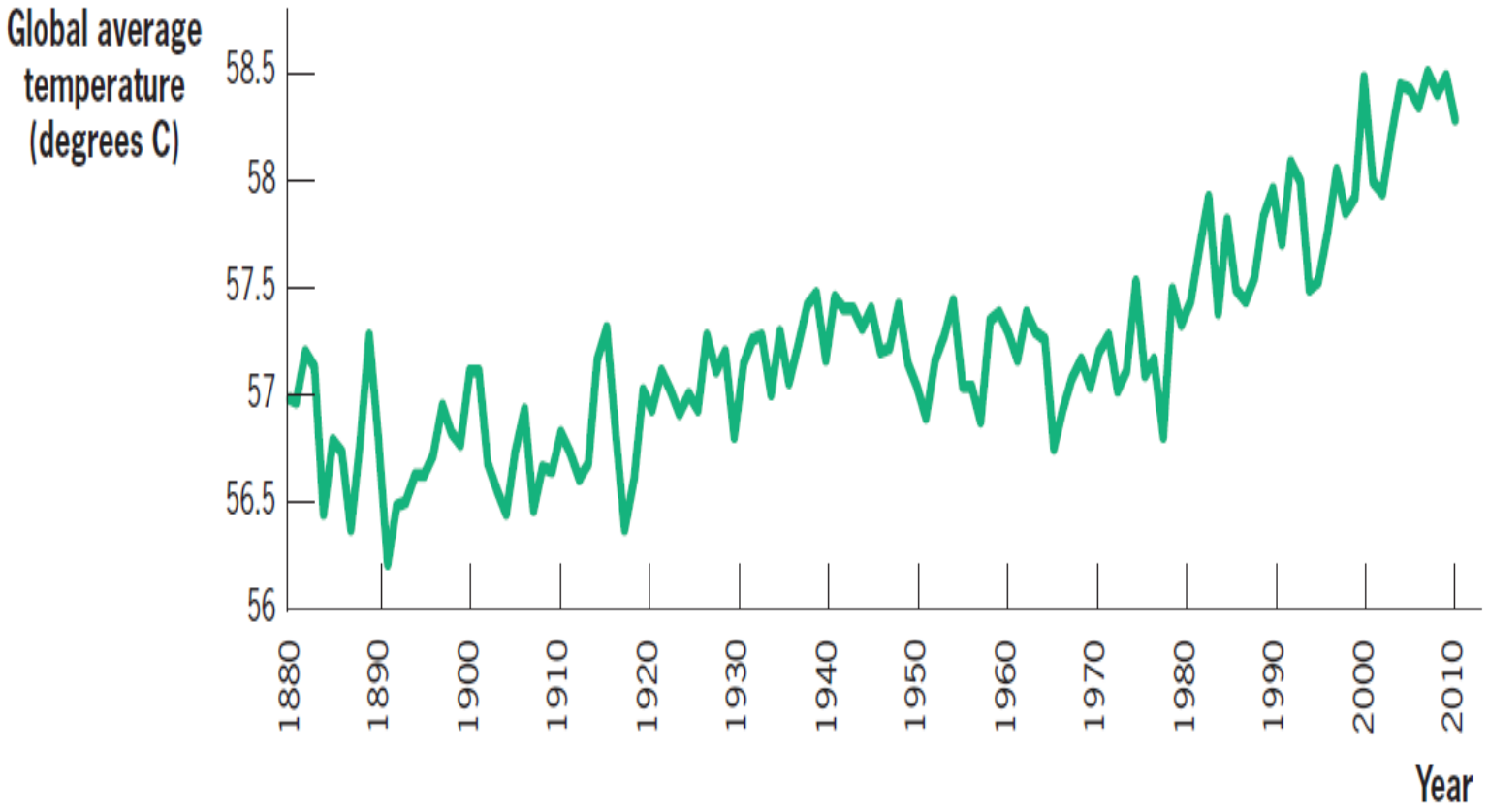
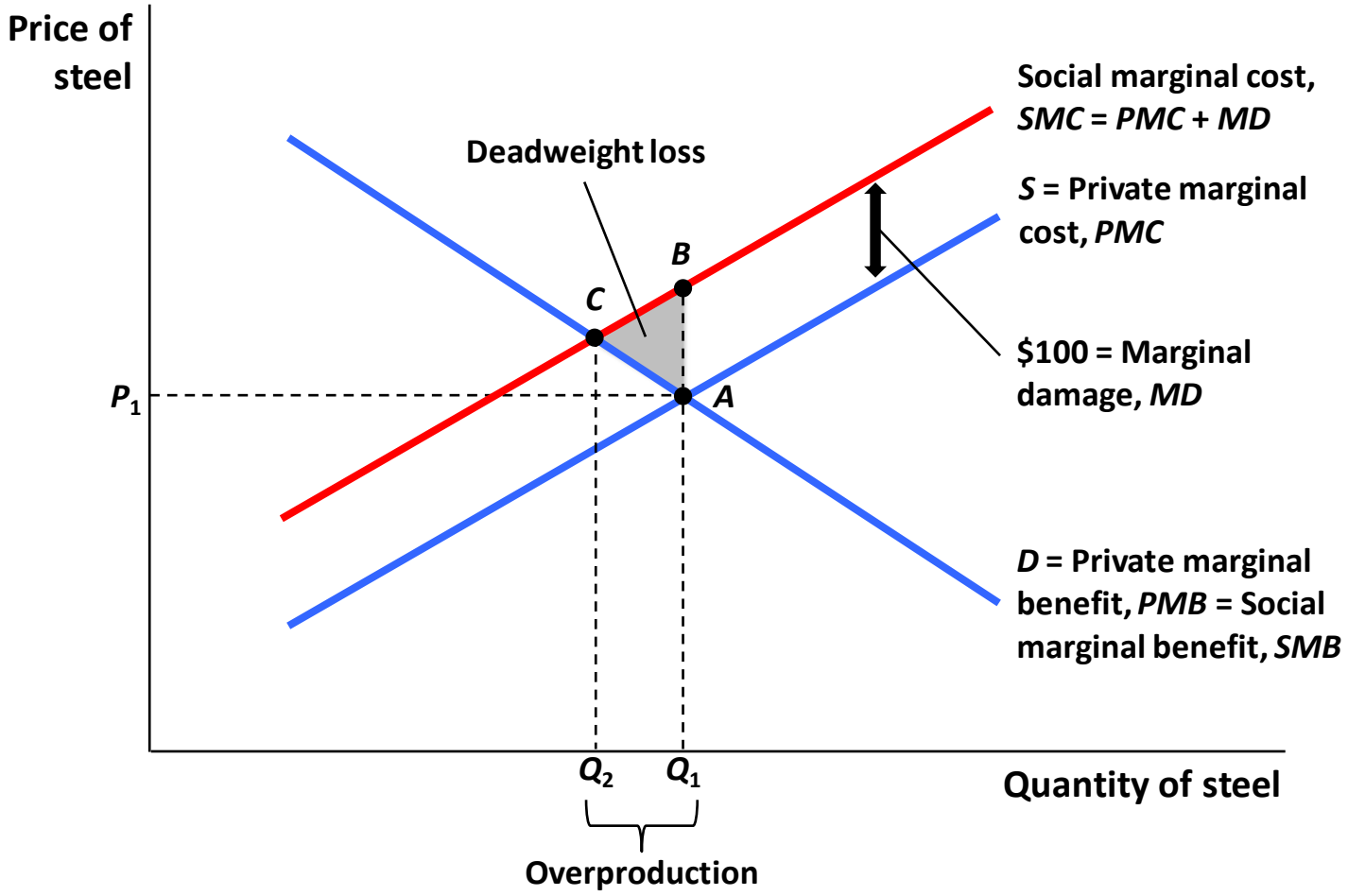
Average Global Temperature, 1880–2011



