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An Introduction to Economics

Economic Theory and Society

Chandana Ghosh
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Dedicated to the memory of our revered teacher
Professor Arup Mallik
A thinker, mentor and teacher of the highest order who will live forever in the hearts of his mesmerized students

Preface

Almost all the introductory textbooks today focus exclusively on neoclassical economics. In fact, students of economics these days get an impression that neoclassical economics constitutes the whole of modern economics and it represents an objective and scientific inquiry into economic phenomena. In reality, economics is intimately related to the two classes of people living in any society: the rich and the poor. Accordingly, it has two dominant lines of thought: one seeks to further the interest of the rich and the other seeks to safeguard the interest of the poor. The former started with the writings of Malthus and finally culminated in neoclassical economics. The latter started with Smith and found its fullest form in Marxian economics. Neoclassical economics portrays capitalist economies as the ideal form of human society, while Marxian economics constitutes a strong critique of capitalist societies. It portrays capitalist societies as exploitative and crisis-prone. It argues that the capitalists earn profit by exploiting workers and the compulsions of the capitalists to earn and increase profit and the fierce competition they are subject to perpetrate crises on capitalist societies. It also deduces that the workers will unite, rise en masse against capitalist exploitation and eventually get the capitalist society transformed into a vastly superior and just society called socialist society. He also points out that the socialist society will eventually evolve into the noblest form of human society called a communist society, where all men will be equal. The objective of the proposed book is to introduce the students to both these schools of thought. It also discusses Keynesian economics, which suggests measures that can counter some of the major crises that Marx said capitalist economies are subject to. To test

the theories presented here against facts, we have discussed here the current state of the capitalist world. A careful analysis of evidences suggests that in the capitalist world, a handful of giant global capitalists usurp state power, and aided by neoclassical economics and religion, they run and manage capitalist economies in their own interest. They create instability and perpetrate crises in a planned manner to further their own interest. They build into capitalist societies a mechanism that forces the workers to make their labour and saving available to the capitalists at the minimum possible prices. The instability and crisis in a capitalist economy are an integral part of the mechanism of exploitation created by the giant capitalists.

It also discusses the economic performances of three major socialist states, the Soviet Union, China and Cuba. They come out as truly civilized societies where the central goal of the economic activities is to provide every individual in the labour force with gainful employment that best suits his ability and to supply every citizen with the basic necessities of life such as quality food, clothing and shelter on an adequate scale and create a universal system of health care and education that will provide every citizen with these services free of cost. However, relentless hostility of the mighty capitalist powers caused immense troubles for the socialist states. It led to the collapse of the Soviet Union, forced China to undertake market-oriented reforms and put up tremendous hurdles on the way of Cuba's economic progress. The book also suggests strategies by means of which the poor masses in the capitalist world can put a stop to capitalist exploitation and move towards building a just and equal socialist society.

The book is extremely important, as it is essential for the students to get an introduction to both the schools of thought, which, in our view, constitute economics. The students should know what roles the two schools of thought have played and are playing in shaping people's lives and societies. The students should have a clear idea as to why Marxian economics is no longer taught in the capitalist world and the role they should play in getting their extremely unequal and unjust societies transformed into just and equal socialist societies.

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CHAPTER 1

Introduction

Abstract This chapter introduces and motivates the issues to be covered in this book. It argues that economics is an instrument of class war and, hence, it is divided into two major traditions. One line of thought, which culminated into neoclassical economics, seeks to further the interest of the giant capitalists and facilitate the expansion of capitalism. The other school of thinking, which found its fullest form in Marxian economics, seeks to improve the lot of the poor. Marxian economics constitutes a strong critique of capitalism and posits a socialist society (which will eventually transform into a communist society) as vastly superior to a capitalist society. Through this argument, this chapter explains why this book presents and discusses both neoclassical and Marxian economics and their visions of capitalism. It also makes it clear why, as the book does, it is imperative to assess both neoclassical economics and Marxian economics in the light of the recent economic performances of the major capitalist countries. Since Marxian economics regards a socialist society as a just, stable and humane society and, therefore, vastly superior to a capitalist society, this chapter argues, as has been done in this book, that it is necessary to present the economic performances of the major socialist countries and compare them to those of the major capitalist countries to verify Marx's position.

Keywords Neoclassical economics • Marxian economics • Capitalism • Socialism • Communism

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1.1 Economics and Class Division

Economics is a social science. It is concerned with how a society should be organized. People living in a society are divided into two broad classes: the rich and the poor. History of economics or economic thought has two major traditions. One line of thought speaks for the rich, while the other seeks to further the interest of the poor (see in this connection Hunt and Lautzenheiser 2014). The former culminated in neoclassical economics, while the latter found its fullest form in the writings of Karl Marx. The objective of this book is to give you an overview of neoclassical and Marxian economics and make an evaluation of the two in the light of the current global economic scenario. Most of the societies today, including ours, are capitalist societies, which we shall define shortly. Both these schools of thought tell us how a capitalist society works and whether it is good or bad. We shall present to you the visions of these two schools of thought of capitalist societies and evaluate them on the basis of the current experiences in the capitalist world. We shall also compare the economic performances of major capitalist countries to those of major socialist countries and assess Marx's and neoclassical economics' positions in the light of this comparison.

1.2 Capitalist, Socialist and Communist Societies

A capitalist society is one where the wage mode of production is the dominant mode of production. Wage mode of production is defined as a method of production under which production is carried out with hired labour or hired workers. In a capitalist society, most of the producers produce most of the goods with hired labour. In such a society, people are divided into two classes. There are people who do not own any material means of production consisting of natural resources, machinery and equipment and constructions (such as factory sheds, office buildings, etc.). They have to sell their labour for wages to survive. These people constitute the class of workers or, to use Marx's terminology, the class of 'have-nots'. The people who own the material means of production hire labour to utilize their material means of production to produce goods and services. These people are called capitalists or 'haves'. These two classes of people are locked in a bitter struggle with one another to grab a larger share of the goods and services produced in a society. Economics is used as a weapon in this struggle. Economics today is accordingly divided into two

major schools of thought: neoclassical economics and Marxian economics. The 'haves' have hired economists to develop neoclassical economics. It extols the virtues of capitalism and suggests policies that help the capitalists increase their command over the goods and services produced. To be precise, it shows that a capitalist society, if left to itself, will automatically bring about full employment of all the workers and full utilization of the productive capacities of all the production units (i.e., the organizations that produce goods and services. These organizations are referred to as firms in economics). It also shows that a capitalist economy on its own will produce all the different goods and services in optimum quantities and distribute the produced goods and services among people in an optimum manner. Hence, it recommends the policy of free market or laissez-faire. Under this policy, the government should not interfere with the economic activities of individuals and firms and allow a capitalist economy to operate on its own. We have explained in the next section why and how this policy helps the capitalists to expand their business empire and to grab most of the goods and services produced in the society. Marxian economics, on the other hand, regards a capitalist economy as highly unjust. It shows a capitalist society as one, where capitalists derive their income only by exploiting the workers. It also shows that the inherent structure and dynamics of a capitalist society make it highly unstable and extremely prone to severe crises. Thereby, it points to the necessity of changing a capitalist society into a humane, just and stable society. It recommends a socialist society, where all means of production are owned not by individuals, but collectively by the people as a whole. In a socialist society, everyone is a worker and all the individuals together collectively own all the means of production. Everyone works for the society as a whole, and the produced goods and services are distributed among the individuals in accordance with their contributions of labour to social production. In fact, Marxian economics states that there will be a mass uprising of the workers against capitalist exploitation, and this will overthrow capitalism and establish socialism. Marxian economics is also of the view that a socialist society will eventually evolve into a superior form called a communist society. It is a society where all the individuals are treated as equal. They collectively own all the means of production and all of them contribute to production in accordance with their abilities, but the produced goods and services are distributed among the individuals in accordance with their needs. The objective of this book is to give an overview of both neoclassical and Marxian economics and to show that current empirical evidences the world over lend overwhelming support to Marxian economics.

1.3 Capitalism and Democracy

A capitalist society is characterized by multi-party democracy, where every adult citizen has one vote irrespective of whether he is rich or poor. More than one political party compete for power and the one that gets majority of the votes forms the government and exercises state power. Thus, democracy grants political equality to people of a capitalist society. At the same time, a capitalist society evinces extreme inequality in the distribution of wealth and income. In such a society in the twenty-first century, just a few giant capitalists own most of the country's wealth and earn the bulk of the country's income, while the rest of the people, who constitute more than 99 per cent of the population, live in considerable poverty and misery. Obviously, the coexistence of extreme economic inequality and political equality granted by democracy is a puzzle. Let us elaborate. In the kind of democracy a capitalist country has, it is optimal for all political parties to work for the majority of the people. It is rational for them to confiscate all the wealth and surplus income of the giant capitalists and distribute them among the masses. Logically, the political parties should nationalize all the large corporations and run them for the benefit of the masses. However, political parties never behave the way described above. They, in fact, do just the opposite, that is, they take away the properties of the poor and give them away to the giant capitalists free of cost and adopt policies that help the giant capitalists expand their business empires. It is extremely important to know why the political equality granted by democracy does not pose a threat to the enormous wealth and the vast business empires of the giant capitalists and, thereby, to capitalism. One cannot comprehend how a capitalist economy works without resolving this puzzle. In what follows, we seek to resolve this paradox.

In a democracy, political parties require enormous amounts of funds for their survival and to compete with one another. They need a vast nationwide network of workers to campaign for them. They need services of the media to make their programmes and policies known to the people. All these require enormous amounts of money. The giant capitalists, with most of the country's wealth and income in their command, have the resources to provide the political parties with the requisite amount of fund. In their turn, the giant capitalists have to protect their enormous wealth from the masses. They need state power for this purpose. Hence, they form, fund and run the political parties just like their other business enterprises. Through these political parties, the giant capitalists usurp state

power. The political parties, accordingly, work for them. They help the giant capitalists expand their business empire both legally and illegally. They enact laws to give the giant capitalists a free hand in running the economy, keep taxes on the giant capitalists at the minimum possible level, seek to collect as much taxes as possible from the masses and spend the bulk of the tax revenue for the benefit of the giant capitalists in a way desired by the giant capitalists. They legalize private property and keep the enormous wealth and the business empires of the giant capitalists secure from the workers and the masses. They also formulate laws that empower the government to take away land and other properties of the poor and give them away to the giant capitalists in the name of development. Illegally, the political parties allow the giant capitalists to evade taxes and other rules and regulations.

Capitalism sets the two classes of people, namely, capitalists and workers against one another. The giant capitalists control the workers using not only the state power but also other means. They invest on a large scale in R&D to invent labour-displacing technologies and continuously incorporate them in production to reduce their dependence on labour. They do this to create large-scale unemployment so that workers lose their bargaining strength and make their labour available to the capitalists at the minimum possible price. In Chap. 3, we have presented Marxian economics, which shows, among other things, how capitalists earn profit by exploiting workers and how the incorporation of labour-saving technological changes makes exploitation more intense and augments the amount of profit earned by the capitalists.

Capitalists buy two things from the workers: their labour and their saving. Using state power, giant capitalists devise devious ways of robbing the workers of a part of their savings and securing the rest of the workers' savings at the minimum price much to the suffering of the workers. In Chap. 5, we have shown how the giant capitalists accomplish this while explaining the major economic crisis that occurred in the US in recent years.

Given the conflicting interests of the capitalists and workers and the extremely uneven strengths of the two classes of people, most of the workers live in considerable poverty and misery. To obfuscate the real cause of the poverty and misery of the masses, the giant capitalists facilitate spread of religion by funding and promoting religious institutions. They also fund and promote neoclassical economics. Religion attributes poverty and misery of man to his misdeeds in his present and past incarnations and

exhorts him to live a peaceful, honest and hardworking life dedicated to the worship of God. Neoclassical economics, on the other hand, yields the result that, if the government leaves a capitalist economy to itself, it will bring about full employment of all the workers and full utilization of productive capacities in all the firms. It will also on its own make the allocation of productive resources across different sectors of production efficient or optimum. This means that a capitalist economy has a mechanism that makes sure that all the different goods are produced in optimum quantities and they get distributed among people in an optimum manner. These results imply that the government in a capitalist country need not bother about unemployment or how productive resources get allocated across different sectors of production. Such a society will remove unemployment on its own and establish an optimal allocation of resources. Obviously, if the government in a capitalist economy follows the recommendation of neoclassical economics, it will leave the economy to itself. In that case, the giant capitalists with most of the income and wealth of the country in their command will grab most of the produced goods and services to meet their own needs leaving very little for the rest of the population and manage and run the economy in their interest. In fact, governments in capitalist countries follow the recommendation of neoclassical economics. We have discussed neoclassical economics in Chap. 2.

Capitalist economies are crisis-prone. Crises occur regularly in such economies. Giant capitalists create these crises in their interest. We have shown in Chap. 5 how the giant capitalists perpetrated the devastating economic crisis in the US in 2008 and how this crisis helped the giant capitalists expand their business empire and increase their bargaining strength manifold vis-à-vis workers. There is a general view shared by both Marx and another famous economist John Maynard Keynes that economic crises in capitalist economies are caused by impersonal market forces and not by a person or a group of persons in a planned manner. Keynes developed theories that yielded policies that the government should adopt to lift a capitalist economy out of a crisis. These policies are referred to as stabilization measures. In Chap. 4, we have discussed Keynes' theory and how his stabilization measures lift an economy out of a crisis. In Chap. 5, we have shown how the US Government and Fed designed the stabilization measures so that the US economy did not get out of the crisis fully, but remained in a state of recession indefinitely. We have argued that such a state was conducive to the giant capitalists.

