

Chapter 1 - Ten Principles

January-22-12

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Principle #1 : People Face Trade-offs

- Classic trade-off: guns and butter
- Trade-off between clean environment and high level of income
- Trade-off between efficiency and equity
 - **Efficiency:** (society) getting the most it can from its resources
 - **Equity:** the benefits of those resources are distributed fairly among society's members
- These two goals often conflict
- Understanding trade-offs is important because it helps us make better decisions

Principle #2: The Cost of Something is What You Give Up to Get It (*opportunity cost*)

Principle #3: Rational People Think at the Margin

- **Rational People:** People who systematically and purposefully do the best they can to achieve their objectives
- Decisions are not black and white, they have a lot of gray areas, where you need to balance between the black and white
- **Marginal changes:** small incremental adjustments to a plan of action
 - "Margin" - changes around the edges
 - Marginal benefits vs marginal costs

Principle #4: People Respond to Incentives

- **Incentive:** something that induces people to act
- Crucial to analyzing how markets work
 - It affects the costs and benefits that people face
 - And affects behaviour
- Be careful: it may have unintended consequences or results
 - Relationship between seat belt policy and car accidents

Principle #5: Trade Can Make Everyone Better Off

- Trade allows countries to specialize in what they do best and to enjoy a greater variety of goods and services
- Competitors are partners as well

Principle #6: Markets are Usually a Good Way to Organize Economic Activity

- Market economies, as opposed to communist regimes
 - Firms and households shaping the economy as opposed to central planning
 - Firms decide who to hire and what to make
 - Households decide what firms to work for and what to buy with their income
 - These interactions are carried out in the *marketplace*
 - Invisible hand
 - In any market, buyers look at the price when determining how much to demand, and sellers look at the price when deciding how much to supply
 - Taxes and government intervention impede on the invisible hand's workings

Principle #7: Governments Can Sometimes Improve Market Outcomes

- By enforcing rules and regulations that maintains the institutions that are key to a market economy
 - 1) Markets only work if property rights are enforced
 - **Property rights:** ability of an individual to own or
 - Farmers, restaurants, etc.
 - 2) The invisible hand is powerful, but not omnipotent. There are two broad reasons for government to intervene in the economy: to promote efficiency and to promote equity

Principle #8: A Country's Standard of Living Depends on its Ability to Produce Goods and Services

- There is a relationship between a country's **productivity** and living standards

Principle #9: Prices Rise when the Government Prints Too Much Money

- **Inflation**
- Keeping inflation low is the goal of economists all around the world
- Inflation causes the value of the currency to fall

Principle #10: Society Faces a Short-Run Trade-off between Inflation and Unemployment

- In the short-run, monetary injection leads to more demand for goods services, so firms hire more employees, and unemployment goes down

Chapter 2 - Thinking like an Economist

January-22-12

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This chapter discusses the field's methodology

The Role of Assumptions

- Assumptions can simplify things and make them easier to understand
- Economists use assumptions to answer different questions
- Economists use different assumptions when studying the short-term and long-term effects of change in the quantity of money
 - o For short term studies, we can assume prices are fixed. But for long term studies, we may assume that all prices are completely flexible

Economic Models

- Models help us understand better
- Models are built with assumptions

First Model: **Circular Flow Diagram**

- A visual model of the economy that shows how dollars flow through markets among households and firms
- In this model, the economy is simplified to include only two types of decision makers - households and firms
 - o **Firms:** produce goods and services
 - Using Inputs--> Factors of production: labour, land (natural resources), and capital (buildings and machines)
 - o **Households** own the factors of production and consume all the goods and services that the firms produce
- Households and firms interact in two types of markets:
 - o *Markets for goods and services*
 - Households are buyers and firms are sellers
 - o *Markets for the factors of production*
 - Households are sellers and firms are buyers
 - Households provide the inputs (labour, etc) that allow the firms to produce goods and services

