Name: _____ Period: _____ Date: _____

Unit 7

Weber's Least Cost Theory

Human Geography

Alfred Weber (1868-1958) formulated a theory of industrial location in which an industry is located where it can minimize its costs, and therefore maximize its profits. Weber's least cost theory accounted for the location of a manufacturing plant in terms of the owner's desire to minimize three categories of cost:

1) Transportation: the site chosen must entail the lowest possible cost of A) moving raw materials to the factory, and B) finished products to the market. This, according to Weber, is the most important.	**2) Labor:** higher labor costs reduce profits, so a factory might do better farther from raw materials and markets if cheap labor is available (e.g. China – today)	**3) Agglomeration:** when a large number of enterprises cluster (agglomerate) in the same area (e.g. city), they can provide assistance to each other through shared talents, services, and facilities (e.g. manufacturing plants need office furniture)

Figures 1-3 show the weight-losing case, in which the weight of the final product is less than the weight of the raw material going into making the product. In Figure 1, the processing plant is located somewhere between the source and the market. The increase in transport cost to the left of the processing plant is the cost of transporting the raw material from its source. The rise in the transportation cost to the right of the processing plant is the cost of transporting the final product. Note the line on the left of the processing plant has a steeper slope than the one on the right.

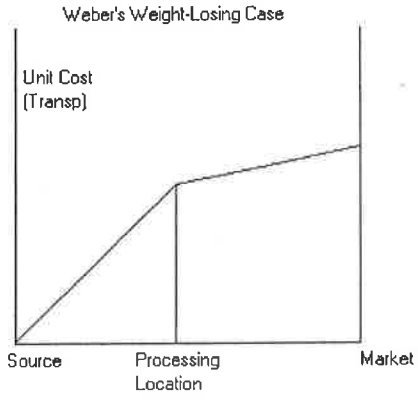

FIGURE 1

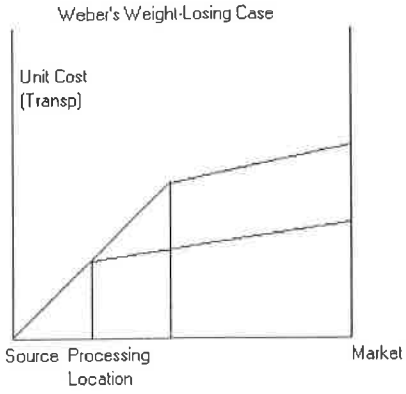

FIGURE 2

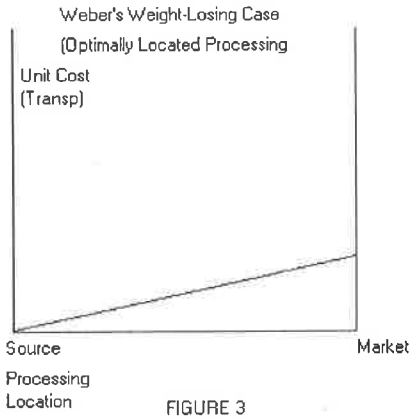

FIGURE 3

The weight gaining case is illustrated in Figures 4- 6, where the final product is heavier than the raw materials that require transport. Usually this is a case of some ubiquitous (available everywhere) raw material such as water being incorporated into the product. The optimal location of the processing plant in this case is at the market. Weber established that firms producing goods less bulky than the raw materials used in their production would settle near to the raw-material source. Firms producing heavier goods would settle near their market. The firm minimizes the weight it has to transport and, thus, its transport costs.

