



ECONOMICS FOR EVERYONE

Principles and Applications

MICHAEL C. M. NG

Economics for Everyone

Principles and Applications

Michael C. M. Ng

To Tiffany Choi, Marcus Ng, and Taylor Ng

Abstract

The study of economics originated in the West. In Chinese, the characters selected to represent the word ‘economics’ mean ‘to manage economic activity and to help people’. The Chinese characters are appropriate, since ‘to manage economic activity’ refers nicely to how individuals and firms allocate their limited resources to make themselves as well off as possible, while ‘to help people’ refers to how governments design policies to improve economic welfare. Economics, to some extent, focuses on the balance between resources and desires. Desires are unlimited but resources are limited. What does that mean?

Economics is the study of how society manages its scarce resources

First, you must know the meaning of resources. In general, resources mean natural resources (e.g., minerals and land) and man-made resources (e.g., physical capital, human capital and technologies). This definition of resources applies for the whole economy. However, for individuals and firms, another interpretation of resources is adopted: resources are the income and revenue that they can use. Second, since resources are limited, society has less to offer than most people desire. The management of limited resources is important. For the individual and for the economy, different choices have to be made because resources are scarce. For individuals, the choices include how to make money, how to spend money, how to save and invest, and how to respond if economic conditions suddenly change (such as the arrival of an unexpected tax increase). In short, individuals must allocate their limited income among various uses while taking into account the possible changes in the economy. As for the whole economy, the decisions could be whether to produce more food, clothing or computer software. Because of limited resources, the economy must decide what priority to give different goods. Third, it is essential to understand how the economy works. In modern societies, resources are allocated not by a single central planner but through the market forces produced by the simultaneous actions of millions of households and firms. This is called the market mechanism via the *invisible hand* in which the main idea is that ‘selfish’ individual choices concerning resources and desires lead to unforeseen — but socially desirable — outcomes.

The existence of economics originates from unlimited wants relative to scarce resources. Therefore, one of the most fundamental principles in economics is that people face tradeoffs. To get one thing done, you have to give up another. For example, for individuals, economic decisions that involve tradeoffs include:

- how to utilize time. You have about 16 hours per day for work, study or recreation. In a free economy, you could allocate your time to working, studying economics or watching movies. For every hour you spend working, you cannot be studying economics or watching movies — one hour of work ‘loses’ one hour of study or recreation. In other words, you’ve traded off economics and the movies to work.
- how to allocate income. As an individual, you have to make decisions such as buying food or buying clothing. When you choose to spend an extra dollar on food, you have one less dollar to spend on clothing.

Based on these two simple examples, you might now recognize where the saying ‘There’s no such thing as a free lunch,’ might come from. Sure, a lunch may not cost you any money directly but it undoubtedly costs the society some resources to produce the food for the lunch. That means some other goods and services have to be sacrificed to make the lunch available to you. Everything you do has a cost — so perhaps the first and most important thing you need to do is to redefine cost.

For an economy, decisions that involve tradeoffs include:

- what goods and services to produce. If a society produces more high- tech commodities such as computers, it must produce, say, fewer clothes because there are only so many resources — workers, raw materials, capital and energy — available to produce goods.
- how to produce these goods and services. To develop the high-tech industry, for example, the demand for skilled workers increases at the expense of unskilled workers. This implies that the wage for skilled workers would rise, but the wage for unskilled workers would fall.
- who gets the goods and services. If someone obtains more of society’s goods and services, then someone else gets less.

The differences between *efficiency* and *equity* have to be understood. Efficiency means that society is getting the most it can from its scarce resources. Equity means that the benefits of resources are distributed fairly among society’s members. In other words, efficiency refers to the size of the economic pie and equity refers to how the pie is divided. For example, the development of the high-tech industry raises efficiency by increasing the output, but it might widen the income gap — the skilled workers get richer while the unskilled workers become poorer. From society’s point of view, then, there is a conflict and tradeoff between efficiency and equity. Acknowledging life’s tradeoffs is important because people are likely to make good decisions only if they understand the options that are available to them. A rational decision-maker takes an action if and only if the marginal benefit of the action exceeds the marginal cost. Rational decision-makers think at the margins.

