

Lecture 8

Pricing II: Sources of Market Power

Learning by doing



15.011/0111 Economic Analysis for Business Decisions
Oz Shy

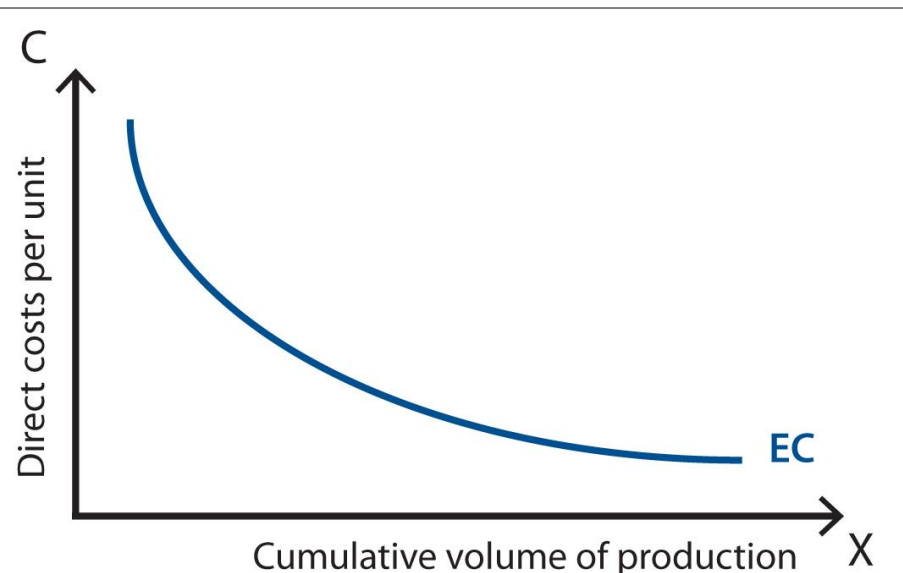
How firms gain and maintain market power and prevent competition

1. Own a patent on a product or a production process (17 years, longer for pharmaceutical)
2. Learning-by-doing
3. First-mover advantage (not always an advantage)
4. Network externalities
5. Loyalty discount (frequent-flier benefits)
6. Seek “protection” from regulators (lobbying)
7. Direct government subsidies (int’l markets)

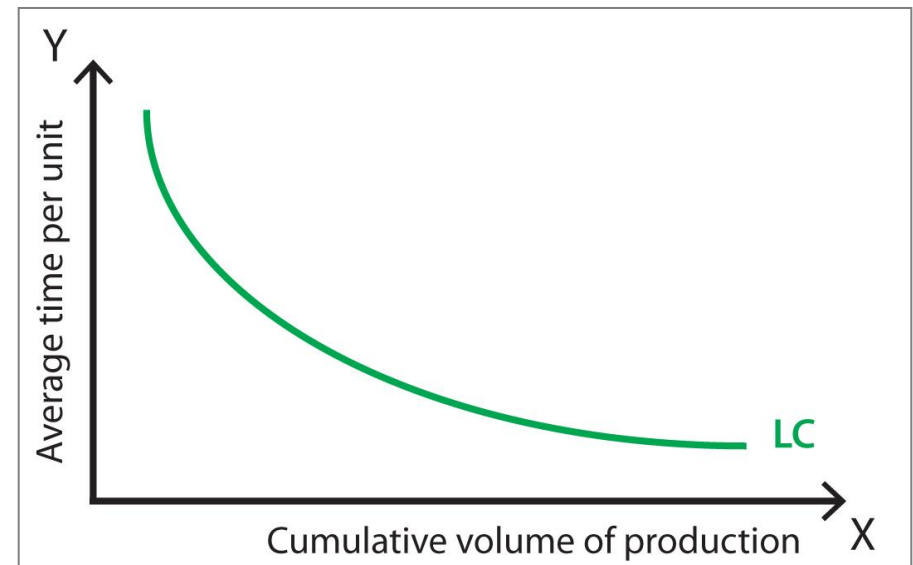
Learning-by-doing: First movers gain cost advantage over new entrants

Note: Most economists use the two terms *interchangeably*. Some authors separate the reduction of labor cost from avg. total cost

