The Law of Diminishing Returns: What Is It?

Let's say you're baking cookies for a school bake sale fundraiser. You aren't getting much done all by yourself, so you ask a friend to help. With your friend's help, you're able to bake twice as many cookies! Things are going so well that you decide to ask another classmate to help you, and then another. After all, sh dn't every extra worker l ble your co

Unfor it works! I g in each oth ates will slow kitchen will get crowded, nd you won't have enough cookie sheets, oven space, or ingredients to increase your productivity. Eventually, you'll face *diminishing returns*—your total number of cookies will keep increasing, but each classmate will add fewer and fewer cookies to your total.

Businesses deal with the law of diminishing returns, too—but their stakes are much higher than cookies! Keep reading to learn more!

What's Your Function?

You might just be thinking about flour and sugar when you're making cookies for a bake sale, but did you know you're also dealing with inputs and outputs? Your **inputs**, the specific economic resources used in producing goods and services, include both capital and labor. A business's assets are its **capital**. When baking cookies, your capital includes your ingredients, kitchen space, and equipment. The workers involved are the **labor**—in this case, your classmates!


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▶ *Baking cookies isn't just about flour and sugar…you're also dealing with inputs and outputs!*

So how does this apply to businesses? Let's look again at the factory that produces plastic bottles. One worker is able to produce 10 bottles, but two workers can produce 30, and three workers can produce 60. The table shows how the bottle production works when more employees are added.

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Employees	Bottles produced
0	0
1	10
2	30
3	60
4	85
5	105
6	120
7	130
8	135
9	135
10	130

As you can see, at first each additional worker will produce more b... When the fourth wor... of bottles produced ...owly. And, when the ...umber of bottles pr... to decrease! With a fixe... of equipment and space, too many employees will only get in each other's way.

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▲ *When there are too many employees, the number of bottles produced will actually start to decrease.*

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Learn more about the law of diminishing returns from this video on Investopedia: http://www.investopedia.com/video/play/law-diminishing-marginal-returns/

Marginal revenue (MR) is the change in total revenue that occurs when one more unit of output is sold. Let's look at the pumpkin table again, but this time with a column for marginal revenue.


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Pumpkin Quantity	Price	Total Revenue	Marginal Revenue
0	$5	$0	
1	$5	$5	$5
2	$5	$10	$5
3	$5	$15	$5
4	$5	$20	$5
5	$5	$25	$5
6	$5	$30	$5

Marginal revenue is found by dividing the change in total revenue (TR) by the change in quantity sold (Q).

MR = ΔTR ÷ ΔQ

For example, when six pumpki… …al revenue would be $30, and our change in total … …$25 = $5). If we divide this change in total reven… … sold (one), our marginal revenue would be $5.00:

$… …e in total revenue / 1 additional pumpkin = $5 marginal revenue

Remember, this example is based on perfect competition. In other market structures, prices may not stay the same as quantities increase, meaning that marginal revenue would vary.


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Learn more about marginal revenue by watching this video from Investopedia, "Marginal Revenue—MR": http://www.investopedia.com/terms/m/marginal-revenue-mr.asp.