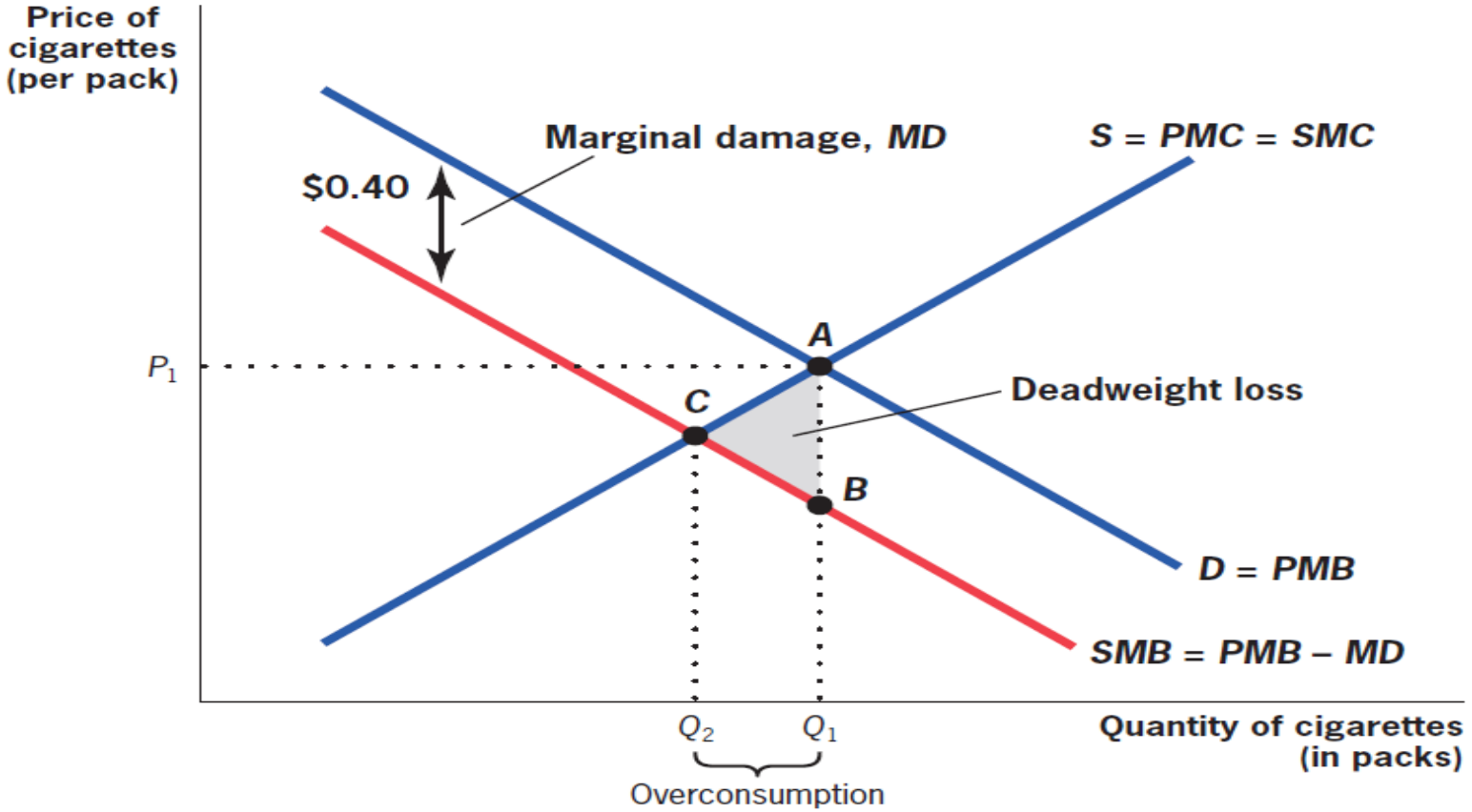
5.1

Economics of Negative Production Externalities: Steel Production



5.1

Economics of Positive Production Externalities: Oil Exploration



5.1

APPLICATION: The Externality of SUVs

The consumption of large cars such as SUVs produces three types of negative externalities:

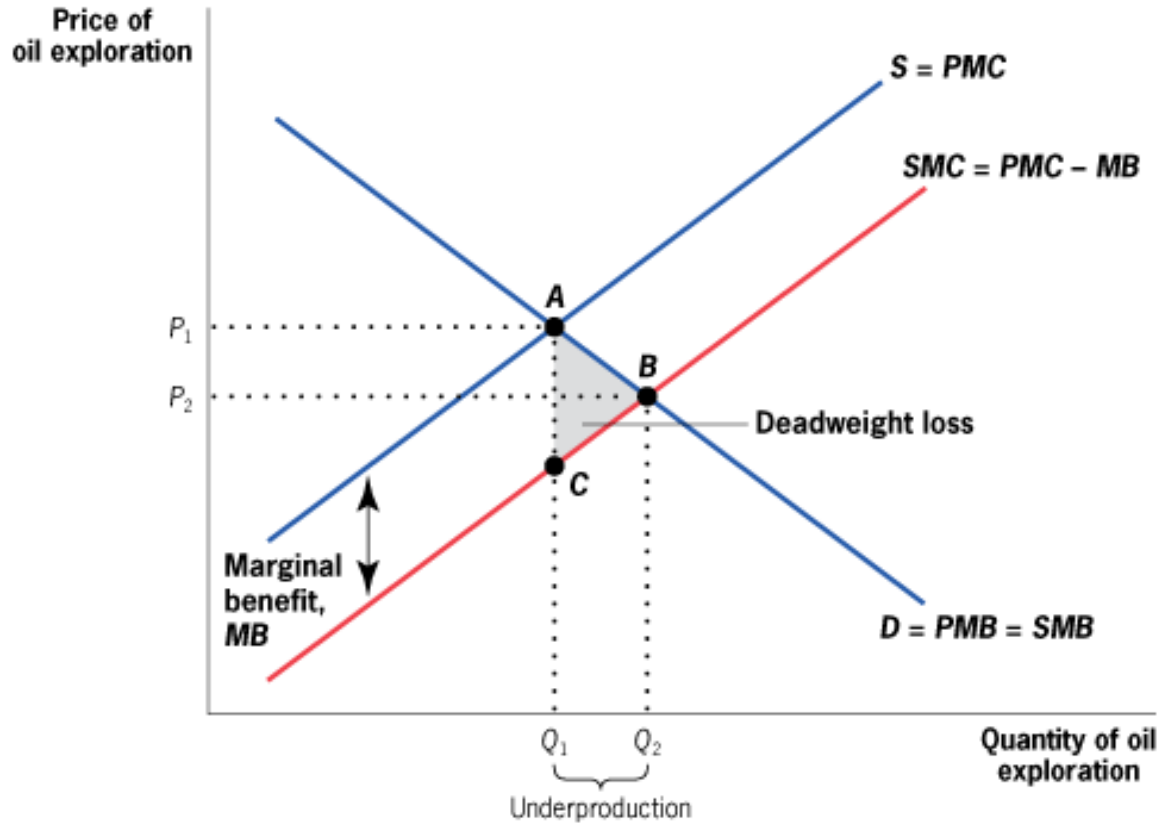
1. Environmental externalities: Compact cars get 25 miles/gallon, but SUVs get only 20.
2. Wear and tear on roads: Larger cars wear down the roads more.
3. Safety externalities: The odds of having a fatal accident quadruple if the accident is with a typical SUV and not with a car of the same size.