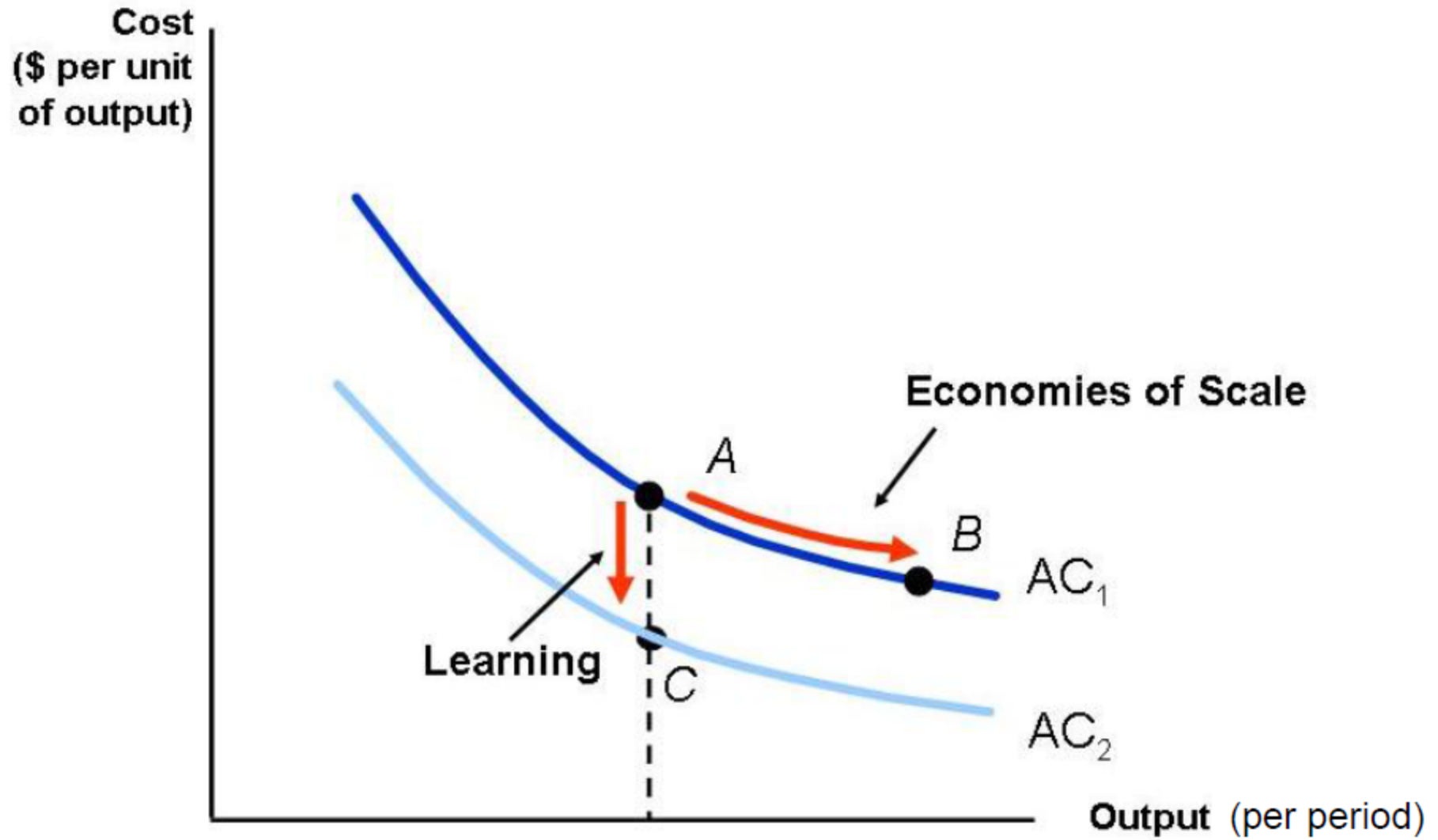
The experience curve:
Average cost declines with the **cumulative** production volume



The learning curve:
Labor productivity increases with the **cumulative** production volume