1.4 Socialism: A Move to Form a Humane Society

Capitalism was imperialist right from its birth. By the time World War I had begun, the giant capitalists of Western Europe and the US through their hold over state powers conquered and colonized almost the whole of the rest of the world. However, at that time, the giant capitalists were a divided lot. They were divided on the basis of their nationalities. They fought with one another two devastating world wars for larger shares of the colonies. These World Wars were extremely damaging to the giant capitalists. After World War I, the Tsar, the emperor of Russia, became so weak that the Bolsheviks (communists) overthrew him and usurped state power almost without any resistance. Thus, the first socialist state in the world based on Marxian principles was born in Russia. It eventually grew into a much larger state, the Soviet Union. There were no private properties in the Soviet Union. All properties were owned collectively by the people, that is, they were under the ownership of the state. Revolutions also occurred in many other countries including China and Cuba. In both China and Cuba, among others, the communist governments sought to establish socialism on the basis of Marxist-Leninist principles. The objective of the communist governments in all the three countries mentioned above was to provide every member of the labour force with gainful employment and create a system that ensures that every citizen of the country gets access to quality food, clothing, shelter, health care and education on an adequate scale. They also strived to be self-reliant. Self-reliance means eliminating dependence on imported goods. This implies developing the capability of producing all the different goods and services that the country needs to fulfil the objectives stated above. To be self-reliant, a country has to be independent in the sphere of knowledge and technology. Once a country succeeds in acquiring the capability of developing its own knowledge and technology, it can devise its own ways and means of doing away with its dependence on imported goods. To achieve the aforesaid objectives, the state in the countries considered here brought under its direct ownership all natural resources and production units. The governments in these countries sought to develop their countries through a series of Five Year Plans. The planners on the basis of the productive resources available decided which commodities were to be produced and in what quantities so that the objectives mentioned above could be realized. In Chap. 6, we have assessed the economic performances of the Soviet Union, China and Cuba in the light of the objectives stated above. The Soviet Union failed to remain a

socialist state. It, in fact, disintegrated in 1991. We have examined why the Soviet Union collapsed. From 1978, China had to deviate from its socialist path. We have examined whether the deviations are real or fake and why China had to make these deviations. Cuba plunged into a deep economic crisis following the collapse of the Soviet Union. We have explained the reasons for this crisis and delineated the efforts made by Cuba to overcome it. We have shown in Chap. 6 that relentless hostility of the capitalist powers is at the root of the disintegration of the Soviet Union and the aberrations and problems in China and Cuba.

1.5 Conclusion

The Soviet Union provided every adult citizen with gainful employment. It fixed the prices of all produced goods and services and distributed the basic necessities of life such as quality food, clothing and shelter through a public distribution system to all in adequate quantities. It also created a universal system of health care and education so that everyone got these services free of cost. Cuba and China also followed the Soviet Union's example. After World War II, the Soviet Union emerged as a superpower. Its spectacular, just and humane economic performances made socialism a vastly superior alternative to capitalism. The giant capitalists, afraid of being overpowered and overthrown, got united, threatened to attack and destroy the Soviet Union and caught it in a fierce arms race. This period of hostility between the Soviet Union and the capitalist powers is referred to as that of Cold War. During the period of Cold War, workers dreamt of establishing socialism in their countries. The presence of the Soviet Union and its equitable, humane and civilized economic programmes inspired workers' movements and strengthened socialist parties all across the capitalist world. The giant capitalists, to save capitalism from extinction, had to concede ground to the workers. They passed laws improving workers' working conditions. They built social security systems to take care of the workers in periods of unemployment, old age and illness. Many of the erstwhile colonies including India declared themselves as socialist states on Marxist lines and adopted Soviet model of planned economic development. Economics syllabuses even in the advanced capitalist countries included Marxian economics, socialism and planning. Many mainstream (neoclassical) economists began to develop theories that were inspired by the ideas of Marx. In many erstwhile colonies like India, which embraced planning, governments started playing leading roles in developing indus-

try, agriculture, financial and other sectors. Governments created secured jobs with old-age pensions. They developed public distribution systems to provide the masses with food, clothing and shelter at affordable prices. They also created a system of universal health care and education to provide the masses with these services free of cost. Therefore, under the influence of the Soviet Union, the world started becoming more humane, civilized and just. Before the birth of the Soviet Union, the balance was completely against the workers. They were completely at the mercy of the giant capitalists. With the ascendancy of the Soviet Union, the balance turned substantially in favour of the workers.

However, with the collapse of the Soviet Union in 1991, global capitalists again reigned supreme, unchallenged and unthreatened by the bogey of socialism. They started again tilting the scale against the workers reclaiming the ground they conceded to them. It has, therefore, become necessary to show how the global capitalists have developed strategies to ruin workers' bargaining strength so that workers' labour and saving become available to the giant capitalists at the minimum possible prices. We have done this in Chap. 5 of the book. The giant capitalists also conquered back their erstwhile colonies that did not side with them and charted out either independent paths or socialist paths. They forced these countries to give up their previous policies and adopt in their stead the policy of free market or laissez-faire. Compelled by the global capitalists, most of the countries the world over are pursuing the policy of laissez-faire prescribed by neoclassical economics. The objective of this policy is to facilitate the progress of capitalism and to minimize the size of the government. This is highly inimical to the have-nots in more ways than one. First, it seeks to remove all kinds of restrictions on the economic activities of the households and firms so that they are free to decide what to produce, where to invest, what to consume, import and so on. This gives the giant capitalists a free reign in running and managing the economy. Second, the policy of free market seeks to reinforce capitalism through repeal of all the laws that were enacted during the Cold War to safeguard the interest of the workers. It aims at bringing about deterioration of labour standards through the removal of job security and the right to form labour unions, dilution of restrictions on the number of hours of work per week, removal of floors to wage rates and so on. It also calls for reducing the size of the government to the minimum. Shrinkage of the government means reduction in the tax rates and government's expenditures. The free market policy recommends taxing the incomes of the rich at the minimum possible rates. With the shrinkage in

the size of the government, its ability to provide essential services such as education, health care, potable water and so on free of cost to the citizens and to spend on social security and invest in essential infrastructure such as flood control facilities, major irrigation and so on wanes drastically. In sum, neoclassical economics seeks to create an extremely unjust and uncivilized society, where giant capitalists exploit the workers to the extreme with the help of the state power. Following the disintegration of the Soviet Union, economics syllabuses in most of the countries have excluded Marxian economics, socialism and planning and include only neoclassical economics. To derive its extremely unjust and uncivilized policies in the garb of sophisticated and decent ones, neoclassical economics builds a world, which is far removed from reality. To keep the unreality of neoclassical economics hidden, historical studies of real economies in the past and present periods have also been taken out of the syllabuses. Students these days in most of the countries in the world study only neoclassical models and accept the world they portray as real, since they cannot compare it to the real world, whose true accounts are deliberately kept out of the syllabuses.

This makes it imperative to present and discuss neoclassical economics in its true light. It is essential to lay threadbare the unreality of the neoclassical assumptions and to explain why it is extremely unjust and uncivilized and why and how it seeks to rob the workers of whatever they have to improve the lot of the giant capitalists. This we do in Chap. 2. It is also essential to present Marxian economics and its vision and critique of capitalism and neoclassical economics. It is necessary to explain why Marxian economics contains important elements of truth. We have done this in Chap. 3. A famous economist, John Maynard Keynes, also shared Marx's vision that a capitalist system is inherently unstable and crisis-prone. However, unlike Marx, he supported capitalism and suggested measures by means of which a capitalist economy can be kept stable. The policies he suggested are called stabilization measures. In Chap. 4, we have discussed Keynesian economics and his stabilization measures. In Chap. 5, we have presented the current state of the capitalist world consisting of Japan, the US and Europe. We have shown there that the economic crises that occurred there following the collapse of the Soviet Union were deliberate creations of the giant or global capitalists. It was a clever strategy employed by the global capitalists to rob a part of the workers' savings and to secure the remaining part of the workers' savings for themselves at the minimum possible price. It was a strategy that the global capitalists formulated to completely ruin workers' bargaining strengths so

that the global capitalists could secure workers' labour at the minimum possible price and compete out the small and medium producers. Finally, in Chap. 6, we have discussed the economic performances of three socialist states, namely, the Soviet Union, Cuba and China. We have explained how they have taken care of the common man and why the Soviet Union failed and how the global capitalists are making the existence of China and Cuba difficult and perilous and forcing them to deviate from their chosen paths. Finally, in Chap. 7, we have summed up the findings and observations of the book as regards how a capitalist economy works and how it exploits workers. We have also suggested there a plausible strategy the workers can adopt within the framework of democracy to get out of capitalist exploitation.

With the adoption of the neoclassical policies, the world has become much more crisis-prone. Most of the advanced capitalist countries today are in the grip of a prolonged recession. Japan is in recession since 1992. The US and Europe are in recession since 2001 and 2008, respectively. The recession has spread to the rest of the world as well. Governments in recession-hit countries have failed to lift the economies out of recession. At the same time, the world has become much more unequal. See in this connection Stiglitz (2012) and Picketty (2014). Under these circumstances, a critical evaluation of neoclassical economics and capitalism and an assessment of Marxian economics and socialism as an alternative to neoclassical economics and capitalism, respectively, have become imperative.

Review Questions

1. How is a capitalist society defined?
2. What is the role of economics in a capitalist society?
3. What is the purpose of neoclassical economics?
4. What is the objective of Marxian economics?
5. How are socialist and communist societies defined?
6. Why is the coexistence of democracy and capitalism a puzzle?
7. Why does democracy become a farce under capitalism?
8. What do stabilization measures refer to? Who suggested them?

References

Hunt, E. K., & Lautzenheiser, M. (2014). *History of Economic Thought: A Critical Perspective* (3rd ed.). Delhi: PHI Learning Private Limited.

Picketty, T. (2014). *Capital in the Twenty-First Century*. Cambridge, MA: Belknap Press.

Stiglitz, J. E. (2012). *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W.W. Norton and Company.

CHAPTER 2

Neoclassical Economics and Capitalism

Abstract This chapter presents the core of neoclassical microeconomics starting with the theory of consumer behaviour and ending with welfare economics. This core of neoclassical microeconomics yields the result that, if allocation of resources is left to market forces, there will take place an optimal or efficient allocation of resources. This result constitutes the basis of the economic policies being followed by the capitalist countries including India today. This chapter develops a critique of this theory and explains why it favours the rich at the expense of the poor. It specifies what the goal of economic policies in a civilized society should be and provides an alternative definition of optimal allocation of resources.

Keywords Neoclassical microeconomics • Efficient allocation of resources • Economics of the rich

2.1 Introduction

Neoclassical economics vindicates capitalism. Neoclassical microeconomics, on one hand, argues that a capitalist economy, if left to itself, that is, without any interference on the part of the government, brings about efficient or optimal allocation of resources. We shall explain the meaning of efficient or optimal allocation of resources shortly. Neoclassical macroeconomics, on the other hand, argues that a capitalist economy has a mechanism that automatically brings about full employment of all the

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available productive resources within a reasonable period of time. This means that in a capitalist economy there is an automatic mechanism that makes sure that all the people who are willing to work find work and the productive capacities of all the production units (which are referred to as firms) are fully utilized within a reasonable period of time. This implies that the government need not worry about unemployment of workers or productive capacities of firms lying unutilized. Neoclassical economic says that if such problems arise, they will get resolved automatically within a reasonable period of time. Neoclassical macroeconomics even goes further. It states that if the abovementioned problems ever arise in a capitalist economy and the government undertakes policies to resolve them, it will either produce no effect or aggravate the problems instead of mitigating them. Thus, neoclassical macroeconomics suggests that the government should leave a capitalist economy to itself and should not interfere with its functioning. We shall not discuss neoclassical macroeconomics in any further detail here and focus instead on neoclassical microeconomics. We shall present that part of neoclassical microeconomics which constitutes the core and serves as the basis of the economic policies being pursued by most of the countries today. This part of neoclassical microeconomics consists of the theory of consumer behaviour, theory of the firm, theory of perfectly competitive markets and welfare economics. We shall discuss all these theories one by one. We shall start with the theory of consumer behaviour.

2.2 Theory of Consumer Behaviour

The objective of the theory of consumer behaviour is to explain how a consumer (an individual) with a given amount of income decides how much of each of the goods available in the market he will purchase. It is assumed that the prices of the different goods available in the market are given to him. To illustrate the theory of consumer behaviour, we shall assume that there are only two goods, X and Y, available in the market. Quantities of X and Y are denoted by x and y, respectively. The given prices of X and Y are denoted by P_x and P_y, respectively. The given income of the consumer is denoted by M. To explain how the consumer makes his choice, we have to introduce the consumer's budget equation and his tastes and preferences. We shall first discuss his budget equation.

2.2.1 *Budget Equation of the Consumer*

Given the consumer's income M and the prices of X and Y, the consumer can choose from all the different combinations of x and y the value of each of which at the given prices equals M. All the different combinations of x and y the consumer can choose from are, therefore, given by the equation

$$M = P_x x + P_y y \tag{2.1}$$

This equation is referred to as the budget equation of the consumer. We can rewrite this equation as

$$y = -\frac{P_x}{P_y} x + \frac{M}{P_y} \tag{2.2}$$

Equation (2.2) is clearly an equation of a straight line. Its vertical intercept is M/P_y, while its slope is $-(P_x/P_y)$. The negatively sloped BB line in Fig. 2.1 represents the budget Eq. (2.2) or (2.1). It is called the budget line. The slope of the budget line measures the amount of y that the consumer has to give up if he raises his purchase of X by one unit from any given point on the budget line. Let us explain. Consider a point, say A, on the budget line. If the consumer raises his purchase of x by one unit from that point, he has to spend an additional P_x amount of money. To secure the P_x amount of money, the consumer has to reduce his purchase of Y. Now, P_x amount of money can purchase (P_x/P_y) amount of Y, that is, the value of (P_x/P_y) amount of Y is P_x. Therefore, the consumer, if he has to

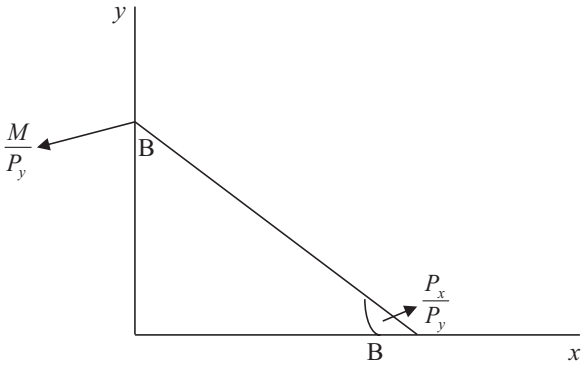

Fig. 2.1 The budget line

raise his purchase of X by one unit from A, has to give up (P_x/P_y) amount of Y. Hence, (P_x/P_y) is the absolute value of the slope of the budget line.

