

The Production, Cost and Technology of Health Care (Part 2)

EE 474 Health Economics

Semester 1/2012

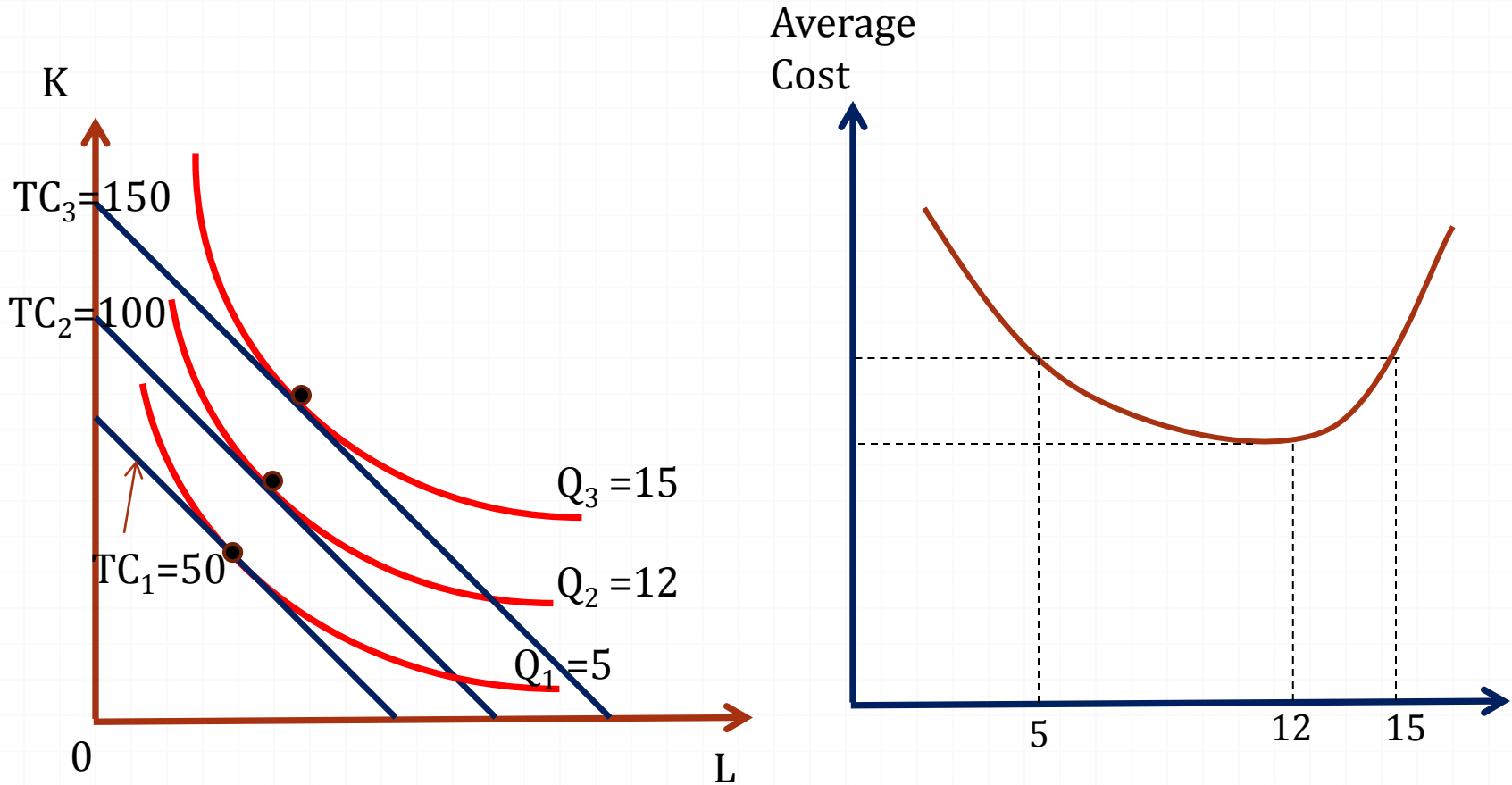
Topics

- Productive Efficiency
- Health Care Technological Changes
 - Technological Changes and Costs
 - Price Adjustment When Technology Change Occurs
 - Diffusions of New Health Care Technologies

