

After reading this chapter, you should be able to:
1.1 Explain scarcity and describe why you must make smart choices among your wants.
1.2 Define and describe opportunity cost.
1.3 Describe how comparative advantage, specialization, and trade make us all better off.
1.4 Explain how markets connect us all using the circular flow of economic life.
1.5 Illustrate and explain the Three Keys to Smart Choices.


## WHAT DO YOU WANT OUT OF LIFE? Riches? Fame?

Love? Adventure? A successful career? To make the world a better place?
To live a life that respects the environment? To express your creativity?
Happiness? Children? A long and healthy life? All of the above?
Economics will help you get what you want out of life. Many people believe economics is just about money and business. But the real definition of economics is how individuals, businesses, and governments make the best possible choices to get what they want, and how those choices interact in markets.

The title of this book comes from a quote by Nobel Prize-winning author George Bernard Shaw: "Economy is the art of making the most of life." Economics is partly about getting the most for your money, but it is also about making smart choices generally. I wrote this book because I believe that if you learn a little economics, it will help you make the most of your life, whatever you are after. That same knowledge will also help you better understand the world around you and the choices you face as a citizen.

You don't need to be trained as an economist to lead a productive and satisfying life. But if you can learn to think like an economist, you can get more out of whatever life you choose to lead, and the world will be better for it.

### 1.1 Are You Getting Enough? Scarcity and Choice

Explain scarcity and describe why you must make smart choices among your wants.


Can you afford to buy everything you want? If not, every dollar you spend involves a choice. If you buy the Nintendo Wii, you might not be able to afford your English textbook. If you treat your friends to a movie, you might have to work an extra shift at your job or give up your weekend camping trip.

It would be great to have enough money to buy everything you want, but it would not eliminate the need to make smart choices. Imagine winning the biggest lottery in the world. You can buy whatever you want for yourself, your family, and your friends. But you still have only 80 -some years on this planet (if you are lucky and healthy), only 24 hours in a day, and a limited amount of energy. Do you want to spend the week boarding in Whistler or surfing in Australia? Do you want to spend time raising your kids or exploring the world? Will you go to that third party on New Year's Eve or give in to sleep? Do you want to spend money on yourself, or set up a charitable foundation to help others? Bill Gates, one of the richest people on Earth, has chosen to set up the Bill and Melinda Gates Foundation. With billions of dollars in assets, the Foundation still receives more requests for worthy causes than it has dollars. How does it choose which requests to fund?

Economists call this inability to satisfy all of our wants the problem of scarcity. Scarcity arises from our limited money, time, and energy. All mortals, even billionaires, face the problem of scarcity. We all have to make choices about what we will get and what we will give up. Businesses with limited capital have to choose between spending more on research or on marketing. Governments have to make similar choices in facing the problem of scarcity. Spending more on colleges and universities leaves less to spend on health care. Or if governments tried to spend more on all social programs, the higher taxes to pay for them would mean less takehome pay for all of us.

Because none of us - individuals, businesses, governments - can ever satisfy all of our wants, smart choices are essential to making the most of our lives.


1. Define scarcity.
2. What does the definition of economics have to do with scarcity?
3. Social activists argue that materialism is one of the biggest problems with society: If we all wanted less, instead of always wanting more, there would be plenty to go around for everyone. What do you think of this argument?


### 1.2 Give It Up for Opportunity Cost! Opportunity Cost

Scarcity means you have to choose, and if you want the most out of what limited money and time you have, you need to make smart choices. A choice is like a fork in the road. You have to compare the alternatives and then pick one. You make a smart choice by weighing benefits and costs.

## Choose to Snooze?

What are you going to do with the next hour? Since you are reading this, you must be considering studying as one choice. If you were out far too late last night, sleep might be your alternative choice. If those are your top choices, let's compare benefits of the two paths from the fork. For studying, the benefits are higher marks on your next test, learning something, and (if I have done my job well) perhaps enjoying reading this chapter. For sleep, the benefits are being more alert, more productive, less grumpy, and (if I have done my job poorly) avoiding the pain of reading this chapter.

If you choose the studying path, what is the cost of your
 decision? It is the hour of sleep you give up (with the benefits of rest). And if you choose sleep, the cost is the studying you give up (leading to lower marks).

In weighing the benefits and costs of any decision, we compare what we get from each fork with what we give up from the other. For any choice (what we get), its true cost is what we have to give up to get it. The true cost of any choice is what economists call opportunity cost: the cost of the best alternative given up.


## Opportunity Cost Beats Money Cost

For smart decisions, it turns out that opportunity cost is more important than

money cost. Suppose you win a free trip for one to Bermuda that has to be taken the first week in December. What is the money cost of the trip? (This is not a trick question.) Zero - it's free.

But imagine you have a business client in Saskatoon who can meet to sign a million-dollar contract only during the first week in December. What is the opportunity cost of your "free" trip to Bermuda? $\$ 1$ million. A smart decision to take or not take the trip depends on opportunity cost, not money cost.

