# FINANCE 20/30 MODULE 1: WHY MONEY MATTERS: EXPLORE THE VALUE OF MONEY

A. Explore the concept that every money decision involves a trade-off and an OPPORTUNITY COST

CHOOSING A LITTLE MORE OR LESS

## CONSIDER THIS

### Fast-Food Lines

The economic perspective is useful in analyzing all sorts of behaviours. Consider an everyday example: the behaviour of customers at a fast-food restaurant. When customers enter the restaurant, they go to the shortest line, believing that line will minimize their time cost of obtaining food. They are acting purposefully; time is limited, and people prefer using it in some way other than standing in line.

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If one line is temporarily shorter than other lines, some people will move to that one. They apparently view the time saving from the shorter line (marginal benefit) as exceeding the cost of moving from their present line (marginal cost). The line switching tends to equalize line lengths. No further movement of customers between lines occurs once all lines are about equal.

Fast-food customers face another cost–benefit decision when a clerk opens a new station at the counter. Should they move to the new station or stay put? Those who shift to the new line decide that the time saving from the move exceeds the extra cost of physically moving. In so deciding, customers must also consider just how quickly they can get to the new station compared with others who may be contemplating the same move. (Those who hesitate are lost!)

Customers at the fast-food establishment do not have perfect information when they select lines. Thus, not all decisions turn out as expected. For example, you might enter a short line only to find that the person in front of you is ordering hamburgers and fries for forty people in the Greyhound bus parked out back (and also that the employee taking orders is a trainee!). Nevertheless, when you made your decision, you thought it was optimal.

Finally, customers must decide what food to order when they arrive at the counter. In making their choices, they again compare marginal costs and marginal benefits in attempting to obtain the greatest personal satisfaction for their expenditure.

Economists believe that what is true for the behaviour of customers at fast-food restaurants is true for economic behaviour in general. Faced with an array of choices, consumers, workers, and businesses rationally compare marginal costs and marginal benefits.

Each option will have marginal benefits and marginal costs. In making choices, the decision maker will compare those two amounts. Page 6
For example, you and your fiancée are shopping for an engagement ring. Should you buy a ¼-carat, ½-carat, ¾-carat, or larger diamond? The marginal cost of the larger stone is the added expense beyond the smaller one. The marginal benefit is the greater lifetime pleasure (utility) from the larger one. If the marginal benefit of the larger diamond exceeds its marginal cost, you buy the larger one. But if the marginal cost is more than the marginal benefit, buy the smaller diamond instead, even if you can afford the larger.

In a world of scarcity, the marginal benefit associated with some specific option always includes the marginal cost of doing without something else. Spending money on the larger diamond may mean forgoing a honeymoon to an exotic location. Opportunity costs, the value of the next best thing forgone, are always present whenever a choice is made.

# 1.5 The Individual's Economic Problem

LO1.5 Explain the individual's economic problem and how trade-offs, opportunity costs, and attainable combinations can be illustrated with budget lines.

A close examination of the **economic problem**—the need to make choices because economic wants exceed economic means—will enhance your understanding of economic models and the difference between microeconomic and macroeconomic analysis. Let's first build a simple microeconomic model of the general economic problem faced by an individual.

## Limited Income

We all have a finite amount of income, even the wealthiest among us. Even members of the Thomson and Weston families—Canada's richest—have to decide how to spend their money, and the majority of us have much more limited means. Our income comes to us in the form of wages, interest, rent, and profit, although we may also receive money from government programs or from family members. As **Global Perspective 1.1** shows, the average income of Canadians in 2015 was US$47,250. In the poorest nations, it was less than $500.

### 1.1 GLOBAL PERSPECTIVE

### Average Income, Selected Nations

Average income (total income/population), and therefore typical individual budget constraints, vary greatly among nations.

| Country | Per capita income, 2015 (U.S. dollars, based on exchange rates) |
|---|---|
| Norway | $93,530 |
| Switzerland | 84,550 |
| United States | 55,980 |
| Canada | 47,250 |
| France | 40,710 |
| Japan | 38,840 |
| South Korea | 27,450 |
| Brazil | 9,990 |
| Mexico | 9,710 |
| China | 7,710 |
| Pakistan | 1,440 |
| Mali | 760 |
| Rwanda | 700 |
| Congo | 410 |

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## Unlimited Wants

For better or worse, most people have virtually unlimited wants. We desire various goods and services that provide utility. Our wants extend over a wide range of products, from *necessities* (food, shelter, and clothing) to *luxuries* (perfumes, yachts, and sports cars). Some wants, such as basic food, shelter, and clothing, have biological roots. Other wants—for example, specific kinds of food, shelter, and clothing—arise from the conventions and customs of society.

Over time, as new and improved products are introduced, economic wants tend to change and multiply, fuelled by new products. Only recently have people wanted Wi-Fi connections, tablets, or flying drones, because those products did not exist a few decades ago. Also, the satisfaction of certain wants may trigger others: the acquisition of a Ford Focus or a Honda Civic has been known to whet the appetite for a Lexus or a Mercedes.

Services, as well as goods, satisfy our wants. Car repair work, the removal of an inflamed appendix, legal and accounting advice, and haircuts all satisfy human wants. Actually, we buy many goods, such as automobiles and washing machines, for the services they render. The differences between goods and services are often smaller than they appear to be.