5.1

Externality Theory

Positive Externalities

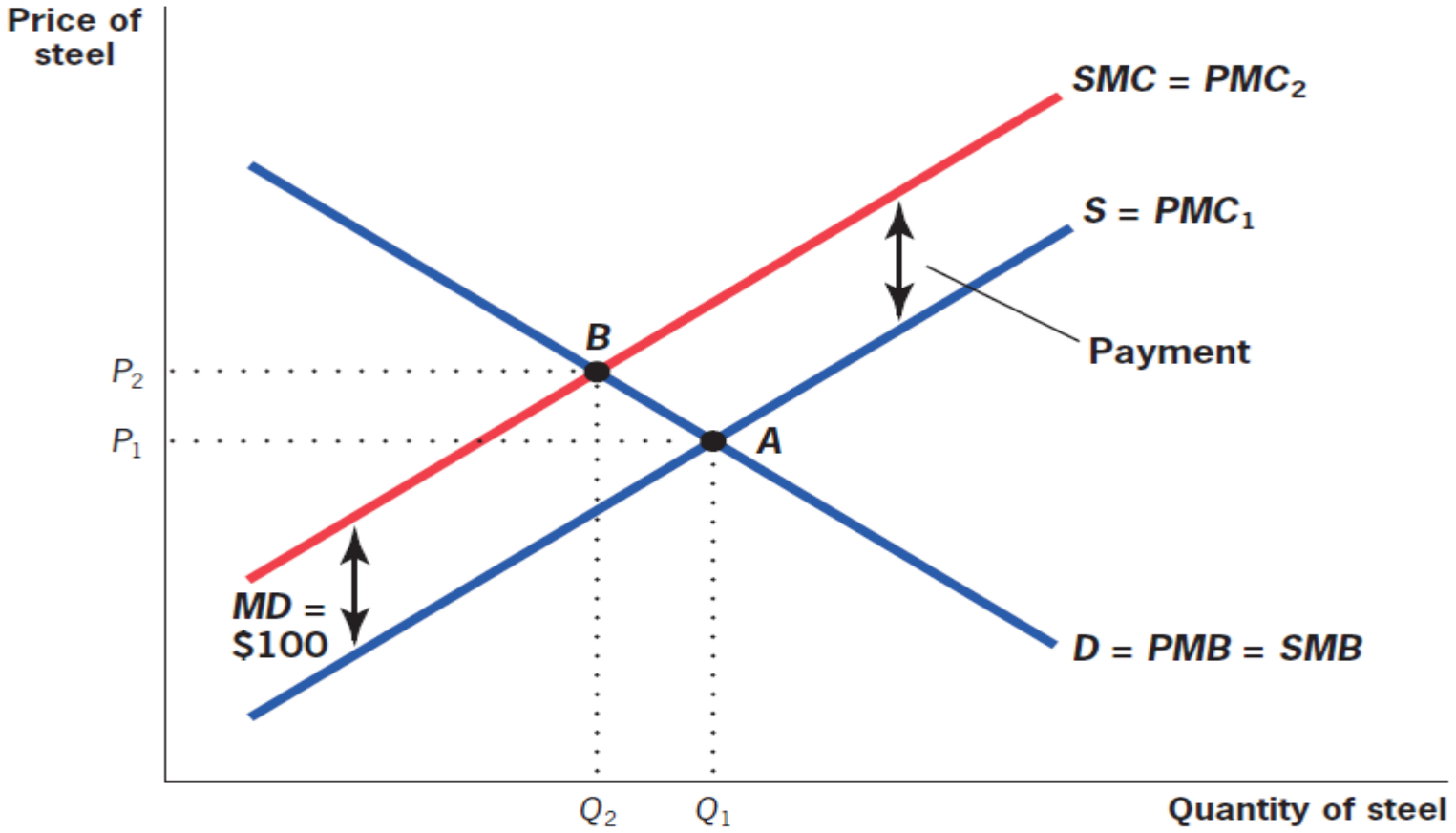
■ FIGURE 5-4



Market Failure Due to Positive Production Externality in the Oil Exploration Market • Expenditures on oil exploration by any company have a positive externality because they offer more profitable opportunities for other companies. This leads to a social marginal cost that is below the private marginal cost, and a social optimum quantity (Q_2) that is greater than the competitive market equilibrium quantity (Q_1). There is underproduction of $Q_2 - Q_1$, with an associated deadweight loss of area *ABC*.