The meaning of the slope of the budget line will be clearer, if we derive it mathematically. To do this, we have to take total differential of the budget equation. We have discussed how we take total differential of a function or equation in Appendix in the section "How to Represent an Equation in a Diagram (Roughly)". Taking total differential of the budget equation treating the values of the variables (M, P_x and P_y) as fixed, we get

$$0 = P_x\,dx + P_y\,dy \tag{2.3}$$

Let us explain (2.3). For that, take a point on the budget line (x_0,y_0). Suppose x and y are changed from (x_0,y_0) by dx and dy, respectively. The resulting bundle $(x_0 + dx, y_0 + dy)$ will lie on the budget line if its value equals M. For that to happen, $P_x\,dx + P_y\,dy$ has to be equal to zero. It, therefore, follows that if from a given (x,y) on the budget line, the consumer changes x and y by dx and dy, respectively, such that (2.3) is satisfied, he will remain on his budget line. Equation (2.3), thus, gives us all the combinations of dx and dy that will keep the consumer on the same budget line. To get the slope of the budget line, we have to divide both sides of (2.3) by dx and, then, solve for (dy/dx). This gives us

$$(dy/dx) = -(P_x/P_y) \tag{2.4}$$

The meaning of the slope of the budget line is clear from (2.4): if from a given point on the budget line, x is raised by a very small amount dx, the slope of the budget line gives the amount by which y has to be lowered per unit increase in x to remain on the budget line.

Review Questions

Consider a consumer for whom M = Rs. 100, P_x = Rs. 2 and P_y = Re. 1.

1. Write down the equation of the budget line of the consumer.
2. Present it in a diagram.
3. Indicate the vertical intercept and the value of the slope of the budget line.
4. What is the meaning of the vertical intercept of the budget line?
5. Derive the slope of the budget line using calculus and, then, explain its meaning.

2.2.2 *Tastes and Preferences of the Consumer*

Theory of consumer behaviour tells us which point on the budget line the consumer will choose. For this purpose, the theory of consumer behaviour brings in the preference of the consumer over all the different possible combinations of x and y. This preference is captured by a set of indifference curves as shown in Fig. 2.2. An indifference curve gives all the combinations of x and y, each of which gives the same level of satisfaction to the consumer, that is, all the combinations of x and y on a given indifference curve are equivalent to the consumer. Consumer's preferences are assumed to satisfy certain properties. One assumption, called the axiom of non-saturation, states that a consumer prefers a larger bundle of goods to a smaller bundle. This implies that indifference curves are negatively sloped. Consider a point (x_0, y_0) on a given indifference curve I_0. Raise x from x_0 by one unit keeping y at y_0. You get a larger bundle, $(x_0 + 1, y_0)$. This bundle is preferred to the smaller one. Hence, it cannot lie on the indifference curve that contains (x_0,y_0). To get to the indifference curve I_0 that contains (x_0,y_0), with the quantity of x fixed at $x_0 + 1$, the quantity of y has to be reduced. Hence, an indifference curve is negatively sloped. Thus, when we move along an indifference curve, an increase in the quantity of one commodity is accompanied by a reduction in the quantity of the other commodity. The slope of an indifference curve at any given point, say, (x_0,y_0), is a measure of

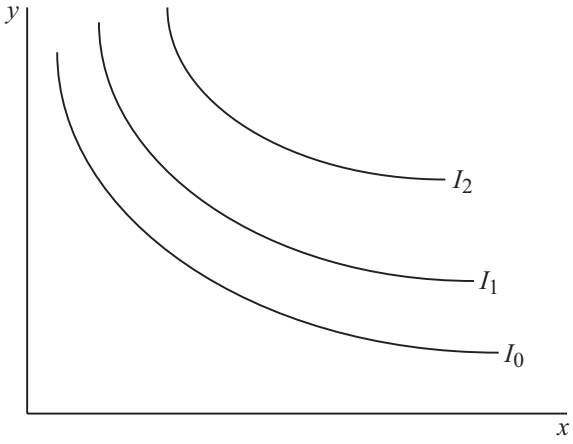

Fig. 2.2 Indifference curves

the following. If from (x_0,y_0), x is raised by a very small amount, then the slope of the indifference curve at (x_0, y_0) gives the amount by which y has to be reduced to remain on the same indifference curve per unit increase in x. The absolute value of the slope of an indifference curve is referred to as marginal rate of substitution of x for y ($\text{mrs}_{x,y}$ in short). Suppose ($\text{mrs}_{x,y}$) at (x_0,y_0) (written as $\text{mrs}_{x,y}(x_0,y_0)$) is 2. It means that, if x is raised from x_0 by a very small amount, then per unit increase in x the amount of y has to be reduced from y_0 by two units to remain on the same indifference curve.

The meaning of the slope of an indifference curve will be clearer if we derive it mathematically. Suppose $U = U(x,y)$ is the utility function of a consumer. U is called utility. It is a measure of the level of satisfaction the consumer derives from the consumption of x and y. If $U(x = 5, y = 5) = 10$, it means that the level of satisfaction that the consumer derives from the consumption of the commodity bundle ($x = 5$, $y = 5$) is 10. The utility function gives the level of satisfaction the consumer derives from every different (x,y). $U = xy$ is an example of a utility function. An indifference curve is the set of all combinations of x and y, each of which gives the same level of satisfaction. Therefore,

$$U_0 = U(x,y) \tag{2.5}$$

where U_0 is the equation of an indifference curve of the consumer. Equation (2.5) gives all the combinations of x and y, each of which gives the consumer the same given level of satisfaction U_0. To get the slope of the indifference curve at any given point on it, we have to take total differential of (2.5) treating U_0 as fixed. This yields the following equation:

$$0 = U_x(x,y)dx + U_y(x,y)dy \tag{2.6}$$

Let us explain (2.6). Let us start with $U_x(x,y)$. It is the partial derivative of the utility function with respect to x. It is called the marginal utility of x at any given (x,y) on the given indifference curve. It gives the additional utility the consumer derives per unit increase in x, when x is increased from the given (x,y) by a very small amount dx, with y remaining unchanged. $U_y(x,y)$ has similar interpretation. Explain it yourself. Thus, if from any given (x,y) on the given indifference curve, x is raised by dx, with y remaining unchanged, the increase in the consumer's utility level will be given by $U_x(x,y)dx$. Similar interpretation holds good for $U_y(x,y)dy$. Therefore, if from any given (x,y) on the given indifference curve, x and y are raised by dx and dy, respectively, the increase in the total utility of the

consumer will be given by the expression on the RHS of (2.6). If dx and dy satisfy (2.6), it means that dx and dy are such that the consumer remains on the same indifference curve as before. Equation (2.6) gives all the combinations of dx and dy that keep the consumer on the given indifference curve. Dividing both sides of (2.6) by dx and solving for (dy/dx), we get the value of the slope of the given indifference curve at the given (x,y). Thus,

$$(dy/dx) = -\left(U_x(x,y)/U_y(x,y)\right) \tag{2.7}$$

From (2.7) the meaning of the slope of an indifference curve at any of its given point becomes clear: if from any given (x,y) on a given indifference curve, x is raised by a very small amount, then the slope of the indifference curve at the given point gives the amount by which the consumer has to lower the amount of y per unit increase in x to remain on the given indifference curve.

The explanation of (2.7) is quite simple. When x is raised from a given (x,y) on a given indifference curve by a very small amount dx, then per unit increase in x, with y remaining unchanged, utility level increases by $U_x(x,y)$. To remain on the given indifference curve, with x fixed at this one unit higher value, the consumer has to lower y so that utility level falls by $U_x(x,y)$. If y is changed by dy, with x remaining unchanged, utility level changes by $U_y(x,y)dy$. To keep the consumer on the given indifference curve, dy must be such that $U_y(x,y)dy = -U_x(x,y)$. Therefore, y has to be lowered by $-(U_x(x,y)/U_y(x,y))$. This explains the slope.

Review Questions

Suppose the utility function of a consumer is given by $U = xy$.

1. Does the utility function given above satisfy the axiom of non-saturation?
2. Write down the equation of the indifference curve corresponding to the utility level 100.
3. Plot this indifference curve in a diagram. (We have discussed how you plot an equation in a diagram roughly in Appendix in the section "How to Represent an Equation in a Diagram (Roughly)").
4. Consider a point (10,10) on this indifference curve. Derive the slope of this indifference curve at this point. What is the value of $\text{mrs}_{x,y}(10,10)$? Explain it.

2.2.2.1 Marginal Rate of Substitution and Marginal Benefit

($mrs_{x,y}$) can also be interpreted as marginal benefit of x in terms of y. Let us explain. Again, consider (x_0,y_0). $mrs_{x,y}(x_0,y_0)$ measures the amount by which the consumer can reduce his consumption of y from y_0 remaining on the same indifference curve per unit increase in x, when x is raised from x_0 by a very small amount. This means a consumer having the commodity bundle (x_0,y_0) derives equal amounts of satisfaction from one additional amount of x and $mrs_{x,y}(x_0,y_0)$ amount of additional y. In other words, to the consumer under consideration, one additional unit of x is equivalent to $mrs_{x,y}(x_0,y_0)$ additional amount of y. Hence, $mrs_{x,y}(x_0,y_0)$ may be regarded as a measure of the marginal benefit of x (i.e. benefit from one additional unit of x) in terms of y at (x_0,y_0).

Review Question

Consider the utility function $U = xy$. Derive $mrs_{x,y}(10,10)$. Why is it called marginal benefit of x in terms of y at $(x = 10, y = 10)$?

2.2.2.2 A Higher Indifference Curve Corresponds to a Higher Level of Utility

The axiom of non-saturation has another implication. From a given commodity bundle on a given indifference curve, we can reach a higher indifference curve by raising the quantity of any one commodity keeping the quantity of the other commodity unchanged or by raising the quantities of both the commodities. Therefore, commodity bundles on a higher indifference curve are preferred to those on a lower indifference curve. Thus, a higher indifference curve corresponds to a greater level of satisfaction. Note that two indifference curves can never intersect, since no commodity bundle can yield two levels of satisfaction at the same time.

Review Question

1. Consider the utility function $U = xy$. Write down the equation of the indifference curve passing through the commodity bundle $(x = 5, y = 5)$. Derive the value of the $\text{mrs}_{x,y}(5,5)$. Why do we call it marginal benefit of x in terms of y? Consider a commodity bundle $(x = 6, y = 6) > (x = 5, y = 5)$. Does the individual derive a higher level of satisfaction from the larger bundle? Write down the equation of the indifference curve passing through the larger bundle. Will this indifference curve lie above the one passing through the smaller commodity bundle? Explain your answer.

2.2.2.3 Goods Consumed by Consumers Are Imperfect Substitutes

It is further assumed that commodities are imperfect substitutes. The goods x and y are imperfect substitutes if $\text{mrs}_{x,y}$ decreases along an indifference curve as the quantity of x increases (and that of y decreases) along an indifference curve. This means that, as the quantity of x increases along an indifference curve, the capacity of one additional unit of x to act as a substitute for y diminishes. If x and y were perfect substitutes, the capacity of one additional unit of x to act as a substitute for y would have remained unchanged whatever be the level of x along an indifference curve. Thus, when x and y are imperfect substitutes, the absolute value of the slope of an indifference curve diminishes as x increases (and y decreases) along an indifference curve. This means that, when x and y are imperfect substitutes, indifference curves are strictly convex to the origin, as shown in Fig. 2.2. (When x and y are perfect substitutes, indifference curves are straight lines).

Review Questions

1. Consider the utility function $U = xy$. Derive the values of the $\text{mrs}_{x,y}$ at $(x = 10, y = 10)$ and also at $(x = 20, y = 5)$. How do you account for the difference in the values of $\text{mrs}_{x,y}$ at these two points?
2. Why are indifference curves straight lines when goods are perfect substitutes?

2.2.3 *Consumer's Choice and Derivation of His Demand Functions*

The consumer's problem is to choose from the budget line one (x,y). Obviously, he will choose from the budget line that bundle, which gives him the highest level of satisfaction. To identify that bundle, we have superimposed on the budget line the indifference curves in Fig. 2.3. Clearly, the bundle that lies on the highest indifference curve attainable from the budget line is the most preferred bundle of the consumer. The indifference curve that is tangent to the budget line is surely the highest indifference curve the consumer can attain remaining on the budget line. In Fig. 2.3, the indifference curve I_0 is the highest indifference curve attainable from the budget line BB and the point of tangency of I_0 and BB is labelled A. A represents the commodity bundle (x_0,y_0). It is the optimum bundle, the bundle the consumer will choose. At (x_0,y_0), the slope of the budget line equals that of the indifference curve, that is, at (x_0,y_0), $(P_x/P_y) = \text{mrs}_{x,y}$. Consider the other points on the budget line. All these points lie below I_0. An indifference curve passes through every point. The indifference curves passing through the other points on the budget line lie below I_0 and they intersect the budget line. This means that at every other point on the budget line (P_x/P_y) differs from $\text{mrs}_{x,y}$. This yields the following proposition:

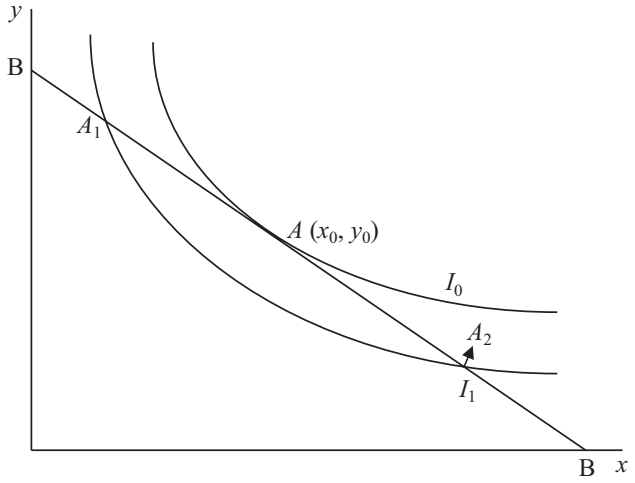

Fig. 2.3 Consumer's choice of the optimum commodity bundle

Proposition 1 On the budget line of the consumer there is just one commodity bundle (x,y) at which $(P_x/P_y) = \text{mrs}_{x,y}$. The consumer will choose that bundle. It will give the consumer the highest level of satisfaction.

Review Questions

Suppose the utility function of a consumer is given by $U = xy$. The budget line of the consumer is $100 = x + y$. (Here M = Rs. 100, P_x = Re. 1 and P_y = Re. 1).