Learning-by-doing versus economies of scale



Estimating the experience curve

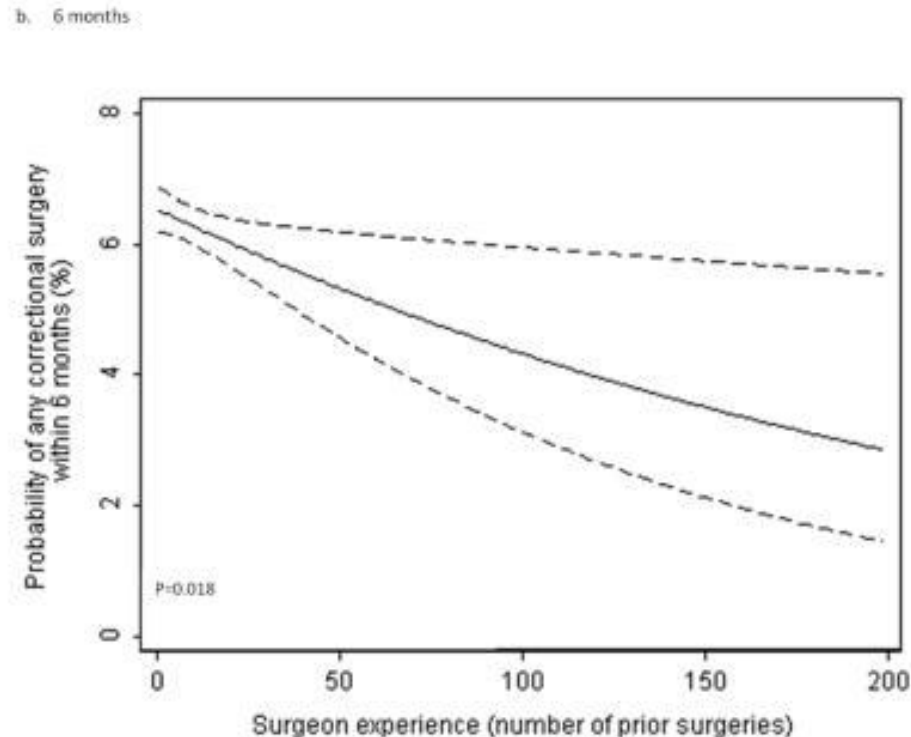
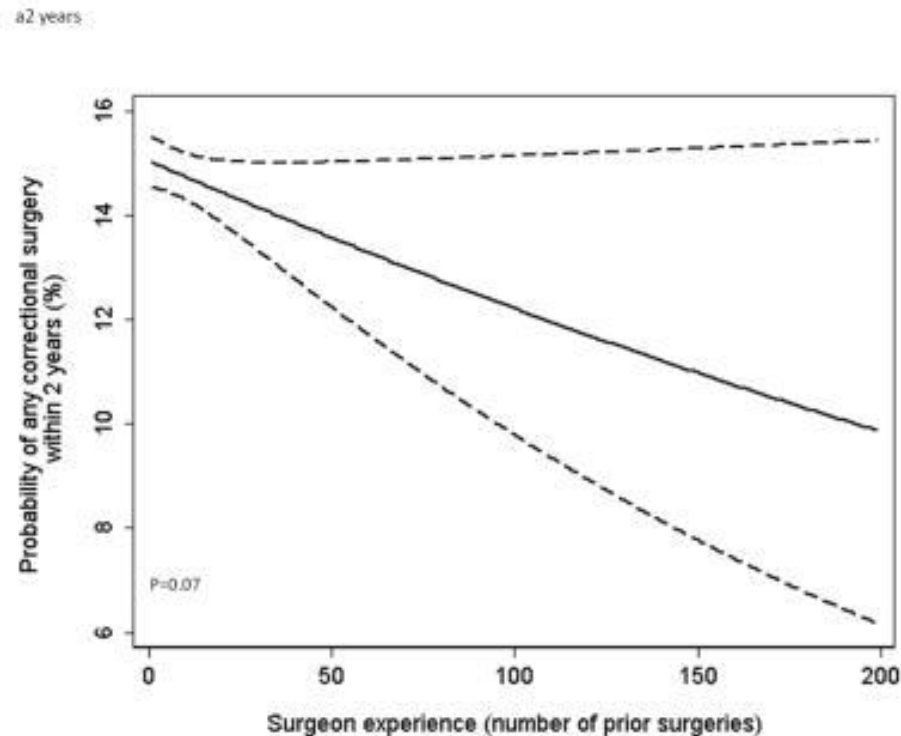
$$ATC_t = a - b \cdot \log(Q_{t-1} + Q_{t-2} + \dots) - c \cdot t$$

Ignoring the error term, average total cost in $t = 2015$ is a function of the sum of all unit produced until 2014. Use similar data for 2014, 2013, ...