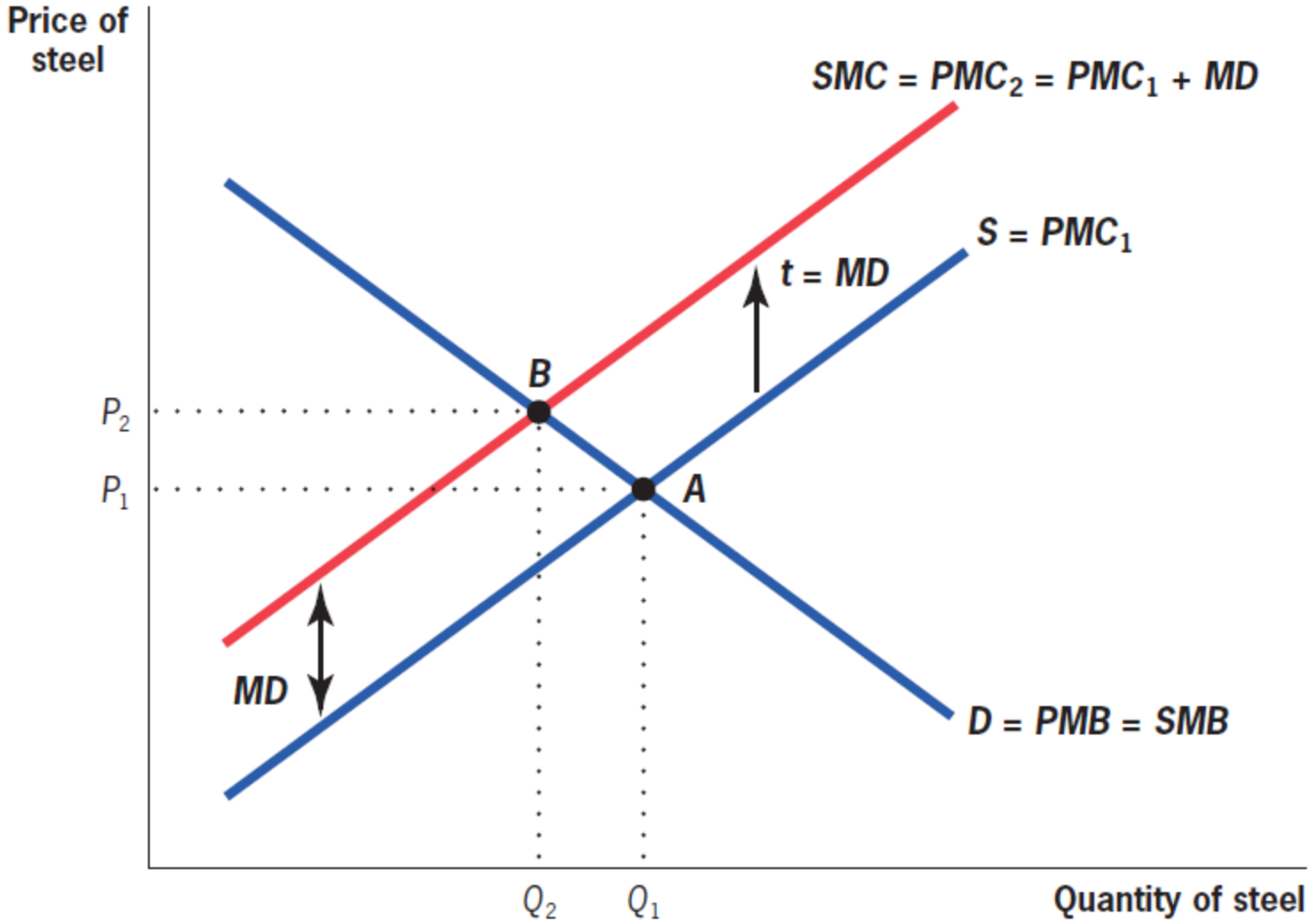
5.2

The Solution: Coasian Payments



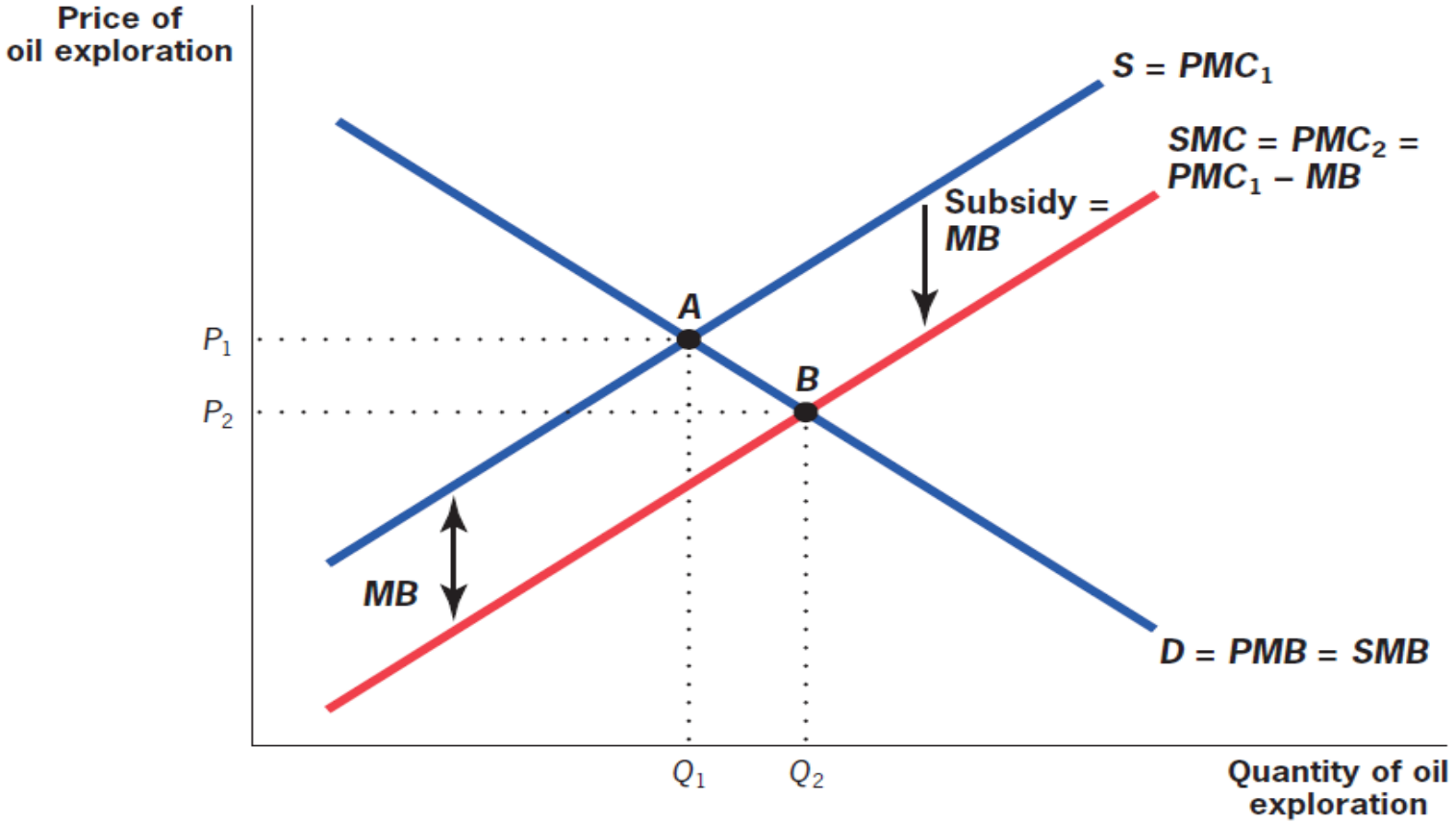
5.3

Corrective Taxation