Second Model: **The Production Possibilities Frontier**

- Unlike CFM, this model considers the tools of mathematics
- The production possibilities frontier (PPF) is a graph that shows the various combinations of output - (like the example of an economy only producing cars and computers) - that the economy can possibly produce given the available factors of production and the available production technology that firms can use to turn these factors into output
- In other words, **production possibilities frontier** is a graph that shows the combinations of outputs that the economy can possibly produce given the available factors of production and available production technology
-
- The levels of production of an economy is limited to the availability of its resources, and the allocation or distribution of resources determines the quantity of different produced goods. In the above diagram, if all the resources were allocated to the production of computers, then this economy can produce 3000 computers. If it were allocated completely to the production of cars, then the economy can produce 1000 cars given the resources it has. Or it can distribute the resources to produce both goods, as demonstrated by points A, B, D, E, and F.
- Notice point C is outside of the frontier, that's because with the resources it has, the economy

can produce at any point INSIDE the PPF, but it cannot produce outside because it does not have enough of the factors of production to support that level of output

- **Efficiency:** points ON the frontier, rather than inside it, represent the most efficient levels of production. It means the economy can't produce any more of one good without producing less of another
 - o If this happens (as in going from A to B) it is a **trade-off:** 100 more cars are produced at the expense of producing 200 fewer computers)
 - **Inefficiency:** If its inside the frontier, that means the economy is producing less than its potential (maybe because of unemployment?). It means the resources are there, but they are not being taken full advantage of.
 - The PPF also teaches us the principle of **opportunity cost.** Going from point A to B, the opportunity cost of every 100 cars is 200 computers.
 - o Read more into opportunity cost on page 28,
-
- *Practice question: Draw a production possibilities frontier for a society that produces food and clothing. Show an **efficient point**, an **inefficient point**, and an **infeasible point**.*
 - PPF illustrates **economic growth**.
 - o Society can move production from a point on the old frontier to a point on the new frontier. Which point it chooses depends on its preferences for the two goods.

Microeconomics and Macroeconomics

The field of economics is traditionally divided into two broad subfields.

- **Microeconomics** is the study of how households and firms make decisions and how they interact in specific markets.
- **Macroeconomics** is the study of economy-wide phenomena, including inflation, unemployment, and economic growth
- They are closely intertwined. The decisions of millions of people at the micro level affect the decisions of macroeconomics..

Positive vs Normative Analysis

- **Positive statements** are descriptive. They are claims that attempt to describe the world as it is
- **Normative statements** are prescriptive. They are claims that describe how the world should be
- How we verify them differs.
 - o Positive statements can be analyzed with evidence (data).
 - o Evaluating normative statements involves values as well as facts. To decide how society should be involves other factors like religion, ethics, and political philosophy
- Much of economics is positive

The Demand Curve

The demand curve traces the effect of a good's price on the quantity of the good consumers want to buy.

- D1 - Her income is set at 30,000
- Here, The demand curve is downward sloping, indicating that a higher price reduces the quantity of novels demanded. Because the quantity of novels demanded and the price move in opposite directions, we say that the two variables are negatively related. (Conversely, when two variables move in the same direction, the curve relating them is upward sloping, and we say the variables are positively related.)
- When her income increases, we can say her demand curve for novels **shifts** to the right. When it decreases, we can say it **shifts** to the left.

Moments along a curve

- o As the price falls she moves along her demand curve from left to right. The demand curve, however, stays fixed in the same place

Shifts of a curve

- If the prices remain fixed but her income changes - i.e. it increases - Emma buys more novels at each price, and her demand curve shifts out, as shown in Figure 2A. 4.
- When a variable that is not named on either axis changes, the curve shifts. In this case, its income.

Slope

The slope of a line is the ratio of the vertical distance covered to the horizontal distance covered as we move along the line.

To calculate a numerical value for the slope, we must choose two points on the line. When we apply the slope formula, we are concerned with the change between these two points; in other words, we are concerned with the difference between them, which lets us know that we will have to subtract one set of values from the other, as follows:

$$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{\text{First } y\text{-coordinate} - \text{Second } y\text{-coordinate}}{\text{First } x\text{-coordinate} - \text{Second } x\text{-coordinate}} = \frac{6 - 8}{21 - 13} = -\frac{2}{8} = -\frac{1}{4}$$

A small slope (a number close to zero) means that Emma's demand curve is relatively flat; in this case, she adjusts the number of novels she buys substantially in response to a price change. A larger slope (a number farther from zero) means that Emma's demand curve is relatively steep; in this case, she adjusts the number of novels she buys only slightly in response to a price change.