Or what if you have an out-of-town boyfriend, and the only time you can get together is during the first week in December? What is the opportunity cost of taking your "free" trip for one? Besides losing out on the benefits of time together,

If there were an official slogan for the concept of opportunity cost, it would be, "There is no such thing as a free lunch." The usual meaning of the slogan is that there are strings attached to any gift: the giver will expect something in return. The economist's take on the slogan is that every choice involves a tradeoff: To get anything, including lunch, you must always give up something else. What you give up may be money or time, but every choice has an opportunity cost. you may be kissing that relationship goodbye.

All choices are forks in the road, and the cost of any path taken is the value of the path you must give up. Because of scarcity, every choice involves a trade-off to get something, you have to give up something else. To make a smart choice, the value of what you get must be greater than the value of what you give up. The benefits of a smart choice must outweigh the opportunity cost.


## Where Have All the Men Gone?

Women make up 60 percent of the undergraduate college and university population. Why do women so outnumber men? There have been many explanations, from women's liberation to schools' rewarding girls' more obedient behaviour and punishing boys' ADD lattention deficit disorder). There is also a simple economic explanation based on opportunity cost.

- Think of going or not going to college or university as a fork in the road.
- Weigh the costs and benefits of each choice. Everyone pays the same tuition and fees, but the benefits given up with each choice are different for women and men.
- More women than men go to college and university because the cost of not going is higher for women - men's alternative is higher-paying blue-collar jobs. Women's alternative tends to be lower-paying clerical or retail jobs.

Women with post-secondary education earn 50 to 80 percent more a year than women with only a high-school diploma. Men with the same postsecondary education earn only 25 to 30 percent more a year than men with only a high-school diploma. The gap in pay between high-school and post-secondary women is larger than the same gap for men.

Because of the differences in opportunity cost - women who don't go to college or university give up a bigger income gain than men do - the rate of return for a college diploma or university degree is 9 percent for women, and only around 6 percent for men. Incentives matter, and people are responding to the incentives. For women, it pays more to get a post-secondary education.
incentives: $\quad$ rewards and penalties for choices
 If you read the pref owe, you
might recognize that this
section is a bout the Th es. Keys to Smart Choices. which re-appear in Section 1.5.

Incentives Work Since smart choices compare costs and benefits, obviously your decision will change with changes in costs or benefits. We all respond to incentives - rewards and penalties for choices. You are more likely to choose a fork with a reward, and avoid a fork with a penalty. A change in incentives causes a change in choices. If your Saskatoon business deal was worth only $\$ 100$ instead of one million dollars, you might take the trip to Bermuda. If you had been out really late last night, you would be more likely to sleep than to study. If you had a test tomorrow instead of next week, you would be more likely to study than to sleep.

To make the most out of life and make smart decisions, you always need to be asking the question, "What is the opportunity cost of my choice, and do the benefits outweigh the opportunity cost?"

1. What is the opportunity cost of any choice?
2. What is the biggest difference between the money cost of attending college and the opportunity cost?
3. This weekend, your top choices are going camping with your friends or working extra hours at your part-time job. What facts (think rewards and penalties), if they changed, would influence your decision?

### 1.3 Why Don't You Cook Breakfast? Gains from Trade

What did you have for breakfast today? Did you have cereal and orange juice at home, or did you buy coffee and a bagel at Tim Hortons on the way to school? Either way, you made a choice - to make breakfast for yourself, or to buy it from a business. This is the most basic choice you and everyone else makes in trying to do the best you can: Do you produce yourself the products/services you want, or do you earn money at a job and then buy (or trade money for) products/services made by others?

These days, that basic choice sounds absurd. We all work (or hope to) at jobs, earning money by specializing in a particular profession or occupation. We use that money to buy what we want. Even a "homemade" breakfast uses cereal and juice bought at a supermarket. But if you go back only a few hundred years in Canadian history, most aboriginal peoples and pioneers were largely self-sufficient, making for themselves most of what they needed - hunting and growing their own food, making clothes from animal hides, and building shelters from wood.

Voluntary Trade What happened to lead us all away from self-sufficiency toward specializing and trading? The historical answer to that question is complex, but the simple economic answer is that specializing and trading makes us better off, so of course people made that basic choice. It's simple self-interest at work.

Our standard of living, in terms of material products/services, is much higher than it was hundreds of years ago in Canada. (What we have done to the environment, which in the past was better than in the present, is another story that I will also explain economically in terms of self-interest in Chapter 10.) The irony is that as individuals we are hopeless at supporting ourselves compared to our ancestors. Yet collectively our standard of living is vastly superior.

Trade is the key to our prosperity. Trade makes all of us better off. Why? Trade is voluntary. Any time two people make a voluntary trade, each person must feel that what they get is of greater value than what they give up. If there weren't mutual benefits, the trade wouldn't happen.

Define and describe opportunity cost.