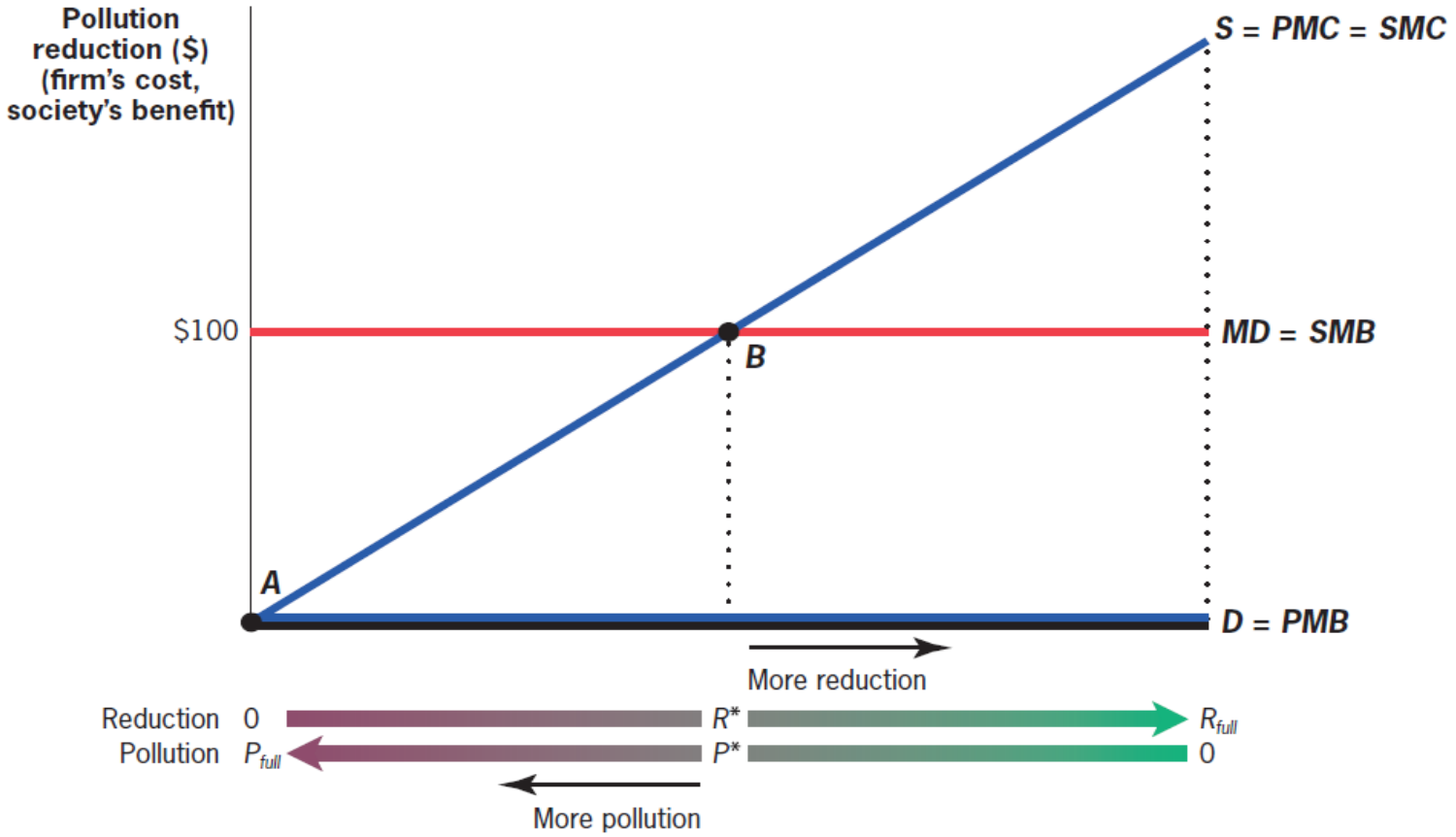
5.3

Corrective Subsidies



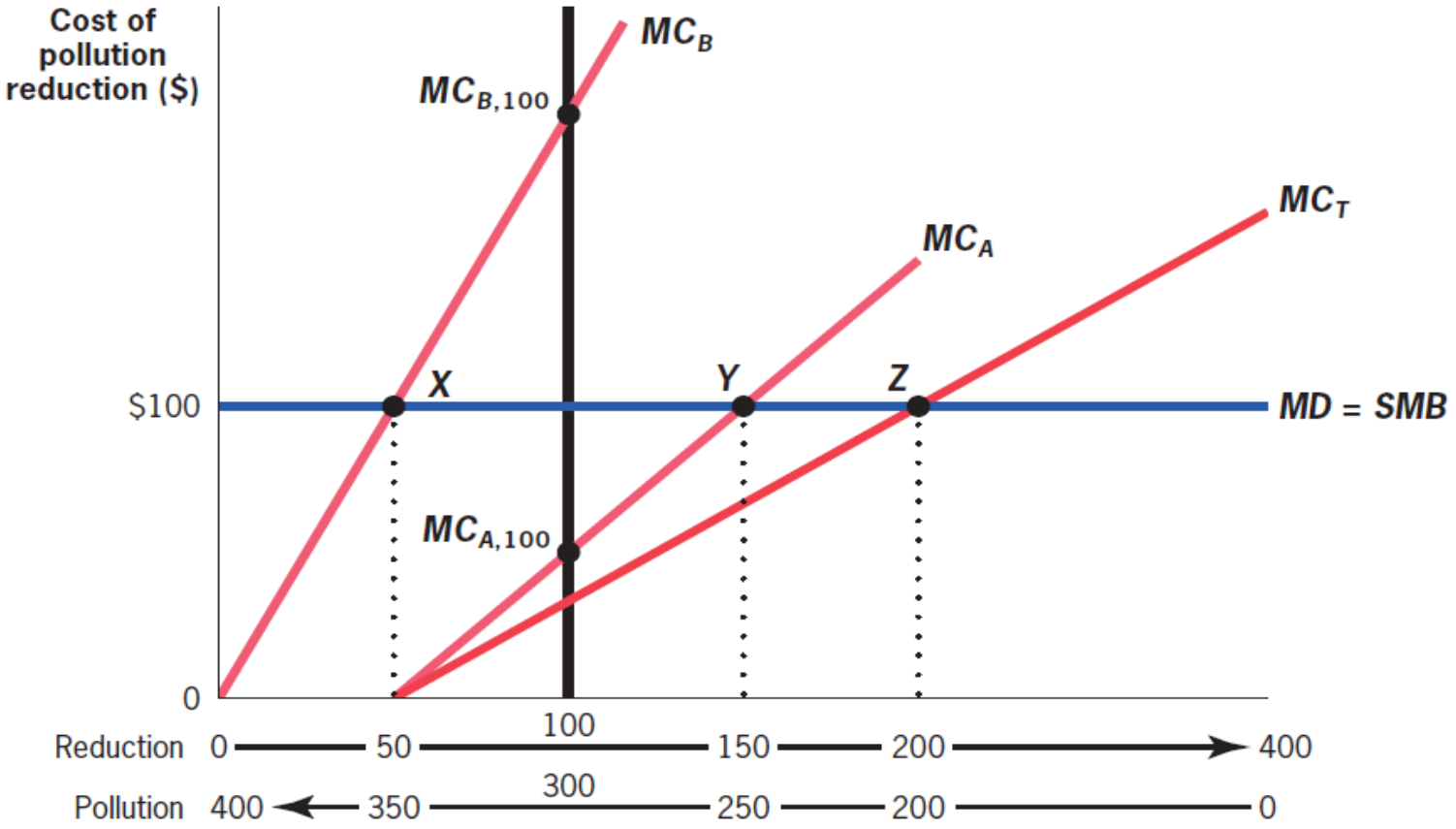
5.4

Distinctions Between Price and Quantity Approaches