Microeconomics, Module 9: “Welfare Economics and the Gains from Trade“ (Chapter 8)

Practice Problem

(The attached PDF file has better formatting.)

Joseph and Bread Sales

A severe famine is coming to the Middle East, which will eliminate all grain. Joseph, Vicar of Egypt, prepares for the famine by storing grain in the cities.

Before the famine, the equilibrium price of bread in Egypt was $1.00 a loaf. Joseph is selling bread during the first of seven famine years in Egypt. The demand curve is vertical (inelastic), since consumers must eat, and the supply curve is flat (elastic), since Joseph can store the grain for the rest of the seven famine years or sell it to buyers coming from Canaan. The equilibrium price in the famine years is $2.00 a loaf.

To prevent Joseph from prospering, the Egyptian legislature imposes a $1.00 per loaf *excise tax* on suppliers of bread. To help Egyptian consumers, the taxing authorities return $1.00 to each consumer who presents a sales slip for a loaf of bread.

A. Explain why the price of bread is higher during the famine years, though the demand curve for bread has not changed.
B. Who pays the an excise tax (legally): Joseph or the Egyptian consumers?
C. What is the market price of bread after the excise tax is imposed?
D. On whom is the economic incidence of the tax: Joseph or the Egyptian consumers?
E. What is the net effect on the Egyptian consumer, assuming all consumers keep their sales receipts and there are no costs of collecting the tax or returning the money to consumers?
F. In practice, there are costs in collecting taxes and returning money in programs to the populace. What is the net effect on Egyptian consumers if costs are more than zero?
G. The costs of tax collection and promoting social programs are large, but they are not the major detriments of taxes. How do taxes hurt consumers even if the costs are zero, assuming the supply and demand curves are sloped?

Part A: The price of bread rises during the famine years because the supply of bread decreases.

Part B: Legally, Joseph pays the tax.

Parts C and D: The demand curve is vertical and the supply curve is flat, so the economic incidence of the tax is on the consumers, and the market price (after the excise tax) is the pre-tax price plus the tax.

Part E: The net effect on consumers is a wash (no effect) if they keep receipts and transaction costs are zero.

Part F: With transaction costs, consumers lose. This is a general characteristic of taxes.

Part G: Taxes hurt consumers by changing the equilibrium quantity if the supply and demand curves are sloped, even if the transaction costs are zero. This is the dead weight loss.