## Bake or Chop?

It turns out that opportunity cost is the key to the mutual benefits from trade. To illustrate, let's take a simple imaginary example of two early Canadians who are each self-sufficient in producing food and shelter.

Jacqueline grows her own wheat to make bread, and chops wood for fire and shelter. If she spends an entire month producing only bread, she can make 50 loaves. Alternatively, if she spends all her time chopping wood, she can produce 100 cords. Her monthly choice of how to spend her time looks like this:

Since Jacqueline is self-sufficient, that means she can consume only what she produces herself, so she must divide her time and produce some bread and some wood.
 Figure 1.1 shows different combinations of bread and wood she can produce, depending on how she divides up her time during the month. From these production possibilities, Jacqueline chooses to produce 20 loaves of bread and 60 cords of wood.

Comparative Advantage But mutually beneficial gains from trade do not depend on absolute advantage. They depend on what economists call comparative advantage - the ability to produce a product/service at a lower opportunity cost than another producer. To figure out comparative advantage, we need to calculate opportunity costs for Jacqueline and Samantha.

Jacqueline's choice in Figure 1.1 is between producing 50 loaves of bread or 100 cords of wood. If she chooses to bake 50 loaves of bread, the opportunity cost is 100 cords of wood. If she instead chooses to chop 100 cords of wood, the opportunity cost is 50 loaves of bread. Opportunity cost is the value of the fork in the road not taken.

To compare opportunity costs, it is easier if we measure them per unit of the product chosen. There is a simple, useful formula for opportunity cost:

$$
\text { Opportunity cost }=\frac{\text { Give Up }}{\text { Get }}
$$

So Jacqueline's opportunity cost of producing more bread is

$$
\begin{aligned}
& \text { Opportunity cost of } \\
& \text { additional bread }
\end{aligned}=\frac{100 \text { cords of wood }}{50 \text { loaves of bread }}=\frac{2 \text { cords of wood }}{1 \text { loaf of bread }}
$$

To get each additional loaf of bread, Jacqueline must give up 2 cords of wood.
What is Jacqueline's opportunity cost of producing more wood?

$$
\begin{aligned}
& \text { Opportunity cost of } \\
& \text { additional wood }
\end{aligned}=\frac{50 \text { loaves of bread }}{100 \text { cords of wood }}=\frac{\frac{1}{2} \text { loaf of bread }}{1 \text { cord of wood }}
$$

To get each additional cord of wood, Jacqueline must give up $\frac{1}{2}$ loaf of bread.
If you calculate opportunity costs for Samantha you will find that her opportunity cost of getting an additional loaf of bread is giving up $\frac{1}{2}$ cord of wood, and her opportunity cost of getting an additional cord of wood is giving up 2 loaves of bread.

These opportunity cost calculations are summarized in Figure 1.3. Since comparative advantage is defined as lowest opportunity cost (not lowest absolute cost), you can see that Samantha has a comparative advantage in bread-making (give up $\frac{1}{2}$ cord of wood versus 2 cords of wood), while Jacqueline has a comparafive advantage in wood-chopping (give up $\frac{1}{2}$ loaf of bread versus 2 loaves of bread).

$$
\begin{aligned}
& \text { comparative advantage: } \\
& \text { ability to produce a } \\
& \text { product at lower } \\
& \text { opportunity cost than } \\
& \text { another producer }
\end{aligned}
$$



## Figure 1.3 Opportunity Costs for Jacqueline and Samantha

|  | Opportunity Cost of 1 Additional |  |
| :--- | :--- | :--- |
|  | Loaf of Bread | Cord of Wood |
| Jacqueline | Gives up 2 cords of wood | Gives up 1/2 loaf of bread |
| Samantha | Gives up 1/2 cord of wood | Gives up 2 loaves of bread |
| Comparative <br> Advantage | Samantha has comparative <br> advantage (lower opportunity <br> cost) in bread-making | Jacqueline has comparative <br> advantage (lower opportunity <br> cost) in wood-chopping |

## Smart Deals

Here's the payoff to these calculations. Instead of each pioneer being self-sufficient, and producing everything she needs, look what happens if the pioneers specialize in producing what each is best at, and then trade.

According to comparative advantage, Jacqueline should specialize in only chopping wood, and Samantha should specialize in only making bread. If so, Jacqueline will produce 100 cords of wood and no bread, and Samantha will produce 40 loaves of bread and no wood. If they then make the day-long journey and trade 20 cords of wood for 20 loaves of bread:

- Jacqueline ends up with 20 loaves of bread ( 0 produced plus 20 traded for) and 80 cords of wood ( 100 produced minus 20 traded away);
- Samantha ends up with 20 loaves of bread ( 40 produced minus 20 traded away) and 20 cords of wood ( 0 produced plus 20 traded for).
Check it out. After trading, Jacqueline and Samantha are both better off than when they were each self-sufficient. Before trade, the best Jacqueline could produce with 20 loaves of bread was 60 cords of wood, for all her strength, while after trade she has the same amount of bread and more wood. Before trade, the best Samantha could produce with 20 loaves of bread was just 10 cords of wood, while
 after trade she has the same amount of bread and more wood.