1. Write down the equation of an indifference curve corresponding to this utility function.
2. Derive the value of the marginal rate of substitution.
3. Derive the value of the marginal rate of substitution at every point on the budget line.
4. Derive the value of the slope of the budget line.
5. What is the property of the optimum point on the budget line?
6. What is the relationship between the absolute value of the slope of the budget line and $\text{mrs}_{x,y}$ at other points on the budget line?

We shall now explain the intuition behind proposition 1, that is, we shall explain why at the optimum point $(P_x/P_y) = \text{mrs}_{x,y}$. Consider the points on the budget line to the left of point A. At every such point, an indifference curve intersects the budget line from above—see, for example, point A_1 in Fig. 2.3. This means that at every such point $(P_x/P_y) < \text{mrs}_{x,y}$. Similarly, at every point to the right of the optimum point on the budget line, an indifference curve intersects the budget line from below—see, for example, point A_2 in Fig. 2.3. At every such point $(P_x/P_y) > \text{mrs}_{x,y}$. Why does not the consumer choose a point from the budget line, which is to the left of the optimum point? At such a point $(P_x/P_y) < \text{mrs}_{x,y}$. If from such a point the consumer raises his purchase of x by a small amount dx, he will have to lower his purchase of y by $(P_x/P_y)dx$, but he will be able to sacrifice a larger $\text{mrs}_{x,y}dx$ amount of y remaining on the same indifference curve as before. Therefore, by raising the purchase of x by dx and lowering the purchase of y by $(P_x/P_y)dx$ from the given point, the consumer will be able to move over to a higher indifference curve remaining on his budget line. Similarly, from any point to the right of the optimum point on the budget line of the consumer, he will gain by purchasing less x and more y along his budget line. Explain why.

Review Question
Consider the previous problem. Consider the commodity bundle (40,60) on the budget line. Why is this bundle not chosen by the consumer? More precisely, will the consumer be able to move over to a higher indifference curve by raising x and lowering y from the given bundle?

2.2.3.1 Derivation of the Demand Functions of the Consumer

The position of the budget line depends upon (P_x/P_y) and (M/P_y)—see Fig. 2.1 and Eq. (2.2). At the optimum point on the budget line, $(P_x/P_y) = \text{mrs}_{x,y}$. Hence, given an individual's tastes and preferences summarized by his utility function represented by the indifference curves, his demand for x and y (i.e., the optimum quantities of x and y demanded by him) is a function of (P_x/P_y) and (M/P_y). If P_x, P_y and M change in the same proportion, that is, if the percentage changes in P_x, P_y and M are the same, (P_x/P_y) and (M/P_y) remain unchanged. Hence, the budget line and, therefore, the optimum (x,y) remain unaffected. This implies that an individual's demands for x and y are determined by (P_x/P_y) and (M/P_y), given his tastes and preferences captured by the indifference curves. (Exercise: suppose M, P_x and P_y double, that is, there takes place 100 per cent increases in M, P_x and P_y. How will it affect the consumer's choice, given the consumer's tastes and preferences?)

An increase in (M/P_y), given (P_x/P_y), leads to an upward parallel shift of the budget line—refer to Fig. 2.1 and Eq. (2.2). It will enable the individual to purchase more of both the goods. Normally, it will lead to an increase in the demand for both the goods. An increase in (P_x/P_y), given (M/P_y), makes the budget line steeper, with its vertical intercept remaining unaffected. The increase in (P_x/P_y) makes x dearer relative to y. This normally reduces the individual's demand for x and raises that of y. Thus, individual i's demand for x and y may be written as follows:

$$x_i^d = x_i^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_i}{P_y}}\right) \text{ and } y_i^d = y_i^d\left(\underset{+}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_i}{P_y}}\right) \tag{2.8}$$

Where x_i^d and y_i^d denote, respectively, the quantities of x and y demanded by individual i. M_i denotes the income of the ith individual. The sign below each of the arguments is the sign of the partial derivative of x_i^d or y_i^d with respect to the given argument. (Exercise: consider an individual A. His utility function and the budget constraint are given by $U = xy$ and $M_a = P_x x + P_y y$. Derive A's demand functions for x and y. Express A's demand for x and that for y in terms of (P_x/P_y) and (M/P_y).) (Hint: Use the equation $\text{mrs}_{x,y} = P_x/P_y$ and the equation of the budget line to derive demand for x and that for y.)

2.2.3.2 Aggregate Demand Functions

Aggregating the individuals' demand functions, we derive the aggregate demand functions for the economy as a whole. Let us illustrate with an example. Suppose there are two individuals A and B. Their demand functions for x are given by

$$x_A^d = x_A^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_A}{P_y}}\right) \quad \text{and} \quad x_B^d = x_B^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_B}{P_y}}\right) \tag{2.9}$$

Aggregate demand for x denoted by x^d is, therefore, given by

$$x^d = x_A^d + x_B^d = x_A^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_A}{P_y}}\right) + x_B^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_B}{P_y}}\right) \tag{2.10}$$

From (2.10) it follows that the aggregate demand for x is a function of $\frac{P_x}{P_y}, \frac{M_A}{P_y}$ and $\frac{M_B}{P_y}$. Hence, we can write aggregate demand for x as

$$x^d = x_A^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_A}{P_y}}\right) + x_B^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_B}{P_y}}\right) \equiv x^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_A}{P_y}}, \underset{+}{\frac{M_B}{P_y}}\right) \tag{2.11}$$

Similarly, derive aggregate demand for y. More generally, suppose there are N number of individuals in the economy. Aggregating over all individuals, we may write aggregate demands for x and y as

$$x^d = x^d\left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_1}{P_y}}, \underset{+}{\frac{M_2}{P_y}}, \ldots, \underset{+}{\frac{M_N}{P_y}}\right) \quad \text{and} \quad y^d = y^d\left(\underset{+}{\frac{P_x}{P_y}}, \underset{+}{\frac{M_1}{P_y}}, \underset{+}{\frac{M_2}{P_y}}, \ldots, \underset{+}{\frac{M_N}{P_y}}\right) \tag{2.12}$$

Exercise

1. Consider the budget equation $M = P_x x + P_y y$. Draw it in a diagram indicating its vertical intercept and slope. If M, P_x and P_y change in the same proportion, will the quantities demanded of x and y change, given the tastes and preferences of the consumer? Given your answer to the question given above, on what factors will demand for x and y of the consumer depend, given his tastes and preferences summarized by the utility function?
2. Consider two individuals A and B. Their utility functions are given by $U = xy$ and $U = \ln x + \ln y$, respectively. Their budget equations are given by $M_a = P_x x_a + P_y y_a$ and $M_b = P_x x_b + P_y y_b$, respectively. M_a, x_a and y_a denote respectively the income of A and quantities of x and y purchased by A. Similarly, M_b, x_b and y_b denote respectively the income of B and quantities of x and y purchased by B. Derive the demand functions of x and y of the two individuals and the aggregate demand functions of x and y. Note that the optimum quantities of x and y chosen by an individual are the quantities of x and y demanded by him.

2.3 Neoclassical Theory of the Firm

In any given short period (not longer than a year) of time, the stocks of labour and capital (capital is alternatively referred to as material means of production) available to the economy are given. Neoclassical macroeconomics states that a capitalist economy contains a mechanism that automatically brings about full utilization of the available stocks of productive resources in every period. This means that, according to neoclassical macroeconomics a capitalist economy automatically engenders full employment of the entire stocks of capital and labour available to the economy in any given period. We shall not prove this proposition here. For the present, we shall take it for granted. We, therefore, assume that the firms in a given period employ fully the entire stocks of labour and capital that are available in the economy to

produce different goods and services. For simplicity, we consider a single firm which uses a given stock of labour (denoted L_0) and a given stock of capital (denoted K_0) fully to produce two goods X and Y, quantities of which are denoted by x and y. The firm can produce many different combinations of x and y using K_0 and L_0. The locus of all these combinations of x and y is referred to as the transformation schedule or the production possibility schedule of the firm. The transformation schedule of the firm is shown by the curve TT in Fig. 2.4. Neoclassical theory of the firm assumes that it is downward sloping and strictly concave as shown in Fig. 2.4. The reasons are the following. Let us first explain why it is negatively sloped. Let us start from any given point (x_0,y_0) on TT. To raise production of x above x_0, more capital and labour have to be employed in the production of x. That can be done only by taking away capital and labour from production of y. Thus, to raise output of x beyond x_0, output of y has to lowered from y_0. Hence, TT is negatively sloped. The slope of TT at any given point (x_0,y_0) on it measures the amount by which y has to be reduced from y_0 per unit increase in x, when x is raised from x_0 by a very small amount. The absolute value of the slope of the TT schedule is referred to as the marginal rate of transformation of x for y. It is denoted by $\text{mrtr}_{x,y}$. If $\text{mrtr}_{x,y}$ at (x_0,y_0) denoted by $\text{mrtr}_{x,y}(x_0,y_0)$ is 2, it means that if x is raised from x_0 by a very small amount, then per unit increase in x output of y has to be reduced from y_0 by two units.

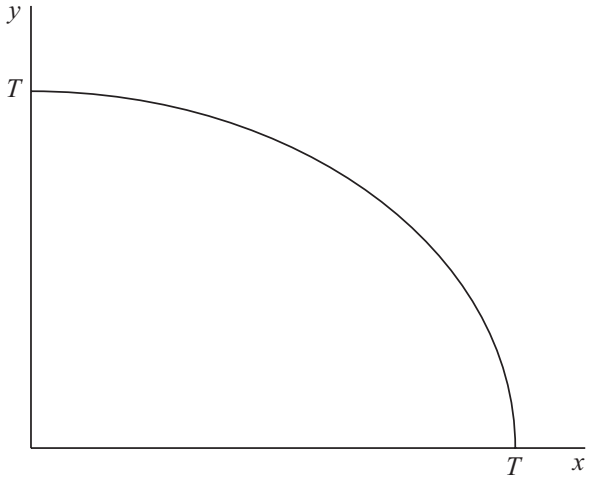

Fig. 2.4 Production possibility frontier or transformation schedule of a firm

Exercises

1. Why is a *TT* schedule negatively sloped?
2. Suppose the *TT* schedule (or the production possibility frontier (PPF)) of a firm is given by the equation $y = 100 - 2x^2$. What is the value of $\text{mrtr}_{x,y}$ at the point (5,50)? What is the meaning of this value?

The meaning of the slope of a production possibility frontier will be clear, if we derive its value mathematically. Suppose a production possibility frontier is given by the following equation:

$$Y = F(x); F(0) = y_0, F' < 0, F'' < 0, \text{where } F' = (\text{dF}/dx) \text{ and } F'' \text{ denotes the second derivative of } F \text{ with respect to } x \quad (2.13)$$

Taking total differential of (2.13), we get

$$dY = F'dx \quad (2.14)$$

Let us interpret (2.14). Let us start with F. F is defined at every point on *TT*. Consider any given (x,y) on *TT*. If from the given (x,y), x is raised by a very small amount dx, $F(x)$ gives the reduction in y that occurs per unit increase in x. Since the total increase in x is dx, $F\,dx$ measures the reduction in y that occurs when x is raised from the given (x,y) by dx. Dividing both sides of (2.10) by dx, we get the slope the *TT* schedule at any of its given point.

Exercise

Suppose *TT* of a firm is given by the equation: $y = y_0 - x^2$. Draw this *TT* schedule in a diagram. Derive its slope at any given point and explain its meaning. Suppose $y_0 = 400$. Derive the slope of the *TT* at the point ($x = 10$, $y = 300$) and explain its meaning.

It follows from the above that $\text{mrtr}_{x,y}$ gives the marginal cost of production of x (i.e., the cost of production of one additional unit of x) in terms of y.

Let us now explain why TT is assumed to be strictly concave. TT is strictly concave means that $\text{mrtr}_{x,y}$ increases as x increases and y decreases along TT. This assumption means that the larger the amount of x (and, therefore, the less the amount of y), the greater is the difficulty of producing more x by devoting more capital and labour to its production. Hence, to produce an additional unit of x, larger amounts of K and L have to be devoted to the production of x bringing about a larger cut in the amount of y.

The firm produces with given endowments of capital and labour. Suppose, for simplicity, that owners of the firm own the given endowments of labour and capital, that is, the owners of the firm themselves supply the labour. (Even if this assumption is replaced with more realistic ones, the results of our analysis will hold good). Given this assumption, the firm's profit is maximized when its revenue from the sale of x and y is maximized. Suppose prices of X and Y, denoted by P_x and P_y, are given to the firm. We shall give reasons for this assumption shortly. At these given prices, the firm has to choose such a combination of x and y that its profit or revenue is maximized. To identify the revenue or profit maximizing (x,y) on TT, we have to use the iso-revenue function given by the equation

$$P_x x + P_y y = R_0 \tag{2.15}$$

The above equation gives us all the combinations of x and y each of which yields a given revenue R_0. We rewrite the above equation as $y = -(P_x/P_y)x + (R_0/P_y)$. It is the equation of a straight line with the slope $-(P_x/P_y)$ and vertical intercept (R_0/P_y) in the (x,y) plane. We call this straight line an iso-revenue line corresponding to $R = R_0$, when R denotes total revenue. We shall get different iso-revenue lines corresponding to different values of R. These iso-revenue lines are plotted in Fig. 2.5. They have the same slope and a higher iso-revenue line corresponds to a higher value of R. Explain why a higher iso-revenue line corresponds to a higher level of R.

Exercises

1. Explain the values of the slope and vertical intercept of the iso-revenue line given by (2.15).
2. Write down the equations of the iso-revenue lines corresponding to R = Rs. 100 and R = Rs. 200, when P_x and P_y are Rs. 2 and Re. 1, respectively. Plot them in a diagram. Explain the values of the slopes and vertical intercepts of these lines.