If regression shows $b > 0$ ($-b < 0$), experience reduces unit cost

If regression shows $c > 0$ ($-c < 0$), we can conjecture that there has been some (cost-reducing) technological innovation over time

Surgeons' experience curves



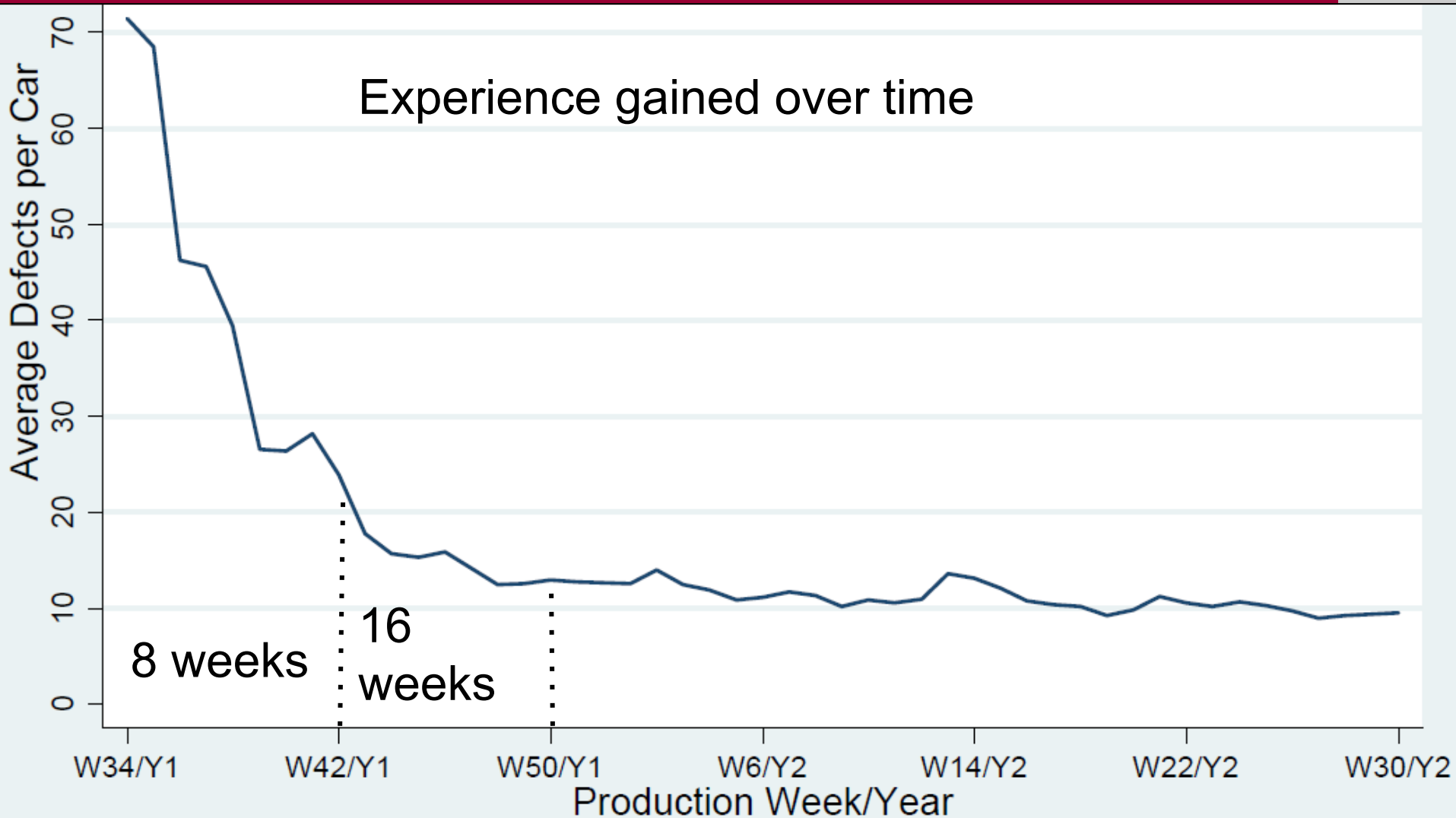
Data: 65 602 adult males who received an AUS btw. 1988-2008

Results: Slow steady decrease in the risk of reoperation with increasing surgeon experience. The risk of reoperative surgery for an inexperienced surgeon, with 5 prior cases, was 24.0%