What is remarkable is that these gains from trade, which improve both Jacqueline's and Samantha's standard of living (with more wood they can stay warmer or build better houses), happen without anyone working harder, or without any improvement in technology or new resources. Both are better off because they have made smart decisions to specialize and trade, rather than each trying to produce only what each will consume. Both can have toast for breakfast (bread roasted over a fire), even though each produced only part of what was necessary to make the breakfast.

Notice also that there are gains for both Jacqueline and Samantha, even though Jacqueline can produce more bread and wood than Samantha can. Despite Jacqueline's absolute advantage in producing everything at lower cost, there are still differences in opportunity costs, or comparative advantage. Comparative advantage is the key to mutually beneficial gains from trade. The trade can be between individuals, or between countries. That is why China trades with Canada, even though China can produce most things more cheaply than we can in Canada. There are still differences in comparative advantage based on opportunity costs. Trade allows us all to work smarter.

So the next time you buy breakfast, don't feel guilty about spending the money when you could have cooked it yourself - feel smart about specializing and trading to make yourself better off!

1. Explain the difference between absolute advantage and comparative advantage.
2. If you spend the next hour working at Sears, you will earn $\$ 10$. If you instead spend the next hour studying economics, your next test score will improve by 5 marks. Calculate the opportunity cost of studying in terms of dollars given up per mark. Calculate the opportunity cost of working in terms of marks given up per dollar.
3. The best auto mechanic in town (who charges $\$ 120 /$ hour) is also a better typist than her office manager (who earns $\$ 20 /$ hour). Should the mechanic do her own typing? (Hint: The best alternative employment for the office manager is another office job that also pays $\$ 20 /$ hour.)

### 1.4 Choosing Your Way: The Circular Flow of Economic Life

Canada is a very large country, the second largest in the world in terms of geographical area. Have you ever had the urge to follow in the footsteps of our ancestors and explore the land - perhaps a trip to the northernmost tip of the Northwest Territories, or a cross-country trip from Newfoundland to British Columbia? No? Why not think about it?

Explain how markets connect us all using the circular flow of economic life.


## Why Maps (and Economists) Are Useful

How do you start planning your trip? The satellite photo of Canada below, while amazing to look at, is not very useful. It contains too much information and too little information. How can that be? The photo captures every aspect of Canada that can be seen from space - lakes, rivers, mountains, and forests. But the photo doesn't reveal smaller details that are important for your trip - most importantly, roads, railways, or ferry services.

A hybrid (combined) map version of the same photo shows you the auto route (on the next page) along the Trans-Canada Highway (you've decided it's too cold to go up north). Why is the hybrid map so much more useful than the satellite photo? Because it focuses your attention on the information that is most relevant for your task, and leaves all other information in the background.

Learning to think like an economist allows you to look at life like the hybrid map. The key "roads" to making smart choices start to stand out, and making difficult decisions and understanding the complex world around you don't seem to be such daunting tasks.

There are an almost infinite number of choices we could look at, so to keep things manageable, let's limit ourselves to the opening definition of economics: Economics is about how individuals, businesses, and governments make the best possible choices to get what they want, and about how those choices interact in markets. (We will look at markets more closely in Chapter 4, but for the moment, think of a market as the interaction of buyers and sellers.)


Satellite photo of Canada not useful for trip planning.

Hybrid map of part of Canada along the Trans-Canada Highway useful for trip planning.
"Economics is the study of mankind in the ordinary business of life."
-Alfred Marshall (1890)


Another good definition of economics was made in 1890 by Alfred Marshall, the first-ever professor of economics, who created economics as a separate subject at the University of Cambridge. Marshall said: "Economics is the study of mankind in the ordinary business of life."

## Going in Circles to Find the Way

Even limiting ourselves to these definitions of economics, the choices are still overwhelming. Imagine 35 million people spread out over 10 million square kilometres, engaged in the "ordinary business of life," earning a living, specializing in producing products/services, selling, and buying. Instead of trying to capture every detail of every action and choice (like the satellite photo), Figure 1.4 shows a hybrid map version of the same economic activity.

Figure 1.4 Circular Flow of Economic Life


Figure 1.4, which economists call the "circular flow of economic life," shows you the simplest big picture of how an economist thinks about economic choices. All the complexity of the Canadian economy is reduced to three sets of players: households, businesses, and governments. Individuals in households ultimately own all of the inputs of an economy - labour (the ability to work), natural resources, capital equipment, and entrepreneurial ability. Even the assets of the largest corporations, such as Inco, Ford, or Research In Motion, are ultimately owned by individual shareholders. Households and businesses interact in two sets of markets - input markets (where businesses buy the inputs they need to produce products/services), and output markets (where businesses sell their products/services). Governments (in the middle) set the rules of the game and can choose to interact, or not, in almost any aspect of the economy.