Productive Efficiency

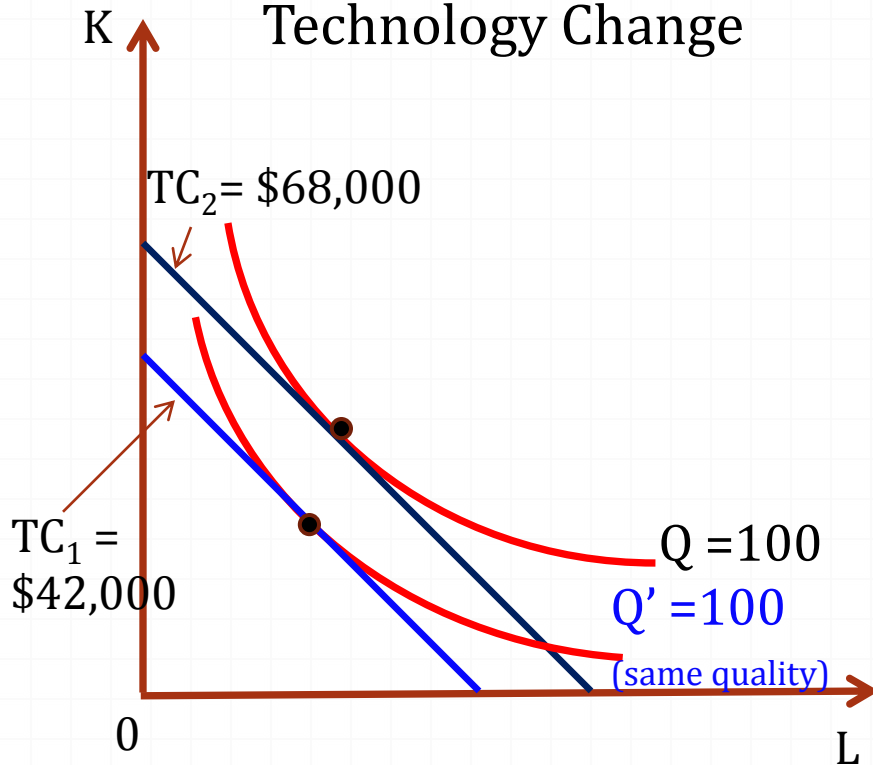
- o Last time, we talked about **technical efficiency** and **allocative efficiency**.
- o Allocative efficiency occurs when the isoquant is tangent to the isocost curve.
 - o There could be many different levels of output that the total costs are minimized.
- o Of all **the least cost levels of output**, the “most least cost” level of output is **productively efficient**.

Productive Efficiency

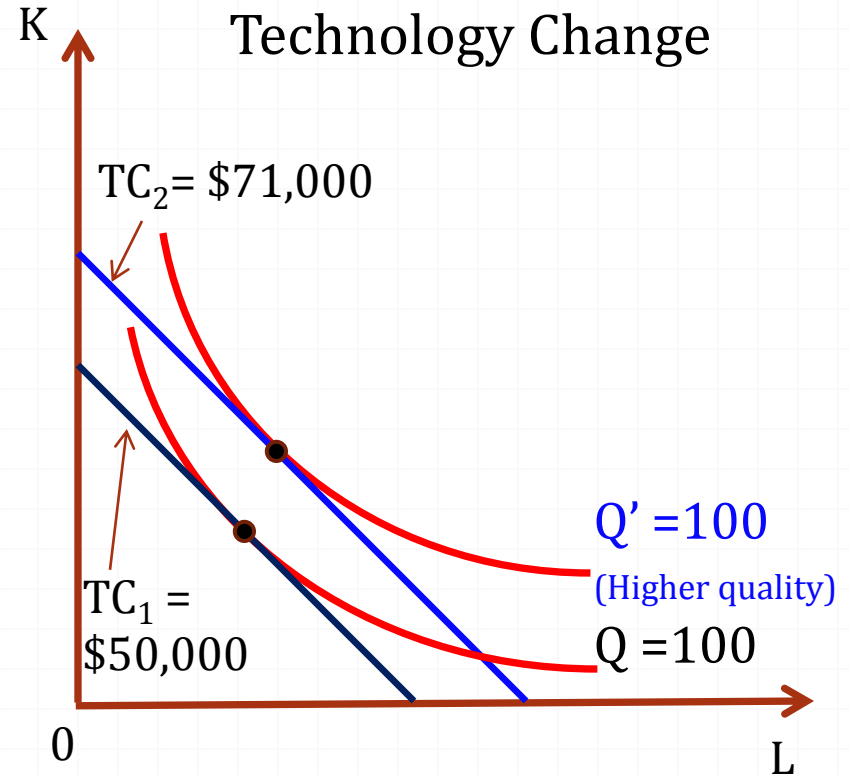


Technological Changes and Costs

Cost-Decreasing due to
Technology Change



Cost-Increasing due to
Technology Change



Health Care Prices with Technological Change Occurs

- Question: Whether **technological changes** really cause the **inflation** in the health care sector?
 - Not necessarily!
 - New treatments are *not* included in the fixed basket when calculating CPI.
 - Improvement in the treatment effectiveness could be omitted.
 - Example: New treatments reduce the length of hospital stay. By putting more weight on the room charge, the price index is overestimated.
 - Not taken into account the improvement in quality of life of the patients.

Adjustment in Health Care Prices

- Example: Cutler et al (1999) developed two quality adjusted price indexes of myocardial infarction treatment

Unadjusted Indexes	Avg. Price Changes	Quality-Adjusted Indexes	Avg. Price Changes
Official MCPI	3.4%	Quality (extra years of life)	-1.5%
Heart attack episode approach	2.8%	Quality (extra QALYs)	-1.7%

- Technological change has *improved the quality of treatment*.
- The quality adjustment can prove that the heart attack treatment price is actually *declining*.

Diffusion of New Health Care Technologies

○ Two basic principles guide adopters:

1. Profit channels:

○ Example: Physicians tend to adopt a new surgical technique if they expect to increase their revenues.

➤ Enhancing their prestige

➤ Improving the well-being of their patients.

2. Information channels:

○ Derived originally from sociology discipline

○ Emphasizes the role of friends, colleagues, journals, etc., in informing and encouraging the adoption decision.

○ Other factors affecting diffusion patterns: regulation and timing of the adoption.