Cause and Effect

Graphs can help us in understanding cause and effect in economics. However, in the real world, it is difficult to establish a relationship between cause and effect

- 1) Because variables cannot easily be held constant.
 - Also, we might overlook a third omitted variable that influence the graph.
 - For example, if the government draws a link between more lighters per house increases the likelihood of cancer in that house, they might be overlooking a third variable: the use of cigarettes in that house. So it might be that cigarettes cause cancer, not lighters.
 - When you see a graph being used to support an argument about cause and effect, it is important to ask whether the movements of an omitted variable could explain the results you see.
- 2) We might run into a second problem: reverse causality
 - We might decide A causes B when in fact B causes A

Chapter 4 - Market forces of Supply and Demand

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Supply and Demand

- Supply and demand are the forces that make market economies work. They determine the quantity of each good produced and the price at which it is sold.
- It considers how buyers and sellers behave and how they interact with one another. It shows how supply and demand determine prices in a market economy and how prices, in turn, allocate the economy's scarce resources.

Markets and Competition

What is a market?

- A market is a group of buyers and sellers of a particular good or service.
- The buyers as a group determine the demand for the product, and the sellers as a group determine the supply of the product.

What is competition?

- Economists use the term competitive market to describe a market in which there are so many buyers and so many sellers that each has a negligible impact on the market price.
- Lets assume markets are perfectly competitive
- To reach this highest form of competition, a market must have two characteristics:
 - o (1) the goods offered for sale are all exactly the same, and
 - o (2) the buyers and sellers are so numerous that no single buyer or seller has any influence over the market price.
- Perfectly competitive markets are the easiest to analyze because everyone participating in the market (*price takers*) takes the price as given by market conditions.
- The opposite of perfect competition is a monopoly

Demand

The Demand Curve: The relationship between Price and Quantity Demanded

Quantity Demanded: The quantity demanded of any good is the amount of the good that buyers are willing and able to purchase.

- The amount of a good that buyers are willing and able to purchase
- Among many things that play a role, the price of a good is a central factor in determining the quantity demanded
- Because the quantity demanded falls as the price rises and rises as the price falls, we say that the quantity demanded is *negatively* related to the price.
 - o This is called the **law of demand**: the claim that, other things equal, the quantity demanded of a good falls when the price of the good rises

Demand schedule: a table that shows the relationship between the price of a good and the quantity demanded

◆ Page 72

- This chart illustrates the **law of demand**
- By convention, the price of ice cream is on the vertical axis, and the quantity of ice cream demanded is on the horizontal axis. The downward-sloping line relating price and quantity demanded is called the demand curve.

Market Demand vs Individual Demand

Market demand is derived from individual demand

The demand curve in Figure 4.1 shows an individual's demand for a product. To analyze how markets work, we need to determine the market demand, which is the sum of all the individual demands for a particular good or service at each price.

◆ Shifts in the Demand Curve

If something happens to alter the quantity demanded at any given price, the demand curve shifts. Any change that increases the quantity demanded at every price, such as our imaginary discovery by nutritionists, shifts the demand curve to the right and is called an increase in demand and vice-versa for a decrease in demand.

Variables that can shift the demand curve?

- **Income:** A lower income means that you have less to spend in total, so you would have to spend less on some—and probably most— goods.
 - **Normal Good:** If the demand for a good falls when income falls, the good is called a normal good. In other words, a good for which, other things equal, an increase in income leads to an increase in demand
 - i.e. ice cream
 - **Inferior Good:** If the demand for a good rises when income falls, the good is called an inferior good. In other words, a good for which, other things equal, an increase in income leads to a decrease in demand
 - i.e. bus rides
- **Wealth effect:** related issue, but its distinct from yearly income. For most individuals, the most important components of their wealth are the value of their home and the value of their savings. The impact of changes in wealth on both the amount and composition of goods that individuals consume is called the wealth effect.
- **Prices of Related Goods:**
 - **Substitutes:** When a fall in the price of one good reduces the demand for another good, the two goods are called substitutes. Substitutes are often pairs of goods that are used in place of each other. (or vice versa, an increase in the price of one increases the demand of another)
 - i.e. - if the price of frozen yogurt falls, you will buy more frozen yogurt, but also less ice cream. The Frozen yogurt will substitute the ice cream
 - **Compliments:** When a fall in the price of one good raises the demand for another good, the two goods are called complements (or vice versa, an increase in the price of one decreases the demand for the other)
 - i.e. if the price of hot fudge falls, you will buy more hot fudge, but also probably more ice cream because they go together
- **Tastes**
 - Influences demand
- **Expectations**
 - if you expect the price of ice cream to fall tomorrow, you may be less willing to buy an ice- cream cone at today's price.
- **Number of buyers**
 - The more people who want to buy a good or service, the quantity demanded in the market would be higher at every price and the demand curve would shift to the right