Follow the Flow Clockwise Follow the circle, starting at the top. Individuals in households sell or rent to businesses the labour, resources, capital, and entrepreneurial abilities they own. This is the outer blue flow on the right-hand side of the circle, from top to bottom. In exchange, businesses pay wages and other money rewards to households. This is the inner green flow on the righthand side of the circle, from bottom to top. These exchanges, or trades, happen in input markets, where households are the sellers and businesses are the buyers. When Mr. Sub hires you to work in a Mr. Sub store, that interaction happens in an input market-the job market.

Businesses then use those inputs to produce products/services, which they sell to households. This is the outer blue flow on the left-hand side of the circle, from bottom to top. In exchange, households use the money they have earned in input markets to pay businesses for these purchases. This is the inner green flow on the left-hand side of the circle, from top to bottom. These exchanges, or trades, happen in output markets, where households are the buyers and businesses are the sellers. These are markets where you buy your breakfast from a store or supermarket, your cars from Ford or Toyota, your piercings from a neighbourhood piercing parlour, and so on.

At the end of the trip around the circle, households have the products/services they need to live, and businesses end up with the money. That sets the stage for the next trip around the circle, where businesses again buy inputs from individuals in households, and the flow goes on.

So there you have it—a hybrid map to begin your economics road trip toward understanding and making smart choices.

## It's All Greek to Me: Microeconomics or Macroeconomics?

"One size fits all" does not apply to maps. The hybrid map of Canada with the highlighted Trans-Canada Highway may be fine for planning the big picture of your trip, but when you are trying to get to a hostel in downtown Winnipeg from the Trans-Canada, a detailed city map is far more useful. Depending on the task, economists also use different kinds of "maps."

The economic way of thinking, while always concerned with smart choices and their interactions in markets, can be applied on different scales to understand microeconomics and macroeconomics.

Microeconomics "Micro" comes from the Greek word mikros, meaning "little" or "small." A microscope lets us see little details of an object. A micromanager supervises every tiny detail of an employee's work (ever had a boss like that?). A detailed city map has a micro scale. Microeconomics analyzes the choices made by individuals in households, individual businesses, and governments, and how those choices interact in markets.

Microeconomic choices for individuals include whether to go to college or to get a job, whether to be self-sufficient or to specialize and trade, whether to take out a bank loan or to run up a credit card balance, and whether to get married or to stay single. (Yes, there is even a microeconomic analysis comparing the costs and benefits of marriage!)

Microeconomic choices for businesses include what product/service to produce, how much to spend on research and development of new products, which technology to use, which marketing strategy to use, and whether to outsource manufacturing to China versus producing in Canada.

Microeconomic choices for governments focus on individual industries. For example, should the government step in and regulate the emerging voice-over-IP phone industry (services such as Skype and Vonage), or let competition determine the winners and losers? How would a carbon tax affect car sales?

Macroeconomics When we step back from individual details and look at the big picture, we are taking a "macro" view. Macro comes from the Greek word makros, meaning "large." The macrocosm is the cosmos, or the whole of a complex structure. A macrobiotic diet consists of whole, pure foods based on Taoist principles of the overall balance of yin and yang. Macroeconomics analyzes the performance of the whole Canadian economy and the global economy, the combined outcomes of all individual microeconomic choices. In the circular flow in Figure 1.4, instead of focusing on the individual exchanges in markets macroeconomics focuses on the whole circle, the combined outcomes of all of the individual interactions in markets.

Macroeconomics focuses on overall outcomes of market interactions, including Canadian unemployment, inflation rates, government deficits and surpluses, interest rates set by the Bank of Canada, the value of the Canadian dollar, and international trade. Macroeconomics also examines the policy choices governments make that affect the whole economy - for example, whether to play an active economic role by spending and taxing (more likely for New Democrats) or to leave the economy alone (more likely for Progressive Conservatives), whether to raise or lower taxes, whether to raise or lower interest rates, and whether to defend the value of the Canadian dollar or let it be determined by economic forces. Since government macroeconomic policy choices will affect your personal economic fortunes, as a citizen you have a personal incentive to learn some macroeconomics so you can make more informed choices when voting for politicians.

Looking at the Trees or the Forest? The difference between micro and macro views is reflected in the titles of this book (Economics for Life: Smart Choices for You) and its companion book (Economics for Life: Smart Choices for All). This book, with the subtitle Smart Choices for You, is about microeconomics individual choices. The companion book, with the subtitle Smart Choices for All, is about macroeconomics - the combined market outcomes of all choices. Micro looks at the individual trees, while macro looks at the forest.

1. Who are the three sets of players in the circular flow of economic life?
2. When you find a job through Workopolis.com or Monster.ca, what kind of market are you participating in? Is the answer different for the business that hires you?
3. Find one story in today's news that you think is about microeconomics, and one that is about macroeconomics. What is the difference between microeconomics and macroeconomics in terms of these stories?