For most people, the desires for goods and services cannot be fully satisfied. Bill Gates may have all that he wants for himself, but it is clear from his massive charitable giving that he keenly wants better health care for the world's poor. Our desires for a particular good or service can be satisfied; over a short period of time we can surely get enough toothpaste or pasta. And one appendectomy is plenty. But our broader desire for more goods and services and higher-quality goods and services seems to be another story.



Because we have limited income (usually through our work) but seemingly insatiable wants, it is in our self-interest to pick and choose goods and services that maximize our satisfaction, given the limitations we face. It should be noted that while we are stressing limited income, there is rarely enough of all the other things people desire, such as health, time, physical/mental abilities, and much, much more.

## Opportunity Cost Assignment

For each of the scenarios below develop the equation, solve for what it asks and write a sentence that states what the opportunity cost would be.

1. A farmer has a quarter of land. He can use this land to raise either 75 tonnes of wheat or 25 tonnes of lamb. What is the opportunity cost if the farmer was to use the land for lamb?

***Answer: If the farmer uses the land entirely for lamb, the opportunity cost is 75 tonnes of wheat. He can no longer produce wheat if he is producing lamb. It's an EITHER-OR situation.***
***We must value opportunity cost as the what we GAVE UP.***

2. Using the same numbers above. Calculate the opportunity cost if he wanted to know what the opportunity cost would be to raise 1 tonne of lamb.

***Answer: For every 1 tonne of lamb, the farmer gives up 3 tonnes of wheat Use a ratio to calculate this. 3 times as many production values of wheat than there is as lamb. But! If the lamb is more valuable than wheat, then maybe that exchange is worth it.***

3. A creamery has one room in which they produce both cream and butter. In 3 hours they can produce 50 lbs of butter or 350 litres of cream. What is the opportunity cost if they produce the 350 litres of cream?

***Answer: If the creamery uses the one room to produce only cream, they have given up the 50lbs of butter. They can not use the room for both. This decision is favorable if the value of the cream is greater than the price/value of the butter. Once you know what you gave up, you can put a value on the opportunity cost and decide if it's worth it..***

4. What is the opportunity cost if they were to produce 1lb of butter?

***Answer: For every 1 pound of butter, they give up 7 litres of cream. You can use a ratio for this:***
***50lbs of butter = 350 litres of cream, so 1lb of butter = 7 litres of cream.***

5.

Suppose that you are given a $100 budget at work that can be spent only on two items: staplers and pens. If staplers cost $10 each and pens cost $2.50 each, then the opportunity cost of purchasing one stapler is [LO1.5]

1. 10 pens
2. 5 pens
3. No pens
4. 4 pens

***Answer: 4 pens. You must forego purchasing 4 pens if you are to free up enough money (4 x $2.50 = $10) to purchase a stapler.***

6. What is an opportunity cost? How does the idea relate to the definition of economics? Which of the following decisions would entail the greater opportunity cost: allocating a square block in the heart of Toronto for a surface parking lot or allocating a square block at the edge of a typical suburb for such a lot? Explain. [LO1.2]

***Answer: An opportunity cost is what was sacrificed to do or acquire something else. The condition of scarcity creates opportunity cost. If there was no scarcity, there would be no need to sacrifice one thing to acquire another. The opportunity cost would be much higher in Toronto as the alternative uses for that square block are much more valuable than for a typical suburban city block.***

7.

Pham can work as many or as few hours as she wants at the university bookstore for $9 per hour. But due to her hectic schedule, she has just 15 hours per week that she can spend working either at the bookstore or at other potential jobs. One potential job, at a café, will pay her $12 per hour for up to 6 hours per week. She has another job offer at a garage that will pay her $10 an hour for up to 5 hours per week. And she has a potential job at a daycare centre that will pay her $8.50 per hour for as many hours as she can work. If her goal is to maximize the amount of money she can make each week, how many hours will she work at the bookstore? [LO1.2]

***Answer: 4.***

***Feedback: Pham will choose to work at the bookstore as long as the wage rate at the bookstore exceeds her other opportunities. However, if another job offers a higher wage rate she will choose employment there. She will work until her total time allotment (for work) is exhausted.***

***She will choose to work at the café for the full 6 hours because the wage rate at the café is $12 per hour, which is greater than the wage rate at the bookstore of $9. This leaves her with 9 hours of work time remaining. Next, she will choose to work at the garage for the full 5 hours because the wage rate here is $10, which again is greater than the bookstore wage rate $9. After this decision she only has 4 hours of work time remaining. She will choose to work these last 4 hours at the bookstore because the bookstore wage rate of $9 exceeds the daycare center wage rate of $8.50.***

***$12x6hrs=$72***
***$10x5hrs=$50***
***$9x4hrs=$36***
***Total $158***

8. Suppose you won $15 on a lottery ticket at the local 7-Eleven and decided to spend all the winnings on candy bars and bags of peanuts. Candy bars cost $0.75 each while bags of peanuts cost $1.50 each. [LO1.6]

| Goods | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Candy bars | 0 | 4 | 8 | 12 | 16 | 20 |
| Bags of peanuts | 10 | 8 | 6 | 4 | 2 | 0 |

***Answer: Here is the exchange of values that you could buy with the $15. One would have to determine which of the combinations has more value to the person spending the money. You may prefer candy bars and want more of those. I may not like the sugar in candy bars and prefer the peanuts, knowing that I will get less of them in this exchange. This choice is a personal choice and based on a person's preference. These must also be considered, not just "how many" you can get.***