Because people face tradeoffs, making decisions requires comparing the costs and benefits of alternative actions. **The cost of something is what you give up to get it.** Let's say you start your own flower shop in a mall by selling 100 floral arrangements per day. The benefit is the daily sales, say \$10,000 at \$100 per unit. However, the cost is not as obvious as the benefit. There are two types of costs involved: *explicit costs* and *implicit costs*.

1. The explicit cost is \$6,000, which includes the rent for the shop (\$2,000), the cost of materials (\$1,500) and the payment of wages to one employee (\$2,500).
2. Because you run the shop by yourself, there is an implicit cost: the value of your time. The value of your time can be measured by the highest wage, say \$3,000, you could earn working at some other job.

The total cost to run your own firm is therefore \$9,000. Note that this total cost is referred to as the *opportunity cost*, which can be measured in terms of the money you give up to get that item.

In this case, it is worthwhile to run your own business because you can make a positive profit of \$1,000. However, in some cases, the benefit might not be worth the opportunity cost. For example, Bill Gates dropped out from Harvard University. The facts prove that he made the smart decision: the benefit from attending university would have been less than the cost of not attending university (that is, the money he has earned from his business). Since people make decisions by comparing (marginal) benefits and (marginal) costs, we would like to know the factors that affect these benefits and costs. The crucial factor is incentives, which can result in a change in people's behaviour.

This book aims to firstly introduce you to the problems of microeconomics and to enable you to explore the ways in which private and government agents deal with them. It covers economic efficiency and resource allocation, market versus command economy, product and factor markets, and the problem of externalities. Besides, the second part of this book introduces you to the problems of macroeconomics and to enable you to explore the ways in which private and government agents deal with them. It covers macroeconomic indicators and the nature of macroeconomic problems, and macroeconomic policy.

There are ten chapters in this book. The discussions and topics progress from basic concepts to fundamental analysis and then to real-world applications. The discussion begins with the behaviour of individual consumers and producers in a market economy, with applications to the economies of Hong Kong, China and the US. We also examine market structure and market power as well as their implications for pricing, production and competition, and then we consider factor markets, market distortions and public goods. The resource allocation and welfare effects of government policies under different scenarios are discussed. The second part of this book introduces macroeconomics theories which investigate the aggregate behaviour of the whole economy and examine the real and financial sides of long-run economic performance. In addition, we analyse the causes and consequences of short-

run economic fluctuations and business cycles. The analysis is further extended to the open economy, which explore what happens when exchange rates change and the trade balance between countries are no longer equal to zero.

This book enables readers to (1) explain the meanings of demand for and supply of goods, and discuss how markets work; (2) analyse the production and cost functions of a firm; (3) explain the market structure with its implications for a firm's optimal decision on prices and/or quantities; (4) apply the theories of factor market to analyse labour, capital and land markets; (5) discuss the meanings of externalities and market failures and explain the effects of policy interventions; (6) explain national income accounting and apply this framework for measuring economic activity in an economy; (7) analyse the long-run performance of the aggregate economy and discuss the role played by the monetary system; (8) explain the key business cycle factors related to short-run economic fluctuations; (9) discuss macro-economic stabilization for both closed and open economies.

Table of contents

Abstract	3
1 How Markets Work?	11
1.1 Introduction	11
1.2 Demand	12
1.3 Supply	16
1.4 Market Outcome: Interaction between Demand and Supply	18
1.4.1 Equilibrium Concept	19
1.4.2 Change in Equilibrium	19
1.4.3 Voluntary Exchange Makes People Better Off	21
1.5 Government policies as a factor that changes market equilibrium	22
1.5.1 Price Ceiling	22
1.5.2 Price Floor	23
1.5.3 Taxes	24
1.6 Elasticity	25
1.6.1 Demand Elasticity	26
1.7 Consumer Surplus, Producer Surplus and Market Efficiency	29
1.7.1 Consumer Surplus	29
1.7.2 Producer Surplus	29
1.7.3 Market Efficiency	29
1.7.4 Market Mechanism is Always Preferred	31
1.8 Inefficiency of Per-unit Taxation	32
1.9 Summary	32
2 How Producers Make Decision?	35
2.1 Introduction	35
2.2 What is a Firm?	36
2.3 Costs and Profits	36
2.3.1 Opportunity Cost and Economic Profit	36
2.3.2 Production and Costs	39
2.3.3 Various Measures of Cost	41
2.3.4 Short Run and Long Run Costs	42
2.3.5 Returns to Scale and Economies of Scale	42
2.4 Many Sellers for Identical Product - Competitive Markets	43
2.4.1 Competition and Competitive Markets	44
2.4.2 Marginal Revenue and Supply Decisions of a Competitive Firm	46
2.5 Summary	49