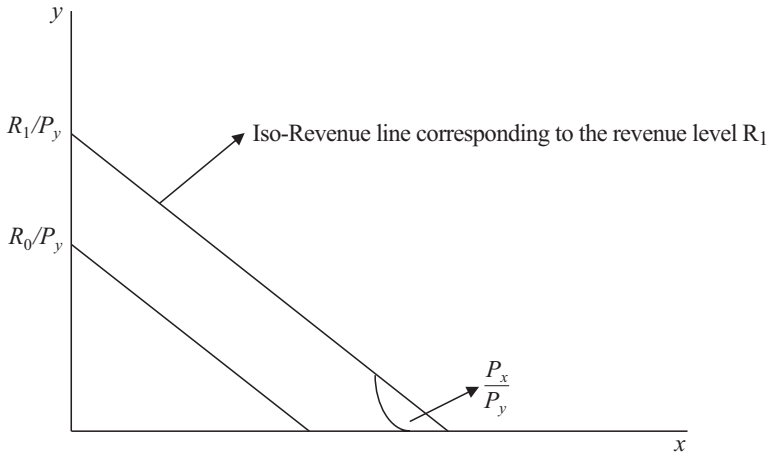

Fig. 2.5 Iso-revenue lines

To identify the profit-maximizing (x,y) on TT, we have superimposed the iso-revenue lines on TT in Fig. 2.6. Obviously, the highest iso-revenue line attainable from the TT schedule is the one which is tangent to it. This iso-revenue line is tangent to TT at (x_0,y_0). Therefore, (x_0,y_0) yields the highest revenue and profit to the firm. Every other point on TT lies on a lower iso-revenue line. At the profit-maximizing point on TT, the slope of an iso-revenue line is equal to that of the TT, that is, at the profit maximizing (x,y) on TT, $\text{mrtr}_{x,y} = (P_x/P_y)$. At every point to the left of the profit-maximizing point on TT, as should be clear from Fig. 2.6, $\text{mrtr}_{x,y} < (P_x/P_y)$, while at every point to the right of (x_0,y_0), $\text{mrtr}_{x,y} > (P_x/P_y)$. Let us now explain why profit is not maximized at points where $\text{mrtr}_{x,y}$ is different from (P_x/P_y). Consider a (x,y), say (x_1,y_1), to the left of the optimum (x,y). At such a pair (x,y), $\text{mrtr}_{x,y} < (P_x/P_y)$. If from the given (x,y), x is raised by a very small amount dx, firm's revenue and profit will increase by $P_x dx$. But, the increase in x by dx will reduce the output of y by $\text{mrtr}_{x,y}(x_1,y_1)dx$. This will reduce the firm's revenue and profit by $\text{mrtr}_{x,y}(x_1,y_1)dxP_y$. Thus, in the net firm's profit will change by $P_x dx - \text{mrtr}_{x,y}(x_1,y_1)dxP_y$. Since $\text{mrtr}_{x,y}(x_1,y_1) < (P_x/P_y)$, $P_x dx - \text{mrtr}_{x,y}(x_1,y_1)dxP_y > 0$. Thus, from any point to the left of TT, it will be possible for the firm to raise profit by raising the output of x and lowering that of y along TT until $\text{mrtr}_{x,y} = (P_x/P_y)$. Similarly, you should be able to prove yourself that from any point to the right of (x_0,y_0); it is profitable for the firm to lower x and raise y until the optimum point is reached.

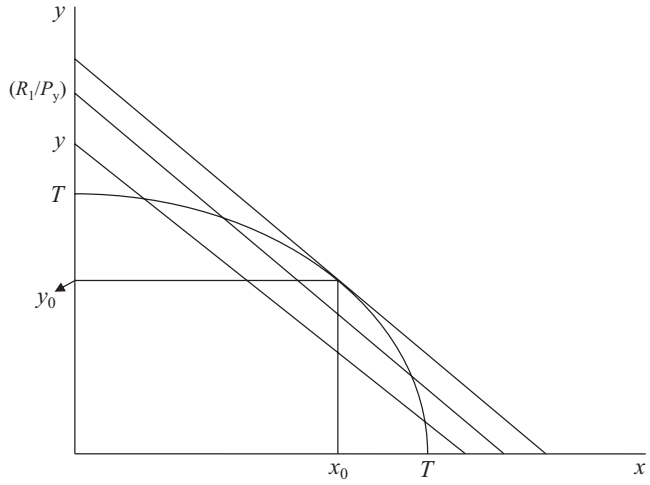

Fig. 2.6 The profit-maximizing (x,y)

Exercise
Why is the profit of the firm maximized, when its revenue is maximized?

From the above it follows that the quantities of x and y the firm will produce is determined by (P_x/P_y), given the technology and the given endowments of labour and capital, which determine the shape and position of TT. The higher the P_x relative to P_y, that is, the higher the value of (P_x/P_y), the larger will be the production of x and the less will be the production of y. The intuitive explanation runs as follows: start from an initial equilibrium situation where a firm produced from its TT the (x,y) at which $(P_x/P_y) = \text{mrtr}_{x,y}$. Now suppose (P_x/P_y) rises. Following the increase in (P_x/P_y), at the initial equilibrium (x,y), (P_x/P_y) exceeds $\text{mrtr}_{x,y}$. If the producer raises production of x by a very small amount dx, per unit increase in x, output of y will fall by $\text{mrtr}_{x,y}$. Hence, total revenue and profit of the firm will change by $P_x - \text{mrtr}_{x,y}P_y$ per unit increase in x. Since $\text{mrtr}_{x,y} < (P_x/P_y)$, $P_x - \text{mrtr}_{x,y}P_y > 0$. Hence, it will be profitable for the firm to produce more x and less y along the TT schedule until $\text{mrtr}_{x,y}$ becomes equal to (P_x/P_y).

Exercises

1. Explain why the highest iso-revenue line attainable from the *TT* is the one which is tangent to it.
2. Can two iso-revenue lines intersect?
3. Should one and only one iso-revenue line pass through any given point on the PPF?
4. How will producers change outputs of *x* and *y* if (P_x/P_y) falls? Explain your answer.

Supplies of *x* and *y* of a firm, as we have already noted, are functions of (P_x/P_y), given technology and the firm's endowments of capital and labour. Thus, supplies of *x* and *y* of an individual firm *i* are given by

$$x_i^s = x_i^s\left(\underset{+}{\frac{P_x}{P_y}}\right) \text{ and } y_i^s = y_i^s\left(\underset{-}{\frac{P_x}{P_y}}\right) \tag{2.16}$$

We can derive the aggregate supplies of *x* and *y* for the economy as a whole for the given period by summing up the supplies of all the individual firms producing *x* and *y* in the economy in the given period. If there are *N* number of firms in the economy in a given period, aggregate supplies of *x* and *y* of the economy in the given period denoted by X^s and Y^s, respectively, are given by

$$X^s = x_1^s\left(\underset{+}{\frac{P_x}{P_y}}\right) + x_2^s\left(\underset{+}{\frac{P_x}{P_y}}\right) + \cdots + x_N^s\left(\underset{+}{\frac{P_x}{P_y}}\right) \tag{2.17}$$

and

$$Y^s = y_1^s\left(\underset{-}{\frac{P_x}{P_y}}\right) + y_2^s\left(\underset{-}{\frac{P_x}{P_y}}\right) + \cdots + y_N^s\left(\underset{-}{\frac{P_x}{P_y}}\right) \tag{2.18}$$

From (2.17) and (2.18), it follows that aggregate supplies of x and y are functions only of (P_x/P_y) (given the technologies and endowments of labour and capital of firms). Therefore, we can write them as follows:

$$X^s = x_1^s\left(\frac{P_x}{P_y}\right)_{+} + x_2^s\left(\frac{P_x}{P_y}\right)_{+} + \cdots + x_N^s\left(\frac{P_x}{P_y}\right)_{+} \equiv X^s\left(\frac{P_x}{P_y}\right)_{+} \tag{2.19}$$

and

$$Y^s = y_1^s\left(\frac{P_x}{P_y}\right)_{-} + y_2^s\left(\frac{P_x}{P_y}\right)_{-} + \cdots + y_N^s\left(\frac{P_x}{P_y}\right)_{-} \equiv Y^s\left(\frac{P_x}{P_y}\right)_{-} \tag{2.20}$$

In the simple economy under consideration, there are just two markets: market for X and that for Y. Individuals purchase x and y from their respective markets, while firms supply x and y in their respective markets. Purchase and sale take place in these markets at prices at which planned demands for x and y and planned supplies of x and y are equal. These prices are referred to as equilibrium prices and the quantities of x and y purchased and sold at these equilibrium prices are referred to as equilibrium quantities of x and y. We shall now explain how these equilibrium prices and quantities are determined.

Exercises

1. Suppose the production possibility frontier of an individual firm is given by the equation $y = y_0 - x^2$. Derive the optimum outputs of x and y (which are also their supply functions) of the firm, when prices of X and Y are P_x and P_y, respectively. Suppose there are N number of firms each having the same production possibility frontier given by the equation $y = y_0 - x^2$. Derive the aggregate supply functions of X and Y.

2.4 Markets of X and Y and Determination of Equilibrium Quantities of X and Y

In the neoclassical theory, all the markets are assumed to be perfectly competitive. A perfectly competitive market is one where there are a large number of buyers and sellers so that no single buyer or no single seller can influence the market price. This assumption may be explained as follows. In a perfectly competitive market for a good, the price of the good is determined by the forces of demand for and supply of the good. In such a market, an individual buyer's demand is a negligible portion of the total market demand so that by raising or lowering his own demand, he cannot produce any impact on the total demand for the good. Therefore, he cannot affect the market price. Accordingly, he has to take the market price as given. This is true of an individual seller as well. The supply of a single seller is so small relative to the total supply in the market that he cannot influence the total market supply of the good, and, therefore, the market price of the good by changing his own supply of the good.

One important point in the present context is that the individuals own the firms. It is the individuals who own the capital and labour used by the firms. So, the total income of the firms accrues to the individuals. Thus, individuals' total income is $P_x X^s(P_x/P_y) + P_y Y^s(P_x/P_y)$. This income is distributed among the individuals. Suppose the share of the ith individual in the total income is a_i. Then,

$$M_i = a_i.\left[P_x X^s\left(\frac{P_x}{P_y}\right)_{+} + P_y Y^s\left(\frac{P_x}{P_y}\right)\right] \Rightarrow \frac{M_i}{P_y} = a_i.\left[\frac{P_x}{P_y} X^s\left(\frac{P_x}{P_y}\right)_{+} + Y^s\left(\frac{P_x}{P_y}\right)_{-}\right] = a_i \bar{Y}^s\left(\frac{P_x}{P_y}\right)_{+} \tag{2.21}$$

$$\text{where } \bar{Y}^s\left(\frac{P_x}{P_y}\right)_{+} \equiv \frac{P_x}{P_y} X^s\left(\frac{P_x}{P_y}\right)_{+} + Y^s\left(\frac{P_x}{P_y}\right)_{-} \tag{2.22}$$

Note that an increase in (P_x/P_y) exerts two opposite effects on (M_i/P_y). On the one hand, it raises the first term of the expression on the RHS of (2.22). On the other hand, it lowers the second. However, in the net it can be shown to be positive. To prove this, let us differentiate (2.21) with respect to P_x/P_y. It yields the following:

$$\frac{\partial \frac{M_i}{P_y}}{\partial p} = a_i \left[p \frac{\partial X^s}{\partial p} + x^s + \frac{\partial Y^s}{\partial p} \right], \text{where } p \equiv \frac{P_x}{P_y}, \tag{2.23}$$

In (2.23), X^s denotes aggregate supply of x.

Focus on the first and the third terms within third brackets on the RHS of (2.23). Following a rise in p by a very small amount, x rises and y falls along the TT by $\frac{\partial X^s}{\partial p}$ and $\frac{\partial Y^s}{\partial p}$, respectively, from the initial optimum (x,y) on TT corresponding to the initial p. The initial p, which is the coefficient of $\frac{\partial X^s}{\partial p}$, equals the $\text{mrtr}_{x,y}$ corresponding to the initial (x,y). The $\text{mrtr}_{x,y}$ corresponding to the initial (x,y) gives the reduction in y that takes place per unit increase in x, when x is raised from the initial optimum (x,y) by a very small amount. Therefore, when x rises from the initial optimum (x,y) by $\frac{\partial X^s}{\partial p}$, y goes down in absolute value by $p \frac{\partial X^s}{\partial p}$. Hence

$$p \frac{\partial X^s}{\partial p} = -\frac{\partial Y^s}{\partial p} \tag{2.24}$$

Putting (2.24) into (2.23), we get

$$\frac{\partial \frac{M_i}{P_y}}{\partial p} = a_i x^s > 0 \tag{2.25}$$

Incorporating (2.22) into (2.12), we rewrite the aggregate demand functions as

$$x^d = x^d \left(\underset{-}{\frac{P_x}{P_y}}, \underset{+}{a_1 \overline{Y}^S \left(\underset{+}{\frac{P_x}{P_y}} \right)}, \underset{+}{a_2 \overline{Y}^S \left(\frac{P_x}{P_y} \right)}, \ldots, \underset{+}{a_N \overline{Y}^S \left(\frac{P_x}{P_y} \right)} \right) \tag{2.26}$$

and

$$y^d = y^d\left(\underset{+}{\frac{P_x}{P_y}}, a_1\underset{+}{\overline{Y}^S}\left(\frac{P_x}{P_y}\right), a_2\underset{+}{\overline{Y}^S}\left(\frac{P_x}{P_y}\right), \ldots, a_N\underset{+}{\overline{Y}^S}\left(\frac{P_x}{P_y}\right)\right) \tag{2.27}$$

From (2.26), it follows that an increase in (P_x/P_y) exerts two opposite effects on x^d. On the one hand, it makes x dearer relative to y. It induces the individuals to substitute y for x reducing demand for x. On the other hand, it raises individuals' income in terms of y. This tends to raise demand for both x and y. We shall, however, assume, for simplicity, that the former effect dominates and x^d falls with an increase in (P_x/P_y). For analytical convenience we shall rewrite (2.26) as

$$x^d = x^{d0}\left(\underset{-}{p}\right) \tag{2.28}$$

For similar reasons, y^d is also assumed to be a decreasing function of (P_y/P_x) or an increasing function of p. We, therefore, rewrite (2.27) as

$$y^d = y^{d0}\left(\underset{+}{p}\right) \tag{2.29}$$

Markets for x and y are in equilibrium, when

$$x^{d0}\left(\underset{-}{p}\right) = X^s\left(\underset{+}{p}\right) \tag{2.30}$$

and

$$y^{d0}\left(\underset{+}{p}\right) = Y^s\left(\underset{-}{p}\right) \tag{2.31}$$

We shall now argue below that (2.30) and (2.31) are not both independent. This means that if either of the two equations is satisfied, the other is automatically satisfied. More precisely, it means that the p that satisfies either of the two equations automatically satisfies the other.

