

### Trade Off

The choices when faced with economic decisions where one has to choose one thing over another → they create opportunity costs

### Every decision involves trade-offs

### Today's choice



Buying a \$7 strawberry smoothie



RESTAURANT \*\*\*







Benefiting from \$7 saved regularly

### **Opportunity Cost**

Whenever you make a trade-off, the thing that you choose not to do is your opportunity cost; the lost benefits an individual, investor, or business misses out on when choosing one alternative over another → what is given up; "the path not taken"

(e.g., you spends three hours and \$20 at the movies the night before an exam > the opportunity cost is time spent studying and that money to spend on

something else)



Theory of Comparative Advantage

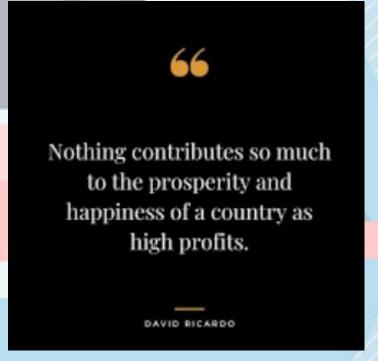
When one nation is better able to produce a good or service at a lower opportunity cost to them than another nation

(e.g., oil-producing nations have a comparative advantage in chemicals because many raw ingredients are produced in the oil distillery process; so Saudi Arabia, Kuwait, and Mexico are competitive with U.S. chemical production firms)

-In the past, comparative advantage occurred more in goods than services because products are easier to export; however, telecommunication technology is making services easier to export (e.g., call centers, banking, and entertainment)

-Theory argues that a country boosts its economic growth the most by focusing on the industry in which it has the most substantial comparative advantage (e.g., England's was cloth, Portugal's was wine in the 18<sup>th</sup> century) →





## Every Country's BIGGEST EXPORTS



### **Productivity**

The amount of a good or service that can be produced in a given amount of time

- -Specialization or division of labor: dividing the production process into different stages, enabling workers to focus on specific tasks
- -Popularized by Adam Smith in An Inquiry into the Nature and Causes of the Wealth of Nations (1776)



### Why is the division of labor more efficient?

- -Workers need less training as they only must master a small number of tasks
- -It is faster to use one particular tool and do one job
- -Time isn't wasted with a worker dropping a tool and then picking up another
- -Workers can gain loyalty and a sense of achievement from their branch of production
- -There is no need to move around the factory; the half-finished good comes to them

-Workers can concentrate on those jobs which best suit their skills and

temperament



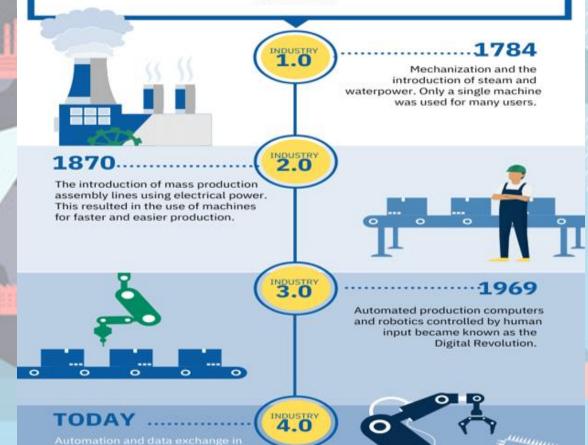
Labor-intensive work:
task/job that requires a
lot of human effort and
physical contact;
typically pays less (e.g.,
farming, factory work)

- -Many labor-intensive jobs are sourced in other countries by the U.S.
- -Mechanization: the use of machines, either wholly or in part, to replace human or animal labor; sometimes the result is the loss of jobs → increased unemployment

Advantage: increases productivity and profit

# INDUSTRY 4.0 THE EVOLUTION OF THE SMART FACTORY

Industry 4.0 will transform manufacturing processes by utilizing interconnected devices that communicate with each other to make decisions, while minimizing and ultimately eliminating human involvement. The layering of cyber-physical systems enabled by 5G wireless technology makes Industry 4.0 possible and the smart factory a reality. As these systems become smarter with the constant increase in access to data; factories will become more ecient, productive, and become more sustainable.