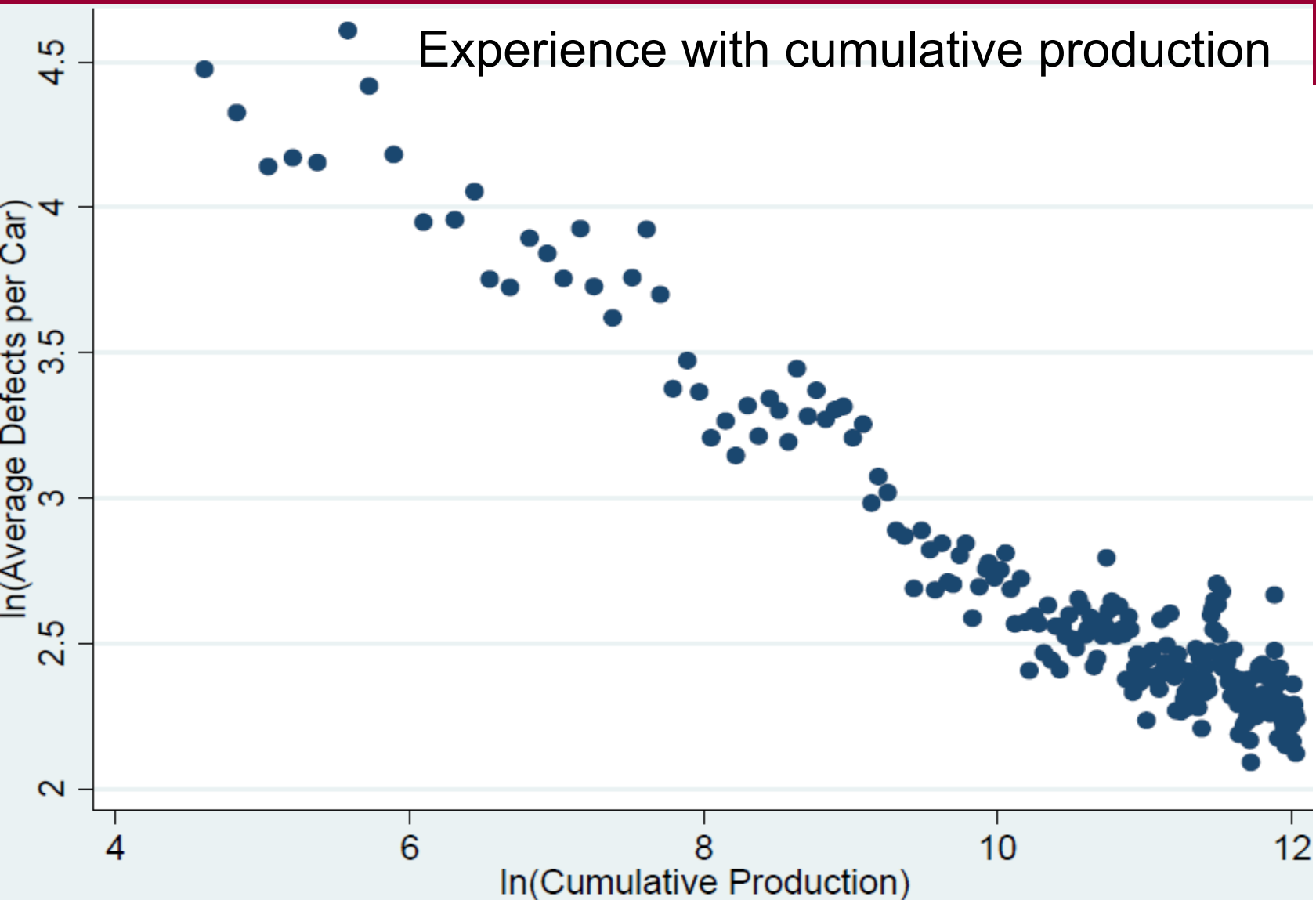
decreased to 18.1% for an experienced surgeon with 100 prior operations