We know that the value of demand for x and y of every individual is equal to his income. Thus, the value of demand for x and y of the ith individual is equal to $P_y a_i \bar{Y}^s\left(p\right)$. Accordingly, the value of aggregate demand for x and y of all the individuals together should be equal to their aggregate income, that is, the following equation should hold:

$$P_x x^{d0}\left(\underset{-}{p}\right)+P_y y^{d0}\left(\underset{+}{p}\right)=P_x X^s\left(\underset{+}{p}\right)+P_y Y^s\left(\underset{+}{p}\right)$$
$$\Rightarrow P_x\left[x^{d0}\left(\underset{-}{p}\right)-X^s\left(\underset{+}{p}\right)\right]+P_y\left[y^{d0}\left(\underset{+}{p}\right)-Y^s\left(\underset{+}{p}\right)\right]=0 \tag{2.32}$$

Equation (2.32), which is the aggregate budget constraint, is referred to as the Walras' law. It states that the sum of the values of excess demands (excess demand is defined as excess of demand over supply) in the two markets is equal to zero. Therefore, if one market is in equilibrium, so must be the other. In other words, if either of (2.30) or (2.31) is satisfied, so must be the other. We shall, therefore, focus only on (2.30) and ignore (2.31). We can solve (2.30) to determine the equilibrium value of p.

Determination of p is shown in Fig. 2.7, where x^d and x^s schedules represent the LHS and RHS of (2.30), respectively. x^d and x^s schedules show respectively the quantities of x demanded and supplied at different values of p. The equilibrium value of p and the equilibrium levels of purchase and sale of x correspond to the point of intersection of these two schedules. If p is higher than its equilibrium value, there is excess supply (defined as excess of supply over demand given by $(X^s - x^d) > 0$) in the x-market and, therefore, as follows from (2.32), an excess demand in the y-market given by $(y^d - Y^s) > 0$. As producers in the x-market fail to sell at the prevailing prices as much as they want to, they will offer their supplies at lower prices. Hence, P_x will begin to fall. On the other hand, in the y-market, there is excess demand for y, that is, buyers are unable to purchase as much as they want to at the initial set of prices. Hence, they will offer higher prices to the producers to get more y. P_y will, therefore, begin to rise. The decline in P_x, the rise in P_y and, therefore, the fall in p will continue until x and y markets come to equilibrium, with demand and supply equal in both the markets. The equilibrium p is labeled p_0 in Fig. 2.7. Putting this equilibrium value of p either in the aggregate demand function of X (*aggregate demand function of* Y) or in the aggregate supply function of X (*aggregate supply function of* Y), we get the equilibrium value of x (y). This is how, according to the neoclassical micro economic theory, prices and outputs of different goods and services are determined in a market economy.

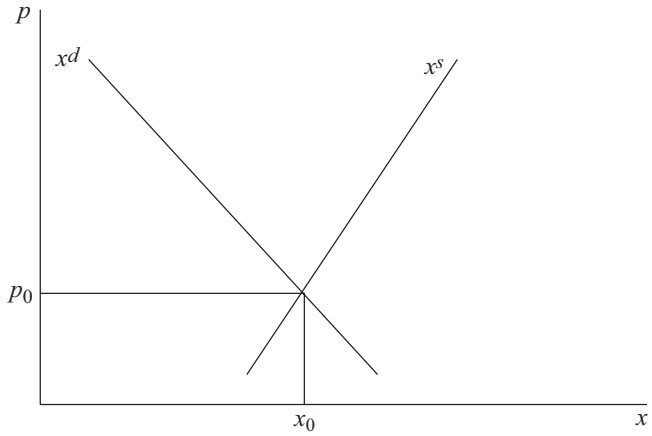

Fig. 2.7 Determination of prices and outputs in a capitalist economy

Exercises

1. Consider an economy in a given period of time. Suppose there were N number of firms. Each of these firms produced two goods x and y using the production possibility frontier $y = y_0 - x^2$. Each of these firms sold x and y in the market at prices P_x and P_y, which were given to each of them. Derive the aggregate supply functions of x and y. Again, suppose there were M number of individuals. Each of them consumed only two goods x and y and had the utility function $U = xy$. They received all the revenue earned by the firms as profit and wage. Each of them received equal amount of income. They spent their entire income purchasing x and y from the market at given prices P_x and P_y. Derive the aggregate demand functions of x and y. Derive the equilibrium value of (P_x/P_y) and the equilibrium values of x and y.

2.5 Welfare Economics: A Capitalist Economy Establishes Efficient Allocation of Resources

Neoclassical microeconomics does not end here. It goes further. It states that the equilibrium that is established in a capitalist economy is optimal or efficient. More precisely, it states that the allocation of productive

resources (i.e., the allocation of the available stocks of capital and labour) to the production of different goods and services and the distribution of the produced goods and services among individuals that take place in equilibrium in a capitalist economy is efficient or optimal. We shall now explain how this proposition is established. For this purpose, we have to first define what neoclassical theory means by efficient allocation of resources. Neoclassical theory states that allocation of productive resources over production of different goods and services and the distribution of the produced goods and services among individuals are efficient or optimal, if by changing the allocation, that is, by producing more or less of some goods and services and/or by changing the distribution of the produced goods and services among individuals it is not possible to make at least one individual better off without making anyone else worse off. Neoclassical economics proceeds further. It specifies the conditions that have to be fulfilled for the resource allocation to be optimal. It states that the resource allocation in a society is optimal when production of goods and services is allocated among firms in such a manner that mrtr between any two goods is the same for every firm, the distribution of the produced goods and services among the individuals is such that the marginal rate of substitution between any two goods is the same for every individual and, finally, the common mrs between any two goods is equal to the common mrtr between the two given goods.

To illustrate the conditions for optimal allocation of resources specified above, we shall take the case of an economy where only two goods, X and Y, are produced. Consider a scenario where a given (x,y), (x_0,y_0), has been produced by the producers. Suppose firms have produced (x_0,y_0) in such a manner that $\text{mrtr}_{x,y}$ is the same for all the firms. Let us denote this $\text{mrtr}_{x,y}$ by $\text{mrtr}_{x,y}(x_0,y_0)$. Recall that $\text{mrtr}_{x,y}$ is the marginal cost of production of X in terms of Y. Suppose that the given (x_0,y_0) is distributed among the individuals in such a manner that $\text{mrs}_{x,y}$ is the same for every individual. We denote this common $\text{mrs}_{x,y}$ by $\text{mrs}_{x,y}(x_0,y_0)$. Recall that $\text{mrs}_{x,y}$ measures the marginal benefit of X in terms of Y. Suppose $\text{mrs}_{x,y}(x_0,y_0) > \text{mrtr}_{x,y}(x_0,y_0)$. We shall show that in this case resource allocation is not optimal or efficient in the neoclassical sense. In this scenario, if a firm raises its output of X by dx, it will have to lower its output of Y by $\text{mrtr}_{x,y}(x_0,y_0)dx$. If this dx amount of X is given to any individual, $\text{mrs}_{x,y}(x_0,y_0)dx$ amount of Y can be taken away from him keeping him on the same indifference curve as before. However, consumption of y of the

individual need be lowered only by $\text{mrtr}_{x,y}(x_0,y_0)dx < \text{mrs}_{x,y}(x_0,y_0)dx$. Hence, he will be better off. Utility levels of all other individuals remain the same as before. The initial allocation of the available stocks of capital and labour between the production of x and that of y is inefficient, since by changing the allocation it is possible to make at least one individual better off without making others worse off.

Similarly, consider the opposite case where the firms have produced a given (x,y), (x_1,y_1), in such a manner that $\text{mrtr}_{x,y}$ is the same for every firm. We denote this $\text{mrtr}_{x,y}$ by $\text{mrtr}_{x,y}(x_1,y_1)$. Also suppose that (x_1,y_1) has been distributed among individuals in such a manner that $\text{mrs}_{x,y}$ is the same for every individual. We denote this $\text{mrs}_{x,y}$ by $\text{mrs}_{x,y}(x_1,y_1)$. Suppose $\text{mrs}_{x,y}(x_1,y_1) < \text{mrtr}_{x,y}(x_1,y_1)$. In this case, if a firm reduces its output of x by dx, it can raise its output of y by $\text{mrtr}_{x,y}(x_1,y_1)dx$. However, if an individual's consumption of x is lowered by dx and he is given an additional amount of y equal to $\text{mrtr}_{x,y}(x_1,y_1)dx > \text{mrs}_{x,y}(x_1,y_1)dx$, he will be more than compensated for. He will move over to a higher indifference curve. Hence, he will be better off, while others' consumption and utility levels remain unaffected. In this case, therefore, by producing less x and more y, at least one individual can be made better off without making others worse off. If $\text{mrtr}_{x,y}(x_1,y_1)$ were equal to $\text{mrs}_{x,y}(x_1,y_1)$, the resource allocation would have been optimal. In this case by raising the output of either x or y and reducing the output of the other good, it will not be possible to make anyone better off without making someone else worse off. (This you check yourself).

Let us now focus on the allocation of resources that takes place in equilibrium in a capitalist economy: the equilibrium that we described above. In such an equilibrium, a unique p prevails. At the equilibrium p, demand for X and supply of X are equal. This is true of the good Y also. In equilibrium, every firm produces x and y in such quantities that $\text{mrtr}_{x,y}$ equals the equilibrium p. Again, every consumer buys x and y in such quantities that $\text{mrs}_{x,y}$ equals p. Thus, in equilibrium, allocation of the available stocks of capital and labour between the production of x and y and the distribution of the produced (x,y) among the individuals is such that $\text{mrtr}_{x,y}$ is the same for every firm and $\text{mrs}_{x,y}$ is the same for every individual and the common $\text{mrtr}_{x,y}$ is equal to the common $\text{mrs}_{x,y}$. Thus, the allocation of resources that takes place in equilibrium is optimal.

Exercises

1. How does neoclassical economics define optimal allocation of resources?
2. Suppose in an economy in a given period the (x,y) that has been produced is $(100,100)$. It is produced by firms in such a manner that $\text{mrtr}_{x,y}$ is the same for every firm and it is equal to unity. Again, the produced (x,y) is distributed among the individuals in such a manner that $\text{mrs}_{x,y}$ is the same for every one of them and this common $\text{mrs}_{x,y}$ is $(1/2)$. Explain why the resource allocation is not optimum in the given economy in the given period.
3. Consider a given (x,y), $(100,100)$. Suppose it is distributed between two individuals, A and B, in such a manner that $\text{mrs}_{x,y}$ of A is 0.5, while $\text{mrs}_{x,y}$ of B is 1. Explain why the distribution of the given (x,y) between A and B is not optimal. Distribution of a given (x,y) among individuals is not optimal if by changing the distribution of the given (x,y) among the individuals it is possible to make at least one individual better off without making anyone else worse off.
4. Consider a given (x,y), $(100,100)$. Suppose it has been produced by two firms, Firm 1 and Firm 2 in such a manner that $\text{mrtr}_{x,y}$ of Firm 1 is 1, while $\text{mrtr}_{x,y}$ of Firm 2 is 2. Explain why the allocation of production of the given (x,y) among the firms is not optimal. Allocation of production of a given (x,y) among firms is not optimal if by changing the allocation, that is, by making one firm produce more x and less y and another firm produce less x and more y, it is possible to raise the output of one good without reducing the output of the other good.
5. Consider an economy in a given period of time. Suppose there were N number of firms. Each of these firms produced two goods x and y using the production possibility frontier $y = y_0 - x^2$. Each of these firms sold x and y in the market at prices P_x and P_y, which were given to each of them. Derive the aggregate supply functions of x and y. Again, suppose there were M number of individuals. Each of them consumed only two goods x and y and had the utility function $U = xy$. They received all the revenue earned by the firms as profit and wage. Each of them received equal amount of income. They spent their entire income purchasing x and y from the market at given prices P_x and P_y. Derive the aggregate demand functions of x and y. Derive the equilibrium value of (P_x/P_y) and the equilibrium quantities of x and y. Is this equilibrium efficient? Explain.

2.6 Critique of Neoclassical Microeconomics

The theory of consumer behaviour, the theory of the firm and the theory of perfectly competitive markets are the three basic theories that are instrumental in yielding the result that a capitalist economy establishes an efficient allocation of resources. In what follows, we shall develop a critique of each of these theories. More precisely, we shall argue that the objective of neoclassical microeconomics is not to explain reality but to serve the interest of the rich.

2.6.1 Theory of Consumer Behaviour

First, focus on the theory of consumer behaviour. What does it want to do? It wants to do something very simple. It seeks to explain how people decide how much of different goods to purchase. Is it a mystery? Ask any consumer (including yourself) and he will give you a very simple answer to that; an answer that everyone will understand and agree with. But neoclassical economics considers it a mystery and constructs a very elaborate and complicated theory to explain it. In the process, it derives a result that has nothing to do with reality. It states that a consumer chooses different goods in such a manner that marginal rates of substitution of every good for every other good (i.e., the marginal benefits of every good in terms of every other good) are equal to their respective price ratios. (We demonstrated this in the two-good case earlier). If you ask any consumer whether he makes his choice the way the theory of consumer behaviour says he does, he will emphatically say no. No consumer is aware of a concept such as the marginal rate of substitution of one commodity for another and cares to equate it to the price ratio while purchasing goods. When a consumer, for example, buys mango and pumpkin, he definitely does not compare the marginal rate of substitution between the two and their price ratio. A consumer, as you can all vouch for, does not behave that way. (You can carry out this experiment. Suppose you find that a sister of yours, who is not familiar with economics, has bought trousers and shoes from the market. Ask her what her marginal rate of substitution between the two goods is. If she can comprehend what you are saying and succeed in putting a value to it, compare it to the price ratio). Why, then, does the theory of consumer behaviour seek to thrust on us a theory of behaviour, which we, as consumers, find strange? The answer is that it helps derive the result

that a market economy on its own brings about efficient utilization of productive resources. More precisely, the result that the price ratio of any two goods is equal to the marginal rate of substitution of one good for the other or the marginal benefit of one good in terms of the other is used by the neoclassical economics to demonstrate that a market economy brings about optimal allocation of resources.

Exercises

1. Marginal rate of substitution of x for y may also be called marginal benefit of x in terms of y. Explain why.
2. Suppose a consumer consumes N goods: $x_1, x_2, \ldots, x_N$. Suppose at a given set of prices $P_1, P_2, \ldots, P_N$, he has chosen the bundle $(x_{10}, \ldots, x_{N0})$. Explain why price ratio of any two goods P_2/P_3, say, cannot differ from $mrs_{2,3}$, if the consumer behaves in accordance with the neoclassical theory of consumer behaviour.
3. Do you find the neoclassical theory of consumer behaviour convincing?