Summary: If you have trouble remembering whether you need to shift or move along the demand curve, it helps to recall a lesson from the appendix to Chapter 2. A curve shifts when there is a change in a relevant variable that is not measured on either axis. Because the price is on the vertical axis, a change in price represents a movement along the demand curve. By contrast, income, the prices of related goods, tastes, expectations, and the number of buyers are not measured on either axis, so a change in one of these variables shifts the demand curve.

The Supply Curve: The Relationship between Price and Quantity Supplied

The quantity supplied of any good or service is the amount that sellers are willing and able to sell. When the price of ice cream is high, selling ice cream is profitable, and so the quantity supplied is large. (or vice versa when the price is

low - less profitable).

Because the quantity supplied rises as the price rises and falls as the price falls, we say that the quantity supplied is *positively related* to the price of the good.

Law of Supply: This relationship is called the law of supply: Other things equal, when the price of a good rises, the quantity supplied of the good also rises, and when the price falls, the quantity supplied falls as well.

Supply Schedule: a table that shows the relationship price of a good and the quantity supplied

Supply Curve: a graph of the relationship between the price of a good and the quantity supplied. The supply curve slopes upward because, other things equal, a higher price means a greater quantity supplied.

Market Supply vs Individual Supplies

Just as market demand is the sum of the demands of all buyers, market supply is the sum of the supplies of all sellers. The quantity supplied in a market is the sum of the quantities supplied by all the sellers at each price. Thus, the market supply curve is found by adding horizontally the individual supply curves. At a price of \$ 2, Ben supplies 3 ice- cream cones, and Jerry supplies 4 ice- cream cones. The quantity supplied in the market at this price is 7 cones.

Shifts in the Supply Curve:

Any change that raises the quantity that sellers wish to produce at a given price shifts the supply curve to the right. Any change that lowers the quantity that sellers wish to produce at a given price shifts the supply curve to the left.

Variables that can shift the supply curve:

- Technology
- Expectations
- Input prices
- Number of sellers

Supply and Demand Together

Figure 4.8 shows the market supply curve and market demand curve together. Notice that there is one point at which the supply and demand curves intersect. This point is called the market's equilibrium. The price at this intersection is called the equilibrium price, and the quantity is called the equilibrium quantity.

- **Equilibrium:** a situation in which the price has reached the level where quantity supplied equals quantity demanded
- **Equilibrium price:** the price that balances quantity supplied and quantity demanded
- **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price

At the equilibrium price, the quantity of the good that buyers are willing to buy exactly balances the quantity that sellers are willing to sell. (sometimes called the market clearing price). Basically, there's a 1:1 ratio of suppliers and demanders.

- **Surplus:** (*excess supply*) a situation where the quantity supplied is more than the quantity demanded
 - o When the market price is above equilibrium price
- **Shortage:** (*excess demand*) a situation where the quantity supplied is less than the quantity demanded
 - o When the market prices is below the equilibrium price

Law of supply and demand: With too many buyers chasing too few goods, sellers can respond to the shortage by raising their prices without losing sales. As the price rises, quantity demanded falls, quantity supplied rises, and the

market once again moves toward the equilibrium.

- the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance

QUICK RECAP: So far we have seen how supply and demand together determine a market's equilibrium, which in turn determines the price of the good and the quantity of the good that buyers buy and sellers sell.