13.2% for a surgeon with 200 prior operations

Average number of defects per car by week



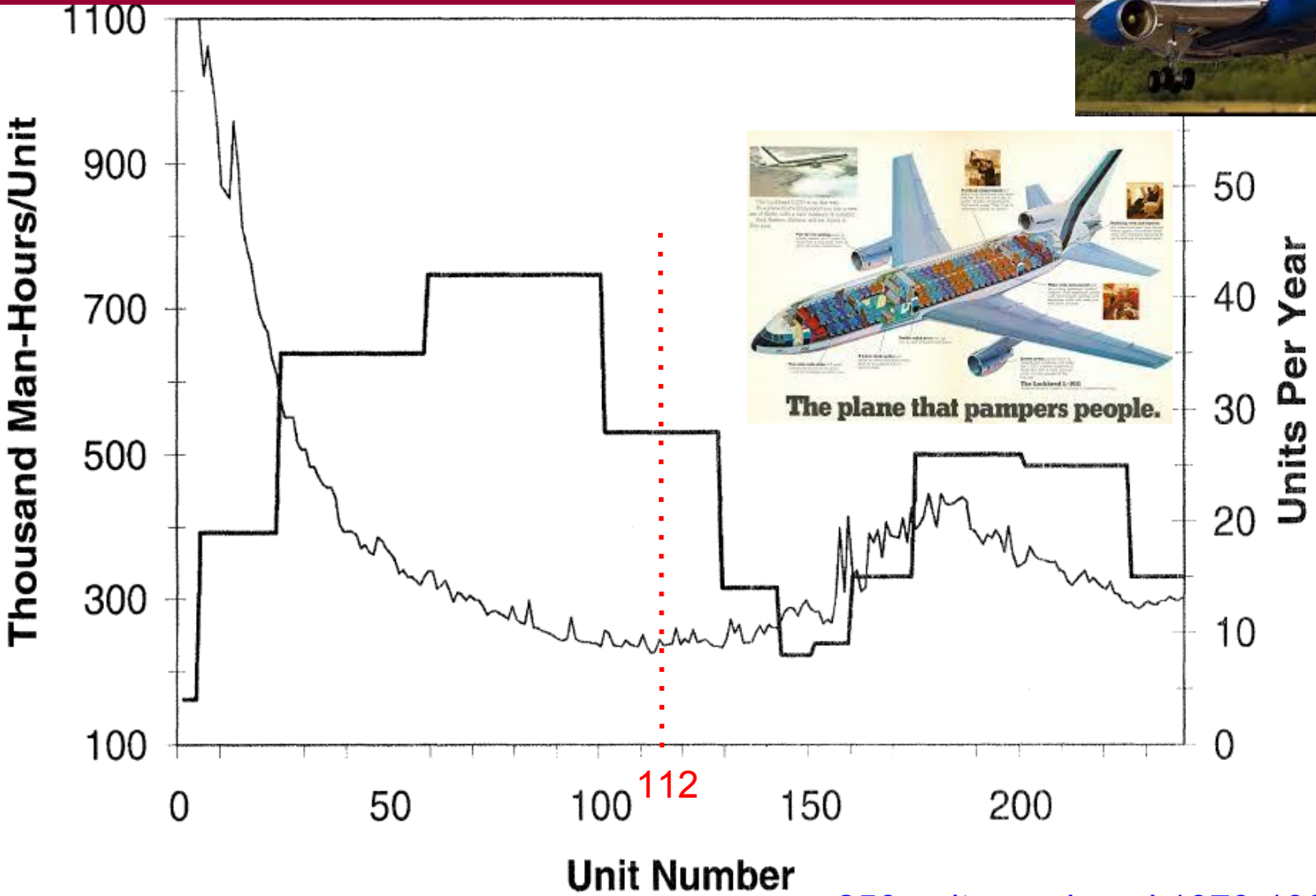
Log Defects per Car vs. Log Production Experience (Cumulative Output), Daily Data



Source: Levitt, List, Syverson, NBER Working Paper No. 18017, April 2012

Learning and forgetting: Aircraft production

Lockheed L-1011 TriStar (commercial aircraft)