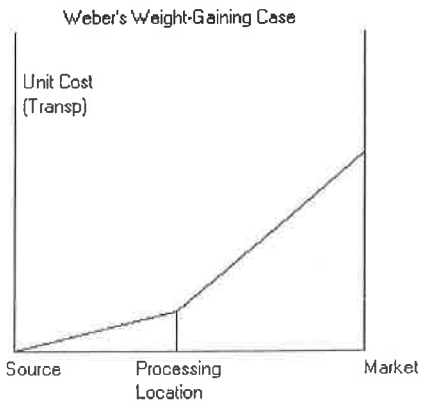

FIGURE 4

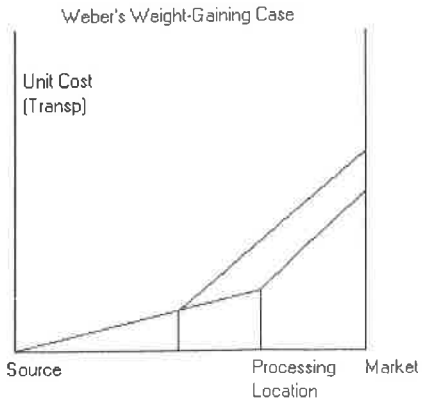

FIGURE 5

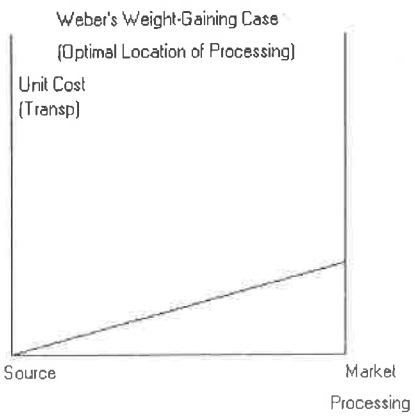

FIGURE 6

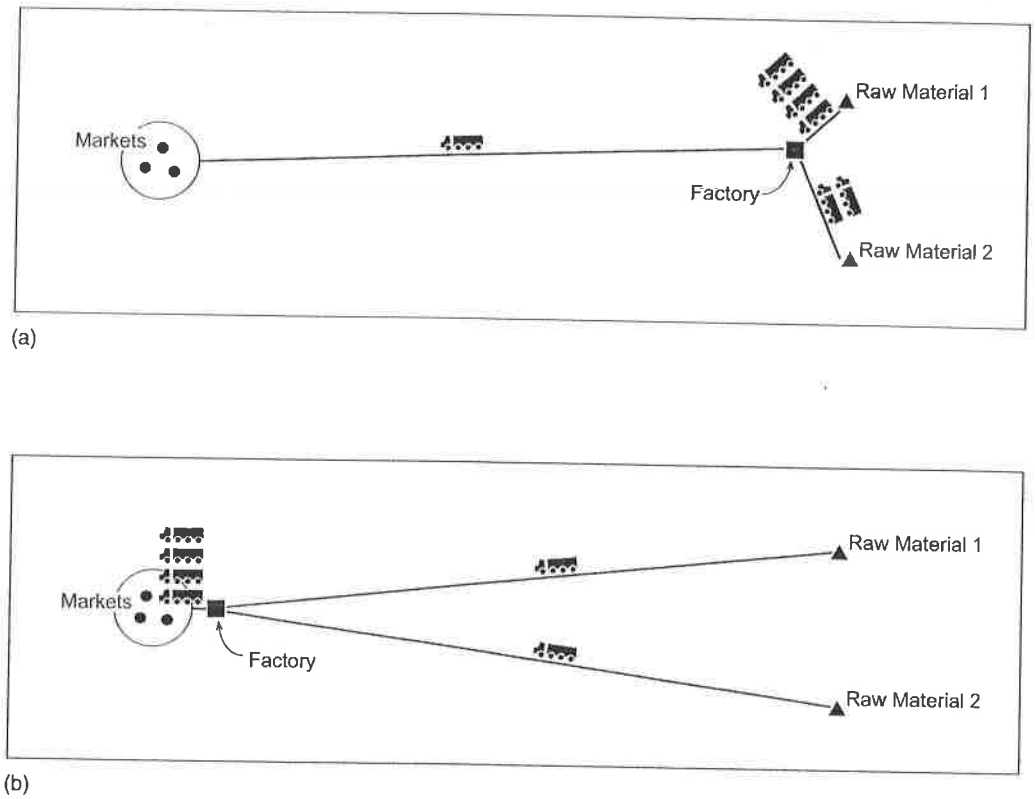

Figure 6.2 (a) Raw material orientation; (b) Market orientation; (c) Break-of-bulk orientation.

Sometimes a location between the raw materials and the market can minimize transport costs. This third type of transport cost minimization is at **break-of-bulk** points. These are places where a large shipment of raw materials is divided into smaller lots, often at ports where goods must be unloaded from one mode of transportation and reloaded onto another (Figure 6.2c). The loading and unloading costs are part of the transportation costs, and an additional loading/unloading stage at the factory can be avoided by locating the factory right at the break-of-bulk point itself. This is especially true when the port acts as a funnel location for the raw materials collected from, or final products bound to, many destinations in the port's "functional region." (See Chapter 2 for discussion of functional regions.) For instance, the ports of Philadelphia and northern New Jersey are funnel points for imported oil,

ECONOMIC GEOGRAPHY NAME_____PERIOD___

WEBER'S LEAST COST THEORY ACTIVITY: Classify the following industries as either:

(A) Weight/ Bulk Gaining (B) Weight / Bulk Losing (C) Neither A or B

__1. Coke Cola

__2. Orange Juice

__3. Bread

__4. Meat Packing

__5. Pianos

__6. Refrigerators

__7. Bottling of Water

__8. Cereals

__9. Wine Industry

__10. Tires

__11. Potato Chips

__12. Shoes

__13. Canning Tomatoes

__14. Paper Industry

__15. Televisions

___16. Peanut Butter

___17. Ship Building

___18. Paints

___19. French Fries

___20. Cigarettes

___21. Copper Industry

___22. Seafood Industry

___23. Computer Industry

___24. Iron Ore Smelting

___25. Glass Making

___26. Cement industry

___27. Lumber Industry

___28. Auto Industry

___29. Beer Industry

__30. Milk Industry