Three Steps to Analyzing Changes in Equilibrium

- First, we decide whether the event shifts the supply curve, the demand curve, or in some cases, both curves.
- Second, we decide whether the curve shifts to the right or to the left.
- Third, we use the supply- and- demand diagram to compare the initial equilibrium and the new equilibrium, which shows how the shift affects the equilibrium price and quantity

Example (page 84) : See panels in the illustration below:

- A) SHIFT IN DEMAND QUESTION: How a heat wave changes the demand for ice cream.
 - Demand increases substantially
 - Supply falls just a little
- B) SHIFT IN SUPPLY QUESTION: How a hurricane that destroys part of the sugar cane crop and drives up the price of sugar affects the supply for ice cream.
 - Supply falls substantially, Demand rises a little
 - The equilibrium quantity falls
- C) SHIFT IN BOTH SUPPLY AND DEMAND QUESTION: Now suppose that the heat wave and the hurricane occur during the same summer.
 - The supply and demand both change by the same magnitude
 - Equilibrium quantity stays the same but the prices rise

To summarize, a shift in the supply curve is called a “change in supply,” and a shift in the demand curve is called a “change in demand.” A movement along a fixed supply curve is called a “change in the quantity supplied,” and a movement along a fixed demand curve is called a “change in the quantity demanded.”

Chapter 5 - Measuring a Nation's Income

February-06-12

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Gross domestic product: (GDP) is the market value of all final goods and services produced within a country in a given period of time.

- ✓ ▪ **'Market value'** means how much people are willing to pay for a good or service which determines its value. If the price of an apple is twice the price of an orange, then an apple contributes twice as much to GDP as does an orange.
- ✓ ▪ **'of all'** means GDP is comprehensive, it includes everything bought and sold, excluding illegal transactions
- ✓ ▪ **'final goods'** means goods that have reached the final stage of production
- ✓ ▪ **'produced'** means GDP only considers goods and services produced during a specific period of time, like a fiscal year, and not the year before (used cars)
- ✓ ▪ **'period of time'** means GDP measures the economy's flow of income and expenditure during a specific interval, like a year or quarter

- ✓ GDP measures two things at once:
 - (1) the total **income** of everyone in the economy and
 - (2) the total **expenditure** on the economy's output of goods and services.
- This is because they are the same things
 - For an economy as a whole, income must equal expenditure
 - Dollar for dollar, there is a buyer and a seller
 - Every dollar of spending by some buyer is a dollar of income for a seller
 - Every transaction has a buyer and a seller

(See page 102 for other measures of income such as GNP, NNP, National Income, Personal Income, Disposable Personal Income)

✓ Expenditure Approach

GDP (which we denote as Y) is divided into four components: consumption (C), investment (I), government purchases (G), and net exports (NX):

$$Y = C + I + G + NX$$

C=Consumption

- spending by households on goods and services, with the exception of purchases of new housing

I=Investment

- Investment is the purchase of goods and services that will be used in the future to produce more goods and services.
- It is the sum of spending on capital equipment, inventories, and structures, including household purchases of new housing
- the purchase of a new house is the one form of household spending categorized as investment rather than consumption.
- the meaning of investment is different than how we usually define investment as banks and etc. it's the purchase of capital equipment and etc.

Government Purchases

- spending on goods and services by local, territorial, provincial, and federal governments
- Includes salaries of government workers and spending of public works

Net Exports

- the value of a nation's exports minus the value of its imports; also called the trade balance

Factor Incomes Approach

This time, the focus is on income EARNING activity, not on SPENDING activity.

Y (aggregate income or GDP) can be broken down into:

- **Factor payments, indirect taxes, depreciation**
 - o Factor payments include: salaries and wages to labour, rent to landlords, interest and dividends to investors, profits to entrepreneurs
 - o Indirect taxes include: PST, HST, GST
 - o Depreciation includes: whatever is required to maintain the capital stock in its existing condition. Otherwise known as *capital consumption allowance*

NDP (net domestic production) = **Factor incomes (or payments) + indirect taxes**

To calculate GDP (same as Y) = NDP + depreciation

So....

GDP = factor incomes + indirect taxes + depreciation

✓ **Real VS Nominal GDP**

[Keep in mind that] If total spending rises from one year to the next, one of two things must be true:

- (1) The economy is producing a larger output of goods and services, **OR**
- (2) goods and services are being sold at higher prices.