2.6.2 Theory of The Firm

Theory of the firm presented above yields the final result that the price ratio of any two goods in perfectly competitive markets equals the marginal rate of transformation of one good for another. Marginal rate of transformation of x for y, for example, is defined as the amount of y that a firm, given its stocks of available resources/factors of production and technology, has to give up to produce one additional unit of x. We can, therefore, interpret the marginal rate of transformation of x for y as the marginal cost of production of x in terms of y. Thus, we get another interpretation of the price ratios in perfectly competitive markets. Each of these price ratios gives the marginal cost of production of one good in terms of another. The world assumed by the theory of the firm is far removed from the real world. In the real world, firms normally do not operate on their production possibility frontiers. Normally, in a capitalist economy there exist unutilized productive capacity and unemployed labour so that an increase in the output of one commodity need not reduce the output of any other commodity. Thus, in normal circumstances in a capitalist economy, marginal cost of production of one commodity in terms of another

is zero, while ratio of prices of any two goods is always positive. Therefore, in normal circumstances in a capitalist economy, price of one given good in terms of another is not related in any way to the marginal cost of production of the given good in terms of the other good.

Exercises

1. Consider an economy where firms produce N number of goods: $x_1, x_2,\ldots, x_N$. Firms are price takers in the markets of all the produced goods. This means that every firm takes the market prices of all the produced goods as given. It is not within the power of an individual firm to influence the prices prevailing in the market. Suppose in equilibrium firms have produced the N number of different goods in quantities given by $(x_{10}, x_{20},\ldots, x_{N0})$. The equilibrium prices of these N goods, $x_1, x_2,\ldots, x_N$, are $P_1, P_2,\ldots, P_N$, respectively. Consider any two goods, x_3 and x_6, say. Argue that $\text{mrtr}_{3,6}$ corresponding to the equilibrium quantities cannot differ from (P_3/P_6), if firms behave in accordance with the neoclassical theory of the firm.
2. Explain why $\text{mrtr}_{3,6}$ is unlikely to be equal to (P_3/P_6) in reality.
3. Suppose in an economy N number of goods, $x_1, x_2,\ldots, x_N$, have been produced in quantities $x_{10}, x_{20},\ldots, x_{N0.}$ Consider any two goods x_4 and x_6. Suppose x_{40} and x_{60} have been distributed among the individuals in such a manner that $\text{mb}_{4,6}$ is the same for every one of them and it is equal to 2. Also suppose production of x_{40} and x_{60} has been distributed among firms in such a manner that $\text{mc}_{4,6}$ is the same for every firm and it is equal to 3. Do you consider the outputs of x_4 and x_6 to be optimal from the point of view of the society, if you subscribe to the neoclassical theory? Explain.
4. Suppose an economy in a given period has produced the commodity bundle $(x_{10}, x_{20},\ldots, x_{N0})$. Suppose the distribution of a part of the outputs of x_5 and x_7 between any two individuals A and B is such that $\text{mb}_{5,7}$ of A is 1, while $\text{mb}_{5,7}$ of B is 3. Is this distribution optimal from the point of view of the society, if one goes by the neoclassical theory? Explain.

2.6.3 Theory of Perfectly Competitive Markets

The problem with the neoclassical definition of optimal allocation of resources is that it is not operational. Neither marginal benefit of one good in terms of another nor marginal cost of production of one good in terms of another, given the way they have been defined by neoclassical economics, is observable or measurable. Hence, it is not possible to assess whether the resource allocation in a society is optimum or not on the basis of the criteria set by the neoclassical microeconomics. In fact, the criteria are completely unrealistic to say the least. If you ask a person about his marginal rate of substitution of cauliflower for trouser, he will have no clue as to what you are saying.

Neoclassical microeconomics gets around this problem by dint of another absurd and unrealistic assumption. It assumes that all markets are perfectly competitive. So, all prices are given to all consumers and producers. In such a scenario, as the theory of consumer behaviour tells us, every consumer makes his choice in such a way that the marginal rate of substitution of every good for every other good is equal to the corresponding price ratio. Again, the firms produce different goods in such a manner that the marginal rate of transformation of every good for every other good equals the corresponding price ratio. This drives the result that, when all markets are perfectly competitive, resource allocation is optimal. The notion of perfect competition is as unrealistic and absurd as the neoclassical theories of firms and consumers. In every country, every good is produced by just a few major firms. Moreover, most of the major firms in all the sectors are owned by a few big business tycoons. Thus, a few big business tycoons, national and global, have enormous power over prices and production. Obviously, the assumption of perfect competition flies in the face of such a scenario. The hypothesis that price ratios are equal to the corresponding marginal benefits and marginal costs is not empirically testable, since marginal benefit and marginal cost, as defined above, are not observable.

From the above it is clear that the neoclassical conditions for optimal allocation of resources are neither meaningful nor operational. The neoclassical proposition that a market economy, left to itself, establishes optimal allocation of resources is also baseless.

Exercise
Why is neoclassical definition of optimal allocation of resources baseless? Explain.

2.7 Motivation for the Neoclassical Definition of Optimal Allocation of Resources

The neoclassical conditions for optimal allocation of resources, as we have argued above, are based on unrealistic, absurd and non-existent concepts. The result that perfectly competitive markets establish an efficient allocation of resources is of no importance, as such markets do not exist and consumers and firms do not behave the way the neoclassical theory says they do. Based on this baseless result, almost all the countries the world over are dismantling all controls over economic activities such as production, consumption, pricing of commodities by producers and so on and leaving the allocation of resources to market forces. What is the motivation? The motivation is quite clear. If the allocation of resources is left to market forces, people with market power/purchasing power/financial might will corner the bulk of the resources and live in unimaginable luxury, while the poor will not be able to meet even the basic necessities of life. Take, for example, the case of India. In India, 6 per cent of the employed people were engaged in the organized sector in 2004–2005, while its share in NDP (net domestic product) in 2003–2004 was 43.3 per cent (see Tables 2.1 and 2.4). This means that roughly in 2004–2005 only 6 per cent of Indians had in their command 43.3 per cent of NDP, while the rest of the population had to make do with the remaining part of NDP. NDP is a measure of aggregate production or aggregate income of the country. Clearly, in 2004–2005, the inequality in the distribution of income was extreme. The organized sector comprises of non-agricultural production units that employ ten workers or more without power and also those non-agricultural units that employ five or more workers with power. The unorganized sector comprises all other non-agricultural production units, which are smaller than the ones belonging to the organized sector and agriculture. Thus, the organized sector contains all the big production units. How did the inequality change in India over time? We get some clues regarding that from Tables 2.2, 2.3 and 2.4. We find from Tables 2.2

Table 2.1 Sectoral shares in work force (2004–2005)

	Organized sector	*Unorganized sector*
Percentage of workforce employed 2004–2005	6	94

Source: NSSO 61st round

Table 2.2 Employment in the organized sector (in million)

Year	*Growth rate of GDP at constant (2004–2005) prices*	*Number of workers employed*
1994–1995	6.4	27.53
2000–2001	5.3	27.79
2001–2002	5.5	27.20
2003–2004	8.1	26.45
2004–2005	7.0	26.46
2005–2006	9.5	26.96
2006–2007	9.6	27.24
2007–2008	9.6	27.55
2008–2009	6.7	28.18
2009–2010	8.4	29.00
2010–2011	8.4	29
2011–2012	5.3	29.65

Source: RBI

Table 2.3 Labour force, work force and unemployment (in million)

	1993–1994	*1999–2000*	*2004–2005*	*1999–2000 to 2004–2005 point-to-point annualized growth rate*
Labour force	387.94	406.05	469.06	2.93
Work force	374.45	397.00	457.82	2.89
Number of unemployed	7.49	9.05	17.24	

Source: NSSO and Report of the Task Force on Employment Opportunities (planning commission)

Table 2.4 Contributions of the organized sector and the unorganized sector to the value added of major sectors of production and NDP

Industry	*1993–1994*		*2003–2004*	
	Organized	*Unorganized*	*Organized*	*Unorganized*
Agriculture, forestry and fishing	3.5	96.5	4.1	95.9
Mining, manufacturing	64.2	35.8	60.5	39.5
Electricity, construction and services	47.1	58.9	53.1	46.9
NDP	36.8	63.2	43.3	56.7

Source: CSO (2005): National Accounts Statistics 2005, Government of India

and 2.3 that employment in the organized sector had been stagnant during 1994–1995 to 2011–2012, while the labour force grew annually at the rate of 2.93 per cent during 1993–1994 to 2003–2004. Therefore, the percentage of Indians deriving their income from the organized sector dwindled fast during the period under consideration. We can also perhaps safely conclude that the trend is continuing even now. Table 2.4 shows that the share of the organized sector in NDP increased from 36.8 per cent in 1993–1994 to 43.3 per cent in 2003–2004. There is no reason to believe that the trend has been reversed since 2003–2004. Therefore, one can conclude that in India a very small and dwindling set of people have in their command the major part of NDP, and their share in NDP is growing over time. Thus, the major part of India's NDP caters to the needs of a miniscule section of people and their command over NDP is growing over time. Obviously, in India, most of the people do not have adequate access even to the basic necessities of life.

Exercise
Suppose in a country 2 per cent of the population earned 70 per cent of NDP. What kind of goods will the 70 per cent of NDP comprise of?

2.8 The Correct Definition of Optimal Allocation of Resources

It is obviously meaningless to define optimal allocation of resources without any regard to distribution of income. In fact, they are one and the same. Ideally, every member of a society should have equal access to its resources. As it is hard to achieve, everyone should agree that optimal allocation of resources should be defined as a state in which everyone has adequate access to quality food, clothing and shelter and unlimited access to quality health care services and education.

Achieving this goal in the minimum possible time should be the objective of economic policies in every country. This definition of optimal allocation of resources is just, observable and operational. In what follows, we shall examine what it takes to achieve this goal.

Consider an economy in a given period of time. In the given period, the stocks of capital and labour that the country can use for producing differ-

ent goods and services are given. Let us divide all the different goods and services that the country produces into two categories, namely, essential goods and non-essential goods. The goods that satisfy the basic necessities of life and all the goods that are required for their production belong to the category of essential goods, while the non-basic or luxury consumption goods constitute the category of non-essential goods.

We shall denote the outputs of essential and non-essential goods by x and y, respectively. Suppose the transformation schedule TT in Fig. 2.8 gives all the combinations of x and y that can be produced with the given stocks of capital and labour available to the economy in the given period using the available technology. Suppose, to provide every member of the population with the desired quantities of the basic necessities, the society has to produce x_0 amount of x.

However, in a capitalist society where a miniscule section of large capitalists have in their command the major part of the aggregate income, most of the available stocks of capital and labour will be utilized to cater to their needs. Hence, instead of (x_0,y_0), a substantially smaller x and a substantially larger y, (x_1,y_1), will be produced (see Fig. 2.8).

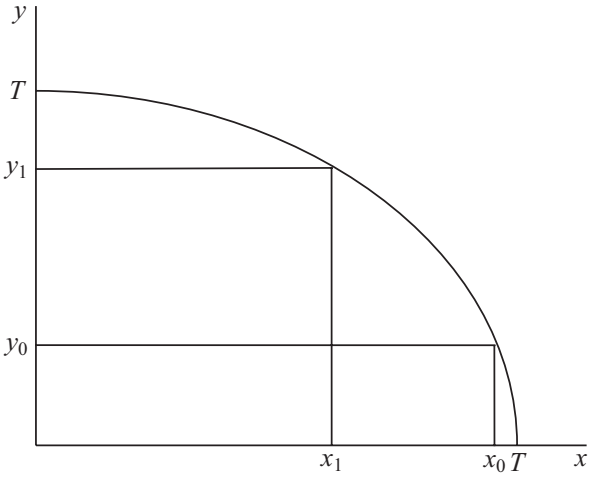

Fig. 2.8 Free market allocation versus optimum allocation

To achieve the desired allocation of resources, the government has to either tax away the surplus income of the rich or tax the purchase and sale of non-essential goods at sufficiently high rates and transfer the tax revenues to the poor. Alternatively, it can restrict the production of non-essential goods by imposing controls over production of such goods and utilize all the resources that are not employed in the production of non-essential goods for the production of the essential goods by directly producing essential goods and distribute the essential goods produced among the poor in a desired manner at appropriate prices so that everyone of them gets the essential goods in adequate quantities. As we have argued in Chap. 1, political parties in capitalist societies are run by the capitalists, who enjoy and exercise state power. In such a scenario, the policies needed for achieving the above-mentioned desired allocation of resources cannot be implemented. Hence, in Chap. 7 we have suggested a strategy by means of which the masses can usurp state power within the framework of democracy. Societies can be made civilized and poverty and misery of the masses can be done away with only when masses are able to exercise state power.

2.9 Conclusion

The issue of allocation of resources cannot be dissociated from that of distribution of income and assets. Ideally, individuals living in a country should have equal access to the country's resources. This may be a difficult goal to achieve. However, every civilized person should agree that allocation of resources is desirable when it is such that every individual has adequate access to quality food, clothing and shelter and unlimited access to quality education and health care. The objective of every country should be to ensure this in minimum possible time.

Neoclassical microeconomics provides a definition of optimal allocation of resources independent of income distribution on the basis of concepts, which are unobservable and non-existent. It also argues that a capitalist economy, left to itself, establishes optimal allocation of resources defined in the neoclassical sense, when all markets are perfectly competitive. Perfectly competitive markets, just like the other neoclassical concepts, do not exist in reality.

Despite the unreality of the result drawn, most of the countries the world over including India have adopted policies that aim at dismantling all controls over economic activities so as to leave the allocation of resources to market forces. The implication of this policy is quite obvious. If the allocation of resources is left to market forces, people with purchas-

ing power, that is, the rich, will secure bulk of the resources, while the poor will go without even the basic necessities of life.

India, as we have documented above, is an extremely unequal society. Obviously, if allocation of resources is left to market forces in such an economy, problems of poverty and inequality will deepen. In fact, in India, resource allocation is not left entirely to market forces. Wherever possible, the financially mighty are persuading the government to usurp the assets of the poor forcibly and give them away to the rich in the name of growth and development.

Thus, governments are persuaded to take away land from the poor farmers and give them away to the rich at throwaway prices in the name of industrialization. This is happening in a country where the incidence of malnutrition and hunger is one of the highest in the world.