### 1.5 The Three-Key Map to Smart Choices: Weigh Marginal Benefits and Costs

Good road maps make travel easier. Figure 1.5 shows a second, more detailed hybrid economic "map" to help guide all of your microeconomic choices toward being smart choices. This "map" consists of three keys to consider when standing at any fork in the road, when making any choice. While these three keys don't look like a traditional map (no pictures, colours, roads, or lines), they serve the same function as do maps - focusing your attention on the information that is most useful for making a smart choice, and leaving all other information in the background.

For each key, pay special attention to the red words and italicized words in the explanations on the following page.

## Figure 1.5 Three Keys to Smart Choices



Illustrate and explain the Three Keys to Smart Choices.


## Key 1: Opportunity Costs Rule

To make a smart choice, when you weigh benefits against costs, additional benefits must be greater than additional opportunity costs. When counting costs, people who make dumb decisions usually count only money costs, rather than opportunity costs. Remember the "free" trip to Bermuda? The money cost was zero, but the opportunity cost was the $\$ 1$-million deal you would have given up. Or think about your decision to go to college. For that fork in the road, the additional benefits include the higher lifetime income you will earn from your education. The additional costs are the money spent on tuition and books (these money costs are also opportunity costs, as you could have spent the same money to buy other things), as well as the income you give up by not working full time. The additional benefits must be greater than all additional opportunity costs (and the data show that they are - so congratulations on a smart choice!).

## Key 2: Look Forward Only to Additional Benefits and Additional Opportunity Costs

If you are deciding whether or not to study for the next hour, the tuition you paid for this course is irrelevant. You can't get it back, whether you choose to study or not. When standing at a fork in the road, don't look back, only look forward. The previous decisions you made or money you spent are history and can't be undone. The past is the same no matter which fork you choose now, so it shouldn't influence your choice.

Your choices should weigh the additional benefit from the next hour of studying against the additional cost (giving up sleep, or perhaps working an extra hour at your part-time job). It's not the total benefit of all hours spent studying or the average benefit of an hour of studying that matters, only the additional benefit. Economists use the word "marginal" instead of "additional," so you can also read Key 2 as "Count only marginal benefits - additional benefits from your next choice - and marginal opportunity costs - additional opportunity costs from your next choice." Chapter 2 will explain marginal benefits, and Chapter 3 will explain marginal costs. Thinking like an economist means thinking at the margin.

## Key 3: Implicit Costs and Externalities Count, Too

If you invest $\$ 1000$ in your own business, and expect to get $\$ 1100$ in a year, is that a smart choice? You don't know until you compare the best alternative use of your money. If the best your bank pays is $\$ 1050$ in a year, invest in your business. But if the bank is paying 20 percent interest, paying $\$ 1200$ in a year, your business is not a smart choice. Economists use the term implicit costs to describe the opportunity costs of investing your own money or time. These implicit costs will not show up on the books your accountant would prepare, as we will see in Chapter 6. But smart choices must incorporate implicit costs.

Negative Externalities Driving a car is expensive. Think of the gas bill alone for driving clear across Canada! But your costs also include car payments, insurance, repairs, licence fees, tolls, and parking. What's more, as expensive as those costs are, they don't cover the total cost of driving a car. Your car also emits pollution, but you don't pay for the costs of damage to the environment from acid rain, or for the increased medical costs to treat patients suffering from asthma and other pollution-related illnesses. Economists call these costs that you create, but don't pay directly, negative externalities. They are costs that affect others who are external to a choice or trade. But from a social point of view, external costs should be included in making smart decisions.

Positive Externalities There are also positive externalities, benefits that affect others who are external to a choice or trade. If you plant a beautiful garden in your front lawn, you certainly benefit, but so do all of your neighbours who take in the colours and fragrances. Again, from a social point of view, positive externalities should be included in making smart decisions, but they are not.

As we will see in Chapter 10, market economies like ours in Canada tend to produce too many products/services that have negative externalities, and too few products/services that have positive externalities. Government policy can play an important role in adjusting for external costs and benefits to result in smart decisions for society.

## Moving On

Now that you have your economic maps to guide you, let's get on with the journey. You will use the Three Keys to make smart decisions time and again over the coming chapters. Don't worry if they seem a bit sketchy for now. Each time we use them, we will fill in some of the pieces that might seem to be missing.