- Economists want to study the amount of goods and services produced that are **NOT** affected by price changes
- This is called **REAL** GDP: the production of goods and services valued at constant prices (base year levels).
 - o Real GDP reflects only the quantities produced.
- As opposed to **NOMINAL** GDP: the production of goods and services valued at current prices. Reflects both the prices of goods and services and the quantities of goods and services the economy is producing
- From these two statistics, we can compute the GDP **Deflator**, which reflects the prices of goods and services but not the quantities produced

✓ **Nominal GDP**

- Uses current prices to value the economy's production of goods and services

✓ **Real GDP**

- We calculate real GDP by first choosing one year as a base year.
- We then use the prices of hot dogs and hamburgers in the base year to compute the value of goods and services in all of the years.
- In other words, the prices in the base year provide the basis for comparing quantities in different years.
- For the **base year**, real GDP always equals nominal GDP
- Because real GDP is not affected by changes in prices, changes in real GDP reflect only changes in the amounts being produced.
- **Growth in the economy** --> the percentage **change** in real GDP from one period to another.
- **Thus, real GDP is a measure of the economy's production of goods and services.**
- The level of real GDP is a good gauge of economic prosperity, and the growth of real GDP is a good gauge of economic progress.

✓ **GDP Deflator**

- Measures the level of prices in the economy

- Calculated from the **ratio of the nominal to real GDP**
- a measure of the price level calculated as the ratio of nominal GDP to real GDP times 100
- GDP deflator reflects the current level of prices relative to the level of prices in the base year.
- reflects what is happening to prices, not the quantities
- It is calculated as follows:

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

- The GDP deflator for the base year always equals 100
- For subsequent years, it measures the change in nominal GDP from the base year that cannot be attributable to a change in real GDP

Inflation:

- a situation in which the economy's overall pricing level is rising
- **Inflation rate:** is the % change in some measure of the price level from one period to the next.
- Using the GDP deflator, the inflation rate between two consecutive years is computed as follows:
- Another way to measure

Chapter 6 - Measuring the Cost of Living

February-09-12

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We need to find some way of turning dollar figures into meaningful measures of purchasing power. That is exactly the job of a statistic called the **consumer price index**. After seeing how the consumer price index is constructed, we discuss how we can use such a price index to compare dollar figures from different points in time.

The goal of the consumer price index is to measure changes in the cost of living. In other words, the **consumer price index tries to gauge how much incomes must rise in order to maintain a constant standard of living**.

Consumer Price Index (CPI)

- A measure of the overall cost of the goods and services bought by a typical consumer
- It is used to monitor changes in the cost of living over time
- When the CPI rises, the typical family has to spend more to maintain the same standard of living
 - o Inflation
- This chapter provides the background for the analysis by showing how economists measure the inflation rate using the CPI
- Reported by Stats Can on a monthly basis

How the CPI is calculated

- Using data from over 600 goods and services

1) Determine the basket

- o Determine which prices are most important to the typical consumer, and give those items greater weight in measuring the cost of living

2) Find the prices

- o Of each of the goods and services in the basket for each point in time

3) Compute the basket's cost

- o Use the data on prices to calculate the cost of the basket of goods and services at different times
- o Don't change the quantity in the basket

4) Choose a base year and compute the index

- o The choice of the base year is arbitrary
- o Once the base year is chosen, The index is calculated as follows

$$\blacksquare \text{ CPI} = \frac{\text{Price of basket of goods/services in current year}}{\text{Price of basket in base year}} \times 100$$

5) Compute the Inflation rate (IR)

- o Use the CPI to calculate the IR, which is the percentage change in the price index from the preceding period
- o Inflation rate between 2 consecutive years is computed as follows:

$$\blacksquare \text{ Inflation rate in year 2} = \frac{\text{CPI in year 2} - \text{CPI in year 1}}{\text{CPI in year 1}} \times 100$$

The price of the basket of goods and services in each year is divided by the price of the basket in the base year, and this ratio is then multiplied by 100. The resulting number is the consumer price index.

Core Inflation

- StatsCan also calculates the rate of “core” inflation, which excludes the most volatile components from the CPI basket of goods and services.
- Core inflation is often thought to be useful in predicting the underlying trend of changes in the consumer price index.