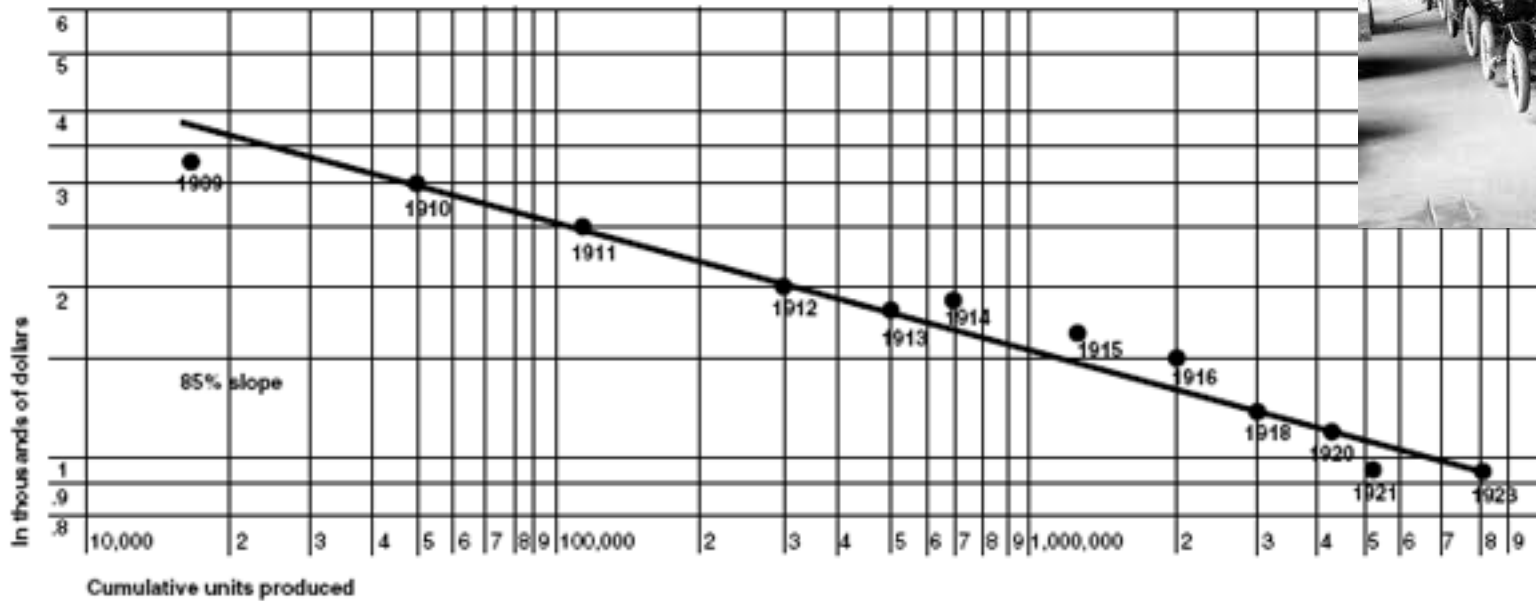


Source: Benkard, *American Economic Review*, 90(4), 2000

250 units produced 1970-1984

Ford's Model T: 1909-1927: Price reduction

EXHIBIT I Price of Model T. 1909-1923 (Average List Price in 1958 Dollars)