# GUN MAKIN G. PLATE COLXXXII. Eg. 5. Fig. 7. Fig. 7.

### Mechanization

- -Interchangeable parts: replacement parts for equipment that allows one part of a machine to be interchangeable, thus not having to replace the entire machine
- -Brought to America with the musket by Eli Whitney in 1798
- -Mass production: producing a large quantity of goods

Assembly line: specializes labor to massproduce goods in short period of time

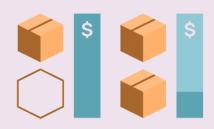
Henry Ford (1914) revolutionized by reducing cost of production and providing a living wage to retain workers (\$5/day for a 40 hour workweek)

### **Growing Businesses**

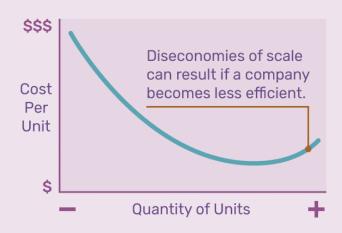
-Economies of scale: a larger business is more efficient than a smaller one because of its ability to do things in larger volume

### **Economies of Scale**

An economics term that describes a competitive advantage that large entities have over smaller entities.



Manufacturing costs can fall 70% to 90% every time the business doubles its output.



the balance



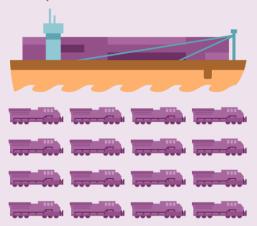
### Internal

The sheer size of the company allowing bulk purchases.



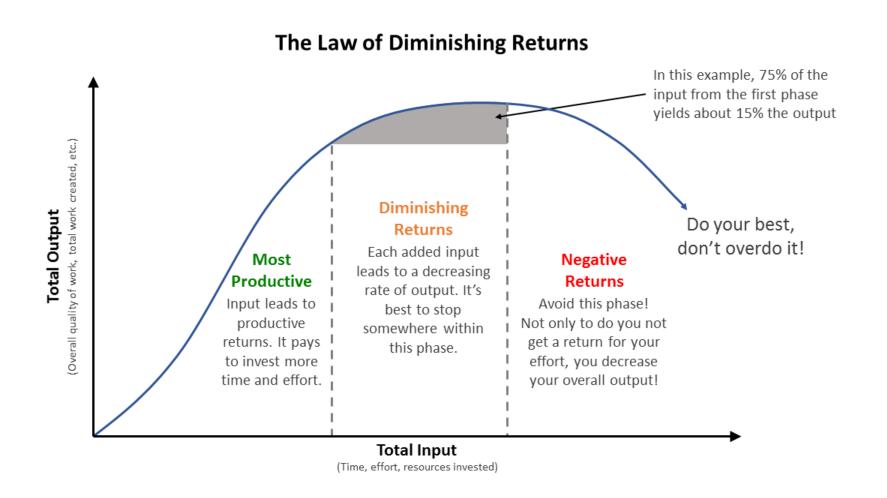
#### **External**

Receiving preferential treatment from government or other external sources.



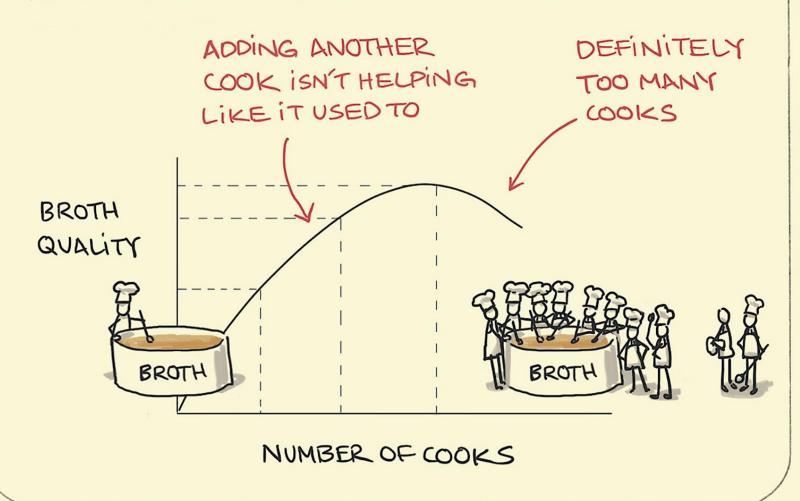
Large shipping companies can use ships that carry as many goods as 16 freight trains.

Law of diminishing returns: the level of return (profit) for additional labor or work will decrease at some point and continue to decrease



### LAW OF DIMINISHING RETURNS

AT SOME POINT MORE OF THE SAME STOPS PAYING OFF



sketchplanations