Three Problems with the CPI

- Commodity Substitution Bias
 - o Some prices increase more than others, and customers will substitute some products for less expensive ones. If a price index is computed assuming a fixed basket of goods, it ignores the possibility of consumer substitution and, therefore, overstates the increase in the cost of living from one year to the next.
- Introduction of new goods
 - o As new goods are introduced into the economy, consumers have more choices and each dollar is worth more. Yet, because the consumer price index is based on a fixed basket of goods and services, it does not reflect the increase in the value of the dollar that arises from the introduction of new goods.
- Unmeasured quality change
 - o When the quality of a good in the basket changes— for example, when a car model has more horsepower or uses less gas from one year to the next— Statistics Canada adjusts the price of the good to account for the quality change. It is, in essence, trying to compute the price of a basket of goods of constant quality. Despite these efforts, changes in quality remain a problem, because quality is so hard to measure.

GDP Deflator VS CPI

- Economists and policy makers monitor both the GDP deflator AND the CPI index to gauge how quickly prices are rising
- Usually, they tell a similar story, but **two** important differences cause them to **diverge**
 - See page 127 for more info on this

| | |
|--|--|
| 1) GDP deflator reflects the prices of all goods and services <u>produced domestically</u> . | Whereas CPI reflects the prices of all goods and services <u>bought by consumers</u> . |
|--|--|

- i.e. Recall: Canadian Bombardier sales, or German Volkswagen sales, etc.

| | |
|---|--|
| 2) The CPI compares the price of a <u>fixed</u> basket of goods and services to the price of the basket in the base year. The basket of goods and services is changed every 4 years by Stats Can. | The GDP deflator compares the price of the <u>currently produced</u> goods and services to the prices of the same goods and services in the base year. |
| | - Thus, the group of goods and services used to compute the GDP deflator changes automatically over time |

Question: Explain briefly what the consumer price index is trying to measure and how it is constructed.

Correcting Economic Variables for the Effects of Inflation

Dollar Figures from Different Times

To compare the 1957 price of gas with the 2009 price, we need to **inflate** the price of 9.5

cents per litre to turn 1957 dollars into 2009 dollars. StatsCan gives a CPI of 14.8 for 1957 and 114.3 for 2009/ (The base year is 2002.) Thus, the overall level of prices rose by a factor of 7.72 (which equals 114.3/ 14.8). We can use these numbers to measure the 1957 price of gaso-line in year 2009 dollars. The calculation is:

$$\begin{aligned} \text{1957 gas price in 2009 dollars} &= \text{1957 gas price} \times (\text{CPI in 2009}/\text{CPI in 1957}) \\ &= 9.5 \text{ cents} \times (114.3/14.8) \\ &= 73.4 \text{ cents} \end{aligned}$$

Therefore, the 1957 price of gasoline is equal to a price of 73.4 cents per litre in 2009, which is much less than the price that gas is actually going for in 2009. So, after adjusting for inflation, the price of gas is still higher than it was in 1957.

Indexation

- When some dollar amount is automatically corrected for inflation by law or contract, the amount is said to be indexed for inflation.
 - Wages, CPP, brackets of federal income tax, etc.

Real and Nominal Interest Rates

Interest represents a payment in the future for a transfer of money in the past.

- As a result, interest rates always involve comparing amounts of money at different points in time.
- To fully understand interest rates, we need to know how to correct for the effects of inflation.

Let's say Sally has \$5000 in the bank. The higher the rate of inflation, the smaller the increase in Sally's purchasing power. If the rate of inflation exceeds the rate of interest (that she earns), her purchasing power actually falls. And if there is deflation (that is, a negative rate of inflation), her purchasing power rises by more than the rate of interest.

The interest rate that measures the change in dollar amounts is called the **nominal interest rates**, and the rate corrected for inflation is called the **real interest rate**.

Nominal interest rate: the interest rate as usually reported without a correction for the effects of inflation

- Tells you how fast the **number of dollars** in your bank account rises over time

Real interest rate: the interest rate corrected for the effects of inflation

- Tells you how fast the **purchasing power** of your bank account rises over time

Real interest rate = Nominal Interest rate - Inflation Rate

(See page 131 for examples)