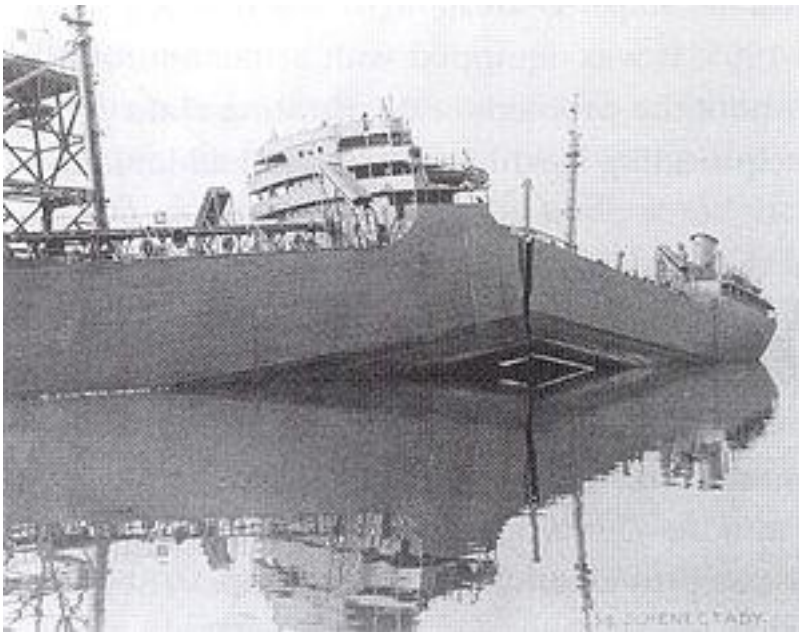
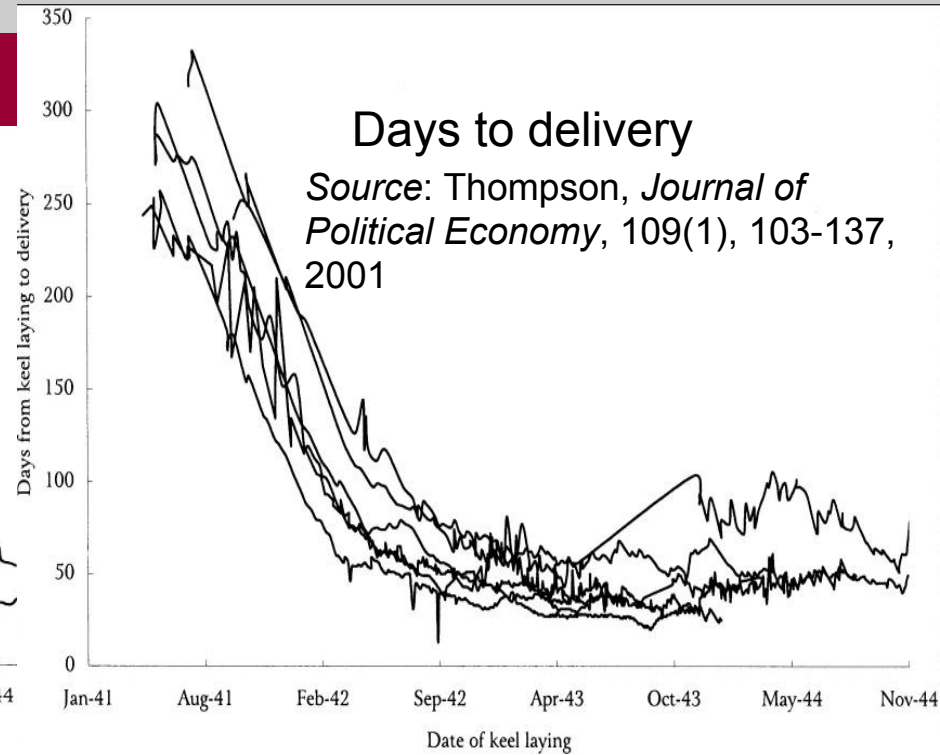
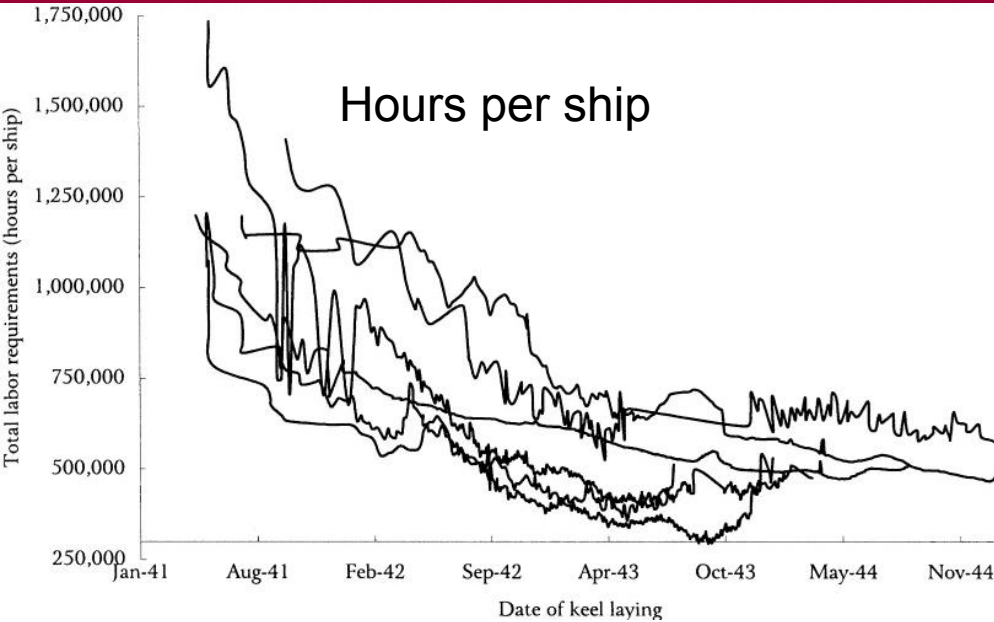


"You can have any color as long as it's black"

Overproduction (lower cost) \Rightarrow lower prices
 \Rightarrow higher demand
But, demand for new models grew
1927: Production ceases
(Model A is introduced)



Ship building



The SS Schenectady was the first tanker constructed by the Kaiser Shipbuilding Company

Construction took 6 months, 2.5 months ahead of schedule

Suffered a hull fracture on 16 January 1943

Was repaired and successfully entered service in April 1943