David Youngberg

Econ 304—Bethany College

**Lecture 26: Double Marginalization II**

1. The Anti-commons
	1. Last class we discussed the difficulty of having too many property rights, leading to the *under*-utilization of the resource in question.
		1. While Michael Heller coined the term “tragedy of the anti-commons” relatively recently, the idea that too many property rights leads to inefficient outcomes appeared at least as early as 1950.
	2. Spengler (1950) noted that if you have two monopolies, each needed to purchase a good (say a retailer and a manufacturer), you will get lower total profits, higher prices, and less output than if you has a single monopoly.
		1. This is called *double marginalization*—when there are two marginal profits (or two marginal decisions) for the same good.
		2. Vertical integration would be good, not just for the firm, but for society, but for the firms as well.
		3. Note this suggests a solution to the tragedy of the anti-commons: if one firm owned many patents rather than many firms owning one patent, we would reduce/eliminate the inefficiency of inaction.
		4. The question becomes, who is in charge of who? After all, each firm will want to be the dominate force and the more owners we have, the harder it becomes to consolidate. We’re right back where we started.
	3. The Holy Roman Empire and the Rhine.
2. Spengler (1950)
	1. Spengler used a simplified two monopoly model to illustrate the problem. (The problem gets worse—but harder to model—the more monopolies we add.)
	2. Consider two monopolies, a retailer and a manufacturer. The retailer buys from the manufacturer and sells to the public facing a demand curve of q = 1 – p. Also, let cost be c, where c < 1, and pw be the wholesale price.
	3. Here’s the profit for the retailer:

$$∏\_{r}=\left(p-p\_{w}\right)(1-p)$$

$$\frac{∂∏\_{r}}{∂p}=\left(1-p\right)-\left(p-p\_{w}\right)=0$$

$$p=\frac{1+p\_{w}}{2}$$

$$q=\frac{1-p\_{w}}{2}$$

$$∏\_{r}=\left(\frac{1+p\_{w}}{2}-p\_{w}\right)(1-\frac{1+p\_{w}}{2})$$

$$∏\_{r}=\left(\frac{1-p\_{w}}{2}\right)^{2}$$

* 1. Here’s the profit for the manufacturer:

$$∏\_{m}=\left(p\_{w}-c\right)\left(\frac{1-p\_{w}}{2}\right)$$

$$\frac{∂∏\_{m}}{∂p\_{w}}=\left(\frac{1-p\_{w}}{2}\right)-\left(\frac{p\_{w}-c}{2}\right)=0$$

$$p\_{w}=\frac{1+c}{2}$$

$$∏\_{m}=\left(\frac{1+c}{2}-c\right)\left(\frac{1-\frac{1+c}{2}}{2}\right)$$

$$∏\_{m}=\frac{\left(1-c\right)}{8}^{2}$$

* 1. Then we combined them to find the retailer’s profit:

$$∏\_{r}=\left(\frac{1-\frac{1+c}{2}}{2}\right)^{2}=\frac{\left(1-c\right)}{16}^{2}$$

* 1. And add to find information about the industry (*ni* stands for “not integrated”):

$$∏\_{ni}=∏\_{r}+∏\_{m}=\frac{3\left(1-c\right)}{16}^{2}$$

$$p\_{ni}=\frac{3+c}{4}$$

$$q\_{ni}=\frac{1-c}{4}$$

* 1. Now supposed we integrate (i) the firms:

$$∏\_{i}=\left(p-c\right)(1-p)$$

$$\frac{∂∏\_{i}}{∂p}=\left(1-p\right)-\left(p-c\right)=0$$

$$p\_{i}=\frac{1+c}{2}$$

$$q\_{i}=\frac{1-c}{2}$$

$$∏\_{i}=\left(\frac{1+c}{2}-c\right)\left(\frac{1-c}{2}\right)$$

$$∏\_{i}=\frac{\left(1-c\right)}{4}^{2}$$

* 1. Note that not only are profits higher and quantity sold larger under an integrated monopoly, but since c < 1, prices are lower.
		1. What’s worse than a monopoly? A chain of monopolies!