3 How Market Power Affects Market Outcomes?	51
3.1 Introduction	51
3.2 What is Market Structure?	51
3.3 Single Seller - Monopoly	53
3.3.1 Why Are There Monopolies?	54
3.3.2 Natural Monopoly	54
3.3.3 Monopoly's Outputs and Pricing Decision	56
3.3.4 Monopoly's Welfare Loss	58
3.3.5 How does Government Regulate Monopolies?	59
3.3.6 Price Discrimination	60
3.4 Few Sellers for Similar Products - Oligopolies	61
3.4.1 Game Theory	62
3.4.2 Market with Two Sellers - Duopoly Equilibrium	65
3.4.3 Collusion and Cartels	66
3.5 Many Sellers for Differentiated Products - Monopolistic Competition	68
3.6 Summary	69
4 Price of Labour and Discrimination	71
4.1 Introduction	71
4.2 Markets for Factors of Production	72
4.2.1 Labour Demand in a Competitive Firms	73
4.2.2 Labour Supply in a Competitive Firms	75
4.2.3 Labour Market Equilibrium	76
4.2.4 Factors Affecting Labour Demand and Supply	77
4.2.5 How About Other Production Factors?	78
4.3 Earnings and Discrimination	80
4.3.1 Some Determinants of Equilibrium Wage	80
4.3.2 Ability and Quality of Labour: Signaling Effects	82
4.3.3 Any Superstar Effect on Wage?	83
4.3.4 Pay More than Market Rate - More Efficient?	85
4.3.5 How to Explain Labour Market Discrimination?	86
4.4 Summary	89
5 What If Markets Do Not Work?	91
5.1 Introduction	91
5.2 Externalities	92
5.2.1 Classification of Externalities	93
5.2.2 Market Outcomes Under Externalities	94
5.2.3 Public Policies for Externalities	96
5.2.4 Private Solutions for Externalities	99
5.2.5 Government Intervention Sometimes Improves Market Outcomes	102
5.3 Public Goods and Common Resources	104
5.3.1 Classification of Goods	104
5.3.2 Public Goods	105
5.3.3 Common Resources	106
5.4 Summary	108

6 How to Measure Nation's Income and Cost of Living?	111
6.1 Introduction	111
6.2 Measuring a Nation's Income	112
6.2.1 Production, Income and Expenditure	112
6.2.2 Gross Domestic Product	113
6.2.3 The Components of GDP	114
6.2.4 Income per person - Per Capita GDP	115
6.2.5 Economic Well-being and GDP	117
6.3 How to Measure Cost of Living?	119
6.3.1 Price Indices	120
6.3.2 Shortcomings of Measuring Cost of Living	121
6.3.3 Using Price Indices to Adjust Inflation Effects on Variables	122
6.4 Summary	124
7 Real Sectors in the Long Run	127
7.1 Introduction	127
7.2 Outputs and Economic Growth	128
7.2.1 Growth Accounting and Productivity	129
7.2.2 Productivity Determines Country's Living Standard	131
7.2.3 Public Policies on Economic Growth	131
7.3 Loanable Funds Market	132
7.3.1 Saving and Investment in National Income Accounting	132
7.3.2 Loanable Funds Market Equilibrium	134
7.3.3 Financial System	137
7.4 Long Run Unemployment Rate	138
7.4.1 What is Unemployment?	138
7.4.2 Unemployment Duration	140
7.4.3 Frictional and Structural Unemployment	141
7.4.3.1 Frictional Unemployment	141
7.4.3.2 Structural Unemployment	143
7.4.4 Natural Unemployment Rate	145
7.5 Summary	146
8 Monetary Sectors in the Long Run	149
8.1 Introduction	149
8.2 What is Monetary System?	150
8.2.1 Definition of Money	151
8.2.2 Money Supply and Banking System	152
8.2.3 What is Central Bank?	157
8.2.4 Monetary Policy Instruments	158
8.3 Money Supply and Inflation	161
8.3.1 Quantity Theory of Money and Monetary Neutrality	161
8.3.2 Inflation is due to Too Much Money	163
8.3.3 Are Inflation Rate and Interest Rate Related?	164
8.3.4 Are Inflation and Tax Related?	164
8.3.5 Why Inflation is Undesirable?	167