Again, the governors of the RBI are pressurized by the media (owned by the rich) and the industry lobby to lower interest rates, even when real interest rate on savings is negative in India. Negative real interest rate means that borrowers instead of paying to the lenders for the service provided by loans are taking away savings from the savers. Let us explain this point with an example. Suppose in an economy in a given period the annual interest rate on bank deposits was 10 per cent, while the inflation rate was 20 per cent. The interest rate of ten per cent on deposits is called the nominal interest rate on deposits, while the real interest rate on deposits, defined as the nominal interest rate minus the rate of inflation, is −10 per cent in our example. Let us explain the concept of real interest rate. If in the given economy in the given period one had kept Rs. 100 in a bank deposit, one would get after one year Rs. 110 in principal and interest. But to purchase after one year what one could purchase at the time of making the deposit with Rs. 100, one would require Rs. 120. Therefore, after one year, the real value or the purchasing power of one's savings would fall by ten per cent of Rs. 100. Obviously, what one loses is gained by the borrower. If this situation persists for long, the purchasing power of one's savings will fall to almost nothing. All of one's savings would be taken away by the borrowers. Capitalist societies are, therefore, anti-poor. They generate poverty and misery instead of alleviating them. Clearly, to convert a capitalist society into a civilized society where every resident of a country will have adequate access to quality food, clothing and shelter and unlimited access to education and health care in minimum possible time, the state power should rest with the poor. Summing up the lessons learnt in this book, Chapter 7 has suggested a strategy by means of which the poor can wrest state power from the capitalists remaining within the framework of democracy.

Exercises

1. Suppose in an economy in a given period there were 100 firms. Each firm produced two goods X and Y using the production possibility frontier $Y = 100 - X^2$. X is an essential good, while Y is a non-essential good. The whole of the value of aggregate output of the economy was distributed as income between two classes of people: the rich and the poor. The former received 90 per cent of the value of aggregate output as income, while the latter received the rest. The former spent all their income on Y, while the latter spent all their income on X. How much X and Y were produced in the economy in the given period? (Hint: Derive the supply functions of X and Y and, thereby, derive the value of the supply of X plus the value of the supply of Y in terms of Y. Thereby, derive the demand for Y. Equate it to supply of Y to derive the value of Px/Py. Using it, derive the equilibrium values of X and Y.)
2. Continue with the previous problem. Suppose the government taxes the rich so that their share in the value of aggregate output falls to 80 per cent, and distributes the tax revenue to the poor so that their share in the value of aggregate output rises to 20 per cent. How will that affect outputs of X and Y?
3. Consider the economy of Problem 1. Suppose the government taxes the rich at the rate t and gives away all the tax revenue collected to the poor. If the government's objective is to raise the output of X to 80, what value of t should it choose?

Appendix

A Note on How to Take Total Differential of a Function

$$\text{To illustrate, consider the function } Z = F(x,y) \tag{2.33}$$

To take total differential of this function, you have to differentiate $F(x,y)$ partially with respect to x and multiply it by dx; again differentiate $F(x,y)$ partially with respect to y and multiply it by dy and, then, add the two.

Thus, total differential of $Z = F(x,y)$ is given by

$$dZ = \frac{\partial F(x,y)}{\partial x}dx + \frac{\partial F(x,y)}{\partial y}dy \equiv F_x(x,y)dx + F_y(x,y)dy, \text{where } F_x(x,y) \equiv \frac{\partial F(x,y)}{\partial x} \text{ and } F_y(x,y) \equiv \frac{\partial F(x,y)}{\partial x} \tag{2.34}$$

(When you differentiate $F(x,y)$ partially with respect to x, you treat y as given. Similarly, for y or any other variable).

Let us explain the above equation. Value of Z is determined by the values of x and y. The change in the value of Z is, therefore, due to changes in the values of x and y. Consider any given values of x and y, say, (x_0,y_0). The value of Z corresponding to (x_0,y_0) is denoted by Z_0 so that $Z_0 = F(x_0,y_0)$. If from (x_0,y_0) the value of x changes by a very small amount dx, with y remaining unchanged at y_0, then per unit change in x, the value of Z changes by $F_x(x_0,y_0)$. Therefore, the total change in the value of Z, when x changes from (x_0,y_0) by dx with y remaining unchanged at y_0, is given by $F_x(x_0,y_0)dx$. Similar interpretation holds for $F_y(x_0,y_0)dy$. (Interpret it). Therefore, the total change in the value of Z, when x and y change from (x_0,y_0) by dx and dy, respectively, is given by $dz = F_x(x_0,y_0)dx + F_y(x_0,y_0)dy$. Hence, if values of x and y change from any given (x,y) by dx and dy, respectively, then the resulting change in the value of Z is given by the RHS of (2.34).

Let us illustrate with an example. Suppose (x,y) represent quantities of two goods x and y. They are bought and sold at given prices P_x and P_y. The value of (x,y) denoted Z is given by $Z = P_x x + P_y y$. Take total differential of Z and explain it.

Consider the budget equation of a consumer given by $M = P_x x + P_y y$. Taking total differential of the budget equation, with P_x and P_y fixed, we get

$$dM = P_x dx + P_y dy \tag{2.35}$$

Let us explain the above equation. The LHS gives the change in the consumer's income. Let us now focus on the RHS. Consider any (x,y) that satisfied the initial budget equation of the consumer $M = P_x x + P_y y$. If the consumer from this given (x,y) changes x and y by dx and dy, respectively, then the value of his purchases will change by the RHS of (2.35). If the LHS equals the RHS, the consumer's new budget equation will be satisfied. More precisely, (2.35) yields all combinations of dx and dy, the value of each of which equals the change in the consumer's budget.

Exercises

1. Suppose M = Rs. 100, P_x = Re. 1 and P_y = Rs. 2. Write down the budget equation of the consumer. Take total differential of the budget equation treating P_x and P_y as fixed and explain it. Suppose initially he purchased the bundle (50, 25). Now his budget increases by Rs. 20. What combinations of dx and dy he can now choose from? Explain your answer. Plot these values of dx and dy in a diagram indicating its vertical intercept and slope. Explain them.
2. Take total differential of the following functions and explain them:

$$Z = x + y; Z = xy; R = xyz$$

How to Represent an Equation in a Diagram (Roughly)

For this purpose, consider the equation of the indifference curve

$$U_0 = xy \tag{2.36}$$

To present this equation in a diagram, you have to first derive the slope of this equation. To derive the slope, take total differential to get

$$0 = ydx + xdy \tag{2.37}$$

From (2.37) we get

$$dy / dx = -\left(y / x\right) \tag{2.38}$$

From (2.38) we find that the slope is negative for positive values of x and y. (Note that y and x cannot be negative as they denote quantities of two different goods). This implies that the equation represents a negatively sloped schedule in the (x,y) plane.

We also find from (2.38) that the slope is not a constant. Its value depends upon the values of x and y. Therefore, the schedule representing the equation is non-linear. To have an idea as regards the curvature of the schedule, we have to examine how the absolute value of the slope behaves as we raise x and, therefore, lower y along the indifference curve. It is clear from (2.38) that mrs_{xy} (given by $-dy/dx = (y/x)$) falls as x rises and y falls

along the indifference curve. This means that the indifference curve is strictly convex to the origin. Along such a curve, the absolute value of its slope falls as x rises and y falls along it. Check it for yourself.

We can examine how the absolute value of the slope of a curve behaves as we move along the curve mathematically also. This may be necessary, if the expression giving the value of the slope of the curve is complicated. Let us do it in the case of the given indifference curve for the purpose of illustration. Let us first write (2.38) as

$$-\left(dy/dx\right) = y/x \tag{2.39}$$

Taking total differential of (2.39), we get

$$\mathrm{d}\left[-\left(dy/dx\right)\right] = -\left(1/x^2\right)ydx + \left(1/x\right)dy \tag{2.40}$$

Equation (2.40) gives us the change in the value of mrs_{xy}, when from any given (x,y) satisfying (2.36), x and y change by dx and dy, respectively. However, we do not want dx and dy to be arbitrary. We want dx and dy to be such that (2.37) is satisfied so that we remain on the given indifference curve. Therefore, for any given dx, the value of dy, as derived from (2.37), should equal $-(y/x)dx$. Substituting it into (2.40), we get

$$\begin{aligned}\mathrm{d}\left[-\left(dy/dx\right)\right] &= -\left(1/x^2\right)ydx + \left(1/x\right)\left(-y/x\right)dx \\ &= -2\left(1/x^2\right)ydx < 0, \text{ when } dx > 0\end{aligned} \tag{2.41}$$

Equation (2.41) gives us the change in the value of mrs_{xy}, when from any given (x,y) on the given indifference curve, x and y are changed by such values that we remain on the given indifference curve. We find from (2.41) that if from any given (x,y) satisfying (2.36) x is increased and y is decreased commensurately so that we remain on the given indifference curve, mrs_{xy} falls. Therefore, the indifference curve is strictly convex to the origin.

Exercise
Consider the equation $z_0 = x^2 + y^2$, where z_0 is fixed. Represent it in a diagram for positive values of x and y.

CHAPTER 3

Marxian Economics

Abstract This chapter presents Marx's theory of surplus value and exploitation. It also discusses Marx's theories of crises of underconsumption/overproduction and disproportionality. It, then, proceeds to examine whether we can apply Marx's crisis theories to explain the recent growth performances of the major capitalist countries. In this context, it elucidates the theories of primitive accumulation and the theory of imperialism of Hobson, Luxemburg and Lenin.

Keywords Surplus value • Exploitation • Crisis of underconsumption/overproduction • Crisis of disproportionality • Primitive accumulation • Imperialism

3.1 Introduction

In a capitalist society, there are two classes of people: capitalists and workers. The former own all the material means of production, which refer to all the natural resources (such as land, mines, forest, etc.) and all the produced means of production such as machinery and equipment, constructions, raw materials and so on. The latter own only their ability to work, which Marx refers to as labour power. The objective of the capitalists is to combine the material means of production with labour to produce goods which satisfy people's needs for the purpose of sale or exchange to make profit. Goods that satisfy people's needs are referred to as goods with use values or just

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'use values' for simplicity. Goods and services that are produced with labour for the purpose of sale or exchange are referred to as commodities.

Capitalism is characterized by the freedom of purchase and sale. People in a capitalist society are free to buy or sell whatever they want. This freedom is, however, superficial. Workers have only their labour power to sell. They are, therefore, under the compulsion to sell their labour power to purchase consumption goods for survival. We have already stated that the goods that are produced for sale are called commodities. Labour power, which is produced by the workers, becomes a commodity under capitalism. This is the distinguishing feature of capitalism. In no other society is labour power an object of purchase and sale. Capitalism made its first appearance in Europe. It was preceded in Europe by feudalism. A feudal society was hierarchical. At the bottom of the hierarchy were the serfs. Serfs had inalienable rights to use land. They used land to produce the basic necessities of life such as food, clothing and so on. Above the serfs in the hierarchy were the lords. The lords were powerful people. They gave the serfs protection from having their produce and belongings including land looted. In exchange, the serfs were under the obligation to give the lords labour and a part of their produce. The serfs were not slaves. They could not be separated either from their families or from their land. The lords, in turn, were protected by the overlords. In exchange, the lords were under the obligation to give a part of their income and military service to the overlords. This is how the hierarchy proceeded. It ended with the king at the top. In feudal societies, therefore, serfs were the producers of goods and services. They owned land and other material means of production and used them with their own labour to produce the goods and services they needed. How feudalism gave way to capitalism constitutes an important part of Marx's theory of history. We shall dwell on it shortly.

The sole purpose of capitalist production is to make profit. Marx argues that capitalists make profit by exploiting the workers, that is, by giving the workers less than what they take from the workers. To develop his argument, he used labour theory of value. In what follows, we shall explain the labour theory of value. Labour is the only human contribution to production. All goods and services are produced with labour. Every good derives its value from the contribution human beings make to it. So, every good should be valued by the amount of labour it contains directly and indirectly. Let us illustrate this with an example. Suppose a capitalist has produced a good with material means of production and labour extracted from labour powers purchased from the workers. The labour extracted from labour powers is direct or living labour that has gone into the pro-

duction of the good. The indirect or dead labour that has gone into its production refers to the labour that has directly and indirectly gone into the production of the material means of production (consisting of raw materials, machinery and equipment, construction, etc.) used to produce the good. The value of the good produced by the capitalist should be given by the sum of the living labour and dead labour that have gone into its production. This way of evaluating the output of a good is referred to as the labour theory of value. Suppose in a given period of time a capitalist produced some goods and services extracting L amount of labour (measured in hours of work) from the labour powers purchased and suppose the amount of labour that had gone directly and indirectly into the production of the stock of material means of production he used is denoted by c. According to the labour theory of value, the value of the output of goods and services produced by the capitalist is $L + c$, where L is living labour and c is dead labour. Henceforth, L and c will denote, respectively, the amount of living labour and the amount of dead labour that have gone into the production of the output of capitalists. Henceforth, the value of a given quantity of a good will mean the amount of labour that has gone into its production directly and indirectly.

Review Questions

1. What is meant by a commodity?
2. Is labour power a commodity in a capitalist society?
3. Suppose a capitalist in a given period produced wheat extracting 1000 hours of work from the workers hired by him and 10,000 hours of work went directly and indirectly into the production of the material means of production (such as the implements and seeds) he used. According to the labour theory of value what is the value of the wheat produced by the capitalist in the given period? How much labour went into its production directly and how much labour was used in its production indirectly. How much living labour and dead labour went into its production?

3.2 Capitalism and Exploitation: Marx's Theory of Surplus Value and Profit

According to Marx, capitalists, while producing commodities, exploit workers to generate surplus value, which is the only source of profit. Surplus value is defined as the excess of the value of goods and services

produced over the sum of the value of the material means of production used and that of the labour powers bought. The value of labour power is defined as the value of the goods that the workers can purchase with the wages received from the capitalists. The goods the workers purchase with their wage income are referred to as wage goods. Let us denote the value of labour power by v. As noted above, the value of goods and services produced by a capitalist is given by $L + c$. The surplus value denoted by S is, therefore, given by

$$S = L + c - v - c = L - v \tag{3.1}$$

How do the capitalists generate surplus value? The answer is clear from (3.1). They do so by extracting from the labour powers bought more labour than their values, that is, they make L exceed v. Thus, workers face unequal exchange. The value they get from the sale of their labour power is less than