The "maps" in Figures 1.4 and 1.5 will help you learn to think like an economist, which in turn will help you get more out of whatever life you choose to lead, as well as help you make better decisions as a citizen.

$$
\begin{aligned}
& \text { negative (or positive) } \\
& \text { externalities: } \\
& \text { costs (or benefits) that } \\
& \text { affect others external to } \\
& \text { a choice or a trade }
\end{aligned}
$$

1. Can you combine the Three Keys into a single sentence that begins with "Choose only when . . ." and that uses all the economist's terms explained under Steps 2 and 3 ? That sentence is the key to this entire course.
2. Your employer pays you $\$ 1$ for every kilometre you drive your own car on company business, or allows you to use a company car at no expense. In deciding whether to drive your own car or use the company car, which of the following costs are relevant to your decision: Purchase price of your car? Yearly licence fee? Insurance premiums? Depreciation? Gasoline costs? Explain your answer.
3. Highway 407 ETR in Toronto is a toll road that uses transponders to keep track of how many kilometres you drive, and then sends a monthly bill. Highway 401 runs parallel to Highway 407 and is free. Why do drivers voluntarily pay the tolls? (Use opportunity cost in your answer.) Suppose the government could estimate the cost per kilometre of the pollution damage from your driving, and send you a similar monthly bill. How would that additional cost affect your decision to drive?


## TRUE/FALSE

## Circle the correct answer.

### 1.1 SCARCITY AND CHOICE

1. Economics is about how individuals, businesses, and governments make the best possible choices to get what they want, and how those choices interact in markets.
2. People who win the lottery don't have to make smart choices.
1.2 OPPORTUNITY COST
3. Opportunity cost is equal to money cost.
4. In 2007 the Government of Canada announced a \$1000 Apprenticeship Incentive Grant to cover the costs of tuition, travel, and tools for apprentices in the sealing trades. This will eliminate the opportunity cost of being an apprentice for those who receive the cash grant.
5. According to "Economics Out There" on p. 6, men have a larger incentive to get a post-secondary education because not getting a post-secondary education results in a relatively worse outcome compared to women.
1.3 GAINS FROM TRADE
6. Traditionally, women have specialized in unpaid work at home and men have specialized in paid work outside the house. One possible explanation for this could be that men held a comparative advantage in performing housework (for example, cooking, cleaning, and child care).
7. The theories of comparative advantage, specialization, and trade in this chapter are consistent with the belief that "opposites attract."
8. Sheryl and Darrel are trying to decide who should stay at home to take care of their newborn child and who should continue to work full-time outside the house. Sheryl makes $\$ 30$ an hour and Darrel earns $\$ 26$ an hour. If both are equally effective (or "productive") at taking care of the child, then based on opportunity costs Sheryl should stay at home to take care of their newborn.
9. The proportion of families with both parents working outside the home and sharing child care responsibilities has risen in recent decades. This indicates that specialization and the traditional division of gender roles are becoming much less common in Canada.

True False

True False

True False
True False

True False

True False

True False

True False

True False
10. Government programs that make child care more affordable, such as Quebec's \$7-a-day child-care program, would likely increase the proportion of parents who work outside the home.

### 1.4 THE CIRCULAR FLOW OF ECONOMIC LIFE

11. The labour market - where employers demand labour and employees supply labour - is an output market.
12. In input markets, households are sellers and businesses are buyers; in output markets, households are buyers and businesses are sellers.
13. Decisions to go to college or take out a loan are macroeconomic choices.
1.5 WEIGH MARGINAL BENEFITS AND COSTS
14. Implicit costs are the opportunity costs of investing your own money or time.
15. Negative externalities are benefits that affect others external to a choice or a trade.

## True False

## True False

True False

True False

True False

## MULTIPLE CHOICE

Circle the correct answer.

### 1.1 SCARCITY AND CHOICE

1. You can't get everything you want because you are limited by

A) time.
B) money.
C) energy
D) all of the above.
2. Scarcity is
A) not a challenge for governments.
B) not a challenge for celebrities.
C) not a challenge for people who win the lottery.
D) a challenge for everyone.
3. Economics does not focus on
A) individuals / households
B) animals.
C) businesses.
D) government.

### 1.2 OPPORTUNITY COST

4. Opportunity cost includes
A) time you give up.
B) energy you spend.
C) money you spend.
D) all of the above.
5. In deciding whether to study or sleep for the next hour, your decision should consider all of the following except
A) how much tuition you paid.
B) how tired you are.
C) how productive you will be in that hour.
D) how much value you place on sleeping in that hour.
6. From 1991 to 2001, the proportion of 25 - to 29 -year-old women with university degrees rose from 21 percent to 34 percent, while the proportion of 25 - to 29 -year-old men with degrees rose from 16 percent to 21 percent. There is a similar trend for college diplomas. More woman than men are getting post-secondary education because
A) the gap in pay between post-secondary and high-school graduates is higher for women than it is for men.
B) the cost of not going to post-secondary education is higher for women.
C) the opportunity cost of going to post-secondary education is lower for women.
D) all of the above.
7. According to the table, all of the following statements are true except

| Median Annual Earnings | Men | Women |
| :---: | :---: | :---: |
| College diploma | $\$ 51000$ | $\$ 43000$ |
| High-school diploma | $\$ 37000$ | $\$ 32000$ |

A) people with college diplomas earn more than people with high-school diplomas.
B) men with high-school diplomas earn more than women with high-school diplomas.
C) men with college diplomas earn more than women with college diplomas.
D) women with high-school diplomas earn more than men with high-school diplomas.
8. If the resource-rich sector of Alberta's economy starts to slow down,
A) opportunity costs of upgrading to a college diploma will increase.
B) opportunity costs of upgrading to a college diploma will decrease.
C) incentives to drop out of college will increase.
D) all of the above.