8.3.5.1	Shoeleather Costs	167
8.3.5.2	Menu Costs	167
8.3.5.3	Inflation-Induced Tax Distortions	167
8.3.5.4	Money Illusion	168
8.3.5.5	Wealth Redistribution Among Debtors and Creditors	169
8.3.6	Costs of Inflation	169
8.4	Summary	170
9	Analyzing Short Run Economic Fluctuations	173
9.1	Introduction	173
9.2	What is Aggregate Demand and Aggregate Supply?	174
9.2.1	Short Run Economic Fluctuations	174
9.2.2	Aggregate Demand	175
9.2.3	Long Run Aggregate Supply	176
9.2.4	Long Run Equilibrium	177
9.2.5	Short Run Aggregate Supply	178
9.2.6	Interaction between Short Run and Long Run Equilibrium	180
9.2.6.1	Shift in Aggregate Demand	180
9.2.6.2	Shift in Short-Run Aggregate Supply	181
9.3	Fiscal and Monetary Policy	181
9.3.1	Aggregate Demand and Money Market Equilibrium	182
9.3.2	Monetary Policy	183
9.3.3	Fiscal Policy	184
9.3.4	Should Governments be Active or Passive?	186
9.4	Tradeoff between Inflation and Unemployment	188
9.4.1	The Original Phillips Curve	188
9.4.2	Tradeoff between Inflation and Unemployment in the Short Run	188
9.4.3	Short Run and Long Run Phillips Curve	189
9.4.4	Disinflation	190
9.5	Summary	191
10	Open Economy Economics	195
10.1	Introduction	195
10.2	Basic Concepts of Open Economy Economics	196
10.2.1	International Flow of Products and Capital	196
10.2.2	Exchange Rate	198
10.2.3	Purchasing Power Parity (PPP)	200
10.3	Macroeconomic Model for Open Economy	204
10.3.1	Loanable Funds Market and Foreign Exchange Market	204
10.3.2	Comparative Statics in Open Economy	205
10.3.2.1	Government Budget	206
10.3.2.2	Trade Policy	206
10.3.2.3	Political or Financial Instability	206
10.4	Summary	207

Chapter 1

How Markets Work?

1.1 Introduction

Chapter 1 involves your first serious study of economics. In the chapter, you will learn some ‘real stuff’ about this fascinating subject, please make sure you understand a section thoroughly before you proceed to the next section. Economics is a subject that you are suggested to study sequentially. You are not suggested to jump around randomly through the sections and chapters.

In this chapter, we will examine the theories of supply and demand, which are important tools to understand the operation of the market mechanism. More specifically, this chapter (i) describes the demand-supply framework; (ii) analyses the market mechanism; (iii) explains the meaning of the elasticity of demand and supply and discusses the application of the concept of elasticity to real-world problems; (iv) examines the effects of government policies in the light of the demand-supply framework; and (v) describes the concepts of consumer surplus and producer surplus and examines the application of the concepts to study the efficiency of the market and the inefficiency of government taxation.

This chapter begins with something intuitive — **demand theory**. The simple part of demand theory is the so-called *Law of demand*: the more expensive a good is, the less you will buy, given that other things remain the same. Even for this simple theory, you need to pay close attention. You should try to understand the difference between moving along a demand curve and the shifting of a demand curve. In fact, this difference is the starting point for everything that is fruitful and interesting about economics. Next you learn about **supply theory**. The structure of supply theory is similar to that of demand theory. Putting demand and supply curves together, you will arrive at the idea of **market equilibrium**. The most important thing here is to understand how various factors affect the demand and supply curves (i.e., the shifting of curves) and thus affect market equilibrium.

Next you will study three specific government policies that influence supply and demand: the **price ceiling**, the **price floor** and the per-unit tax. These policies can be analysed using the demand-supply framework. Then you will move on to **elasticity**. Elasticity describes the sensitivity of a change in one quantity to a change in another quantity. When one quantity changes, a second quantity might