to Addressing Externalities: Basic Model



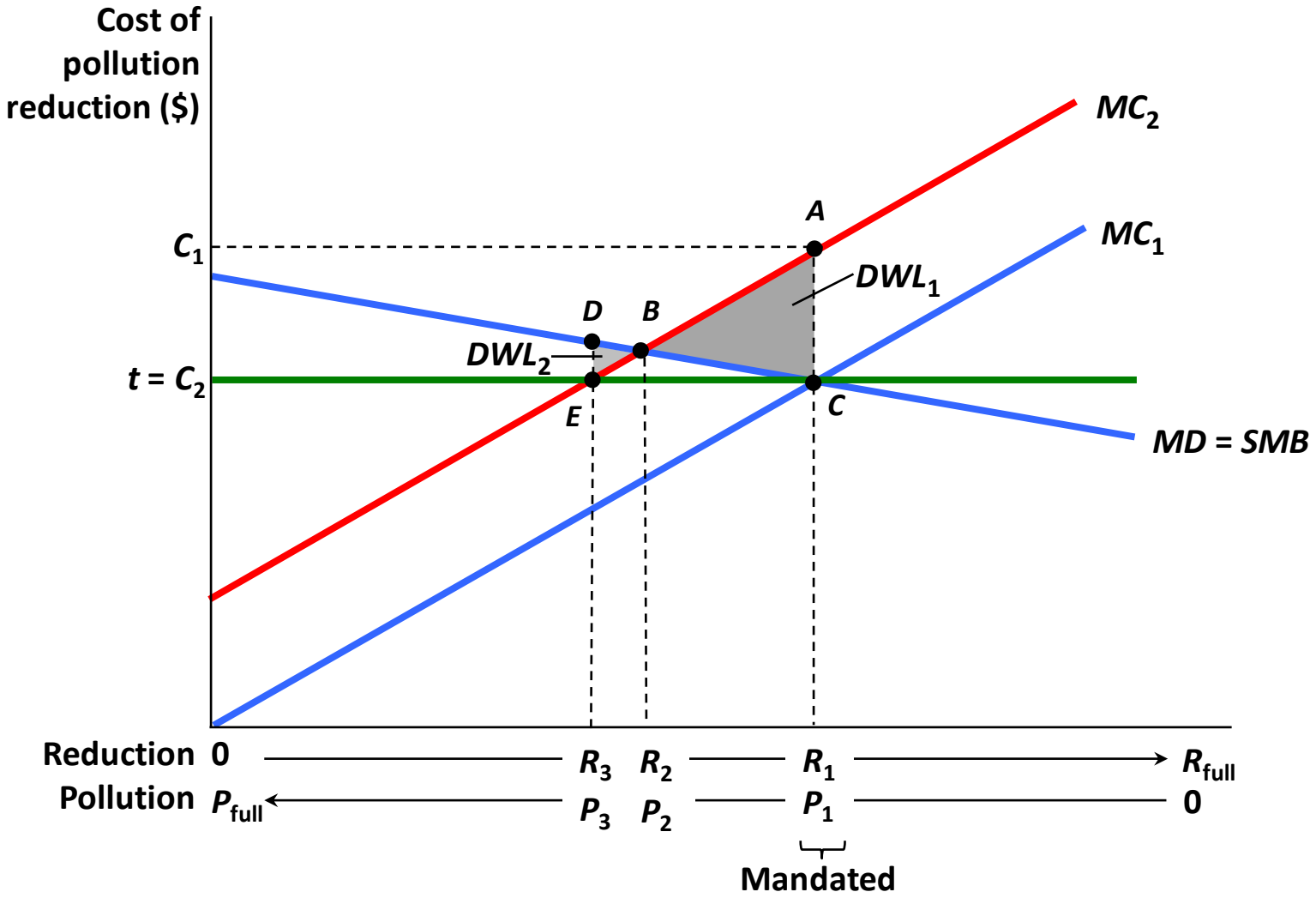
5.4

Multiple Plants with Different Reduction Costs



5.4

Uncertainty About Costs of Reduction: Case 1: Flat *MD* Curve (Global Warming)



5.4

Uncertainty About Costs of Reduction: Case 2: Steep *MD* Curve (Nuclear leakage)