### 1.3 GAINS FROM TRADE

9. Mutually beneficial gains from trade come from
A) absolute advantage.
B) comparative advantage.
C) self-sufficiency.
D) China.
10. The easiest way to calculate opportunity cost is
A) $\frac{\text { give up }}{\text { get }}$
B) $\frac{\text { get }}{\text { give up }}$
C) give up - get
D) get - give up

### 1.4 THE CIRCULAR FLOW OF ECONOMIC LIFE

11. Which of the following is not a microeconomic choice for businesses?
A) What interest rates to set
B) What products/services to supply
C) What quantity of output to produce
D) How many workers to hire
12. Which of the following is not a microeconomic choice for governments?
A) Increasing tuition rates
B) Taxing automobile emissions
C) Increasing the exchange rate of the Canadian dollar
D) Increasing the number of taxi licences
13. In the circular-flow diagram,
A) households ultimately own all the inputs of an economy.
B) governments set the rules of the game.
C) businesses are sellers and households are buyers in output markets.
D) all of the above.

### 1.5 WEIGH MARGINAL BENEFITS AND COSTS

14. All of the following should be considered when making smart choices, except
A) external costs and benefits.
B) past costs and benefits.
C) implicit costs.
D) additional costs and additional benefits.
15. For any activity, failure to consider
A) past costs will result in too much of that activity.
B) past benefits will result in too little of that activity.
C) external costs will result in too much of that activity.
D) external benefits will result in too much of that activity.

## SHORT ANSWER

## Write a short answer to each question. Your answer may be in point form.

1. You're trying to decide whether to go camping with your friends or spend a quiet weekend at home with your significant other. What incentives (think rewards and penalties), if changed, may influence your decision?
2. Olga chooses to live at home rather than move into residence during her first year of college. She often brags about the fact that she saves a lot of money by living at home. Provide some examples of what Olga may have given up by choosing to live at home.
3. Suppose the government was worried about the decline of young men in post-secondary education. What incentives might encourage more men to pursue further education?
4. Your friend has an extra ticket to the Calgary Flames-Ottawa Senators game on a Saturday night. He says he will give you the ticket for free if you pay for all other expenses. You usually work Saturday nights, so if you go you will have to take the night off work. Explain what costs you would include in deciding whether or not to go to the "free" game.
5. Seat belts save lives. Suppose that a city doubles the penalty for being caught driving without a seat belt in attempt to increase seat belt use among drivers.
A) Explain how this policy will influence driver behaviour.
B) Now suppose the city evaluates the policy and finds that the number of fatalities actually increased after the policy was introduced. Can you think of a reason why this may have occurred?
6. Consider Jacqueline and Samantha from Section 1.3, who specialize and trade to become better off. Suppose that Jack, a new person in town, is deciding between specializing (in either bread or wood) and being self-sufficient. Jack's production possibilities are illustrated below:

| Jack's Production Possibilities (monthly) |  |
| :---: | :---: |
| Bread (loaves) | Wood (cords) |
| 70 | 0 |
| 60 | 15 |
| 50 | 30 |
| 40 | 45 |
| 30 | 60 |
| 20 | 75 |
| 10 | 90 |
| 0 | 105 |
|  |  |

If Jack chooses to be self-sufficient, he prefers spending his month making 20 loaves of bread and cutting 75 cords of wood.

Determine who has the comparative advantage between
A) Jack and Jacqueline
B) Jack and Samantha
7. Suppose Jack tells Jacqueline and Samantha that he will form a partnership with the woman who makes him best off after trade. Assuming that 20 cords of wood can be traded for 20 loaves of bread, with whom would Jack prefer to go into a partnership?
8. Back in the old days, professors and students could smoke in the classrooms. Today, smoking indoors in public places is illegal.
A) Provide an example of an "external cost" that indoor smokers fail to consider when deciding to light up inside the classroom.
B) Do you think that those who smoked indoors considered the "external cost" in their decision to smoke? Why or why not?
C) Another way to discourage smoking is to tax the activity. If people respond to incentives, how would we expect smokers to adjust their behaviour in response to an increase in a cigarette tax?
9. Mrs. and Mr. Singh are encouraging both their son and daughter to get a full-time job right after completing high school. According to what you learned from "Economics Out There" on p. 6, which child should they encourage less to go to work?
10. From a social point of view, external costs should be included in making smart decisions, but sometimes they are not. In each of the following examples, determine whether the market economy (in the absence of government policy) would result in too few or too many products/services being produced. Then describe one policy or program that the government has in place to force individuals to consider these costs or benefits when they make decisions.
A) Pollution levels
B) Smoking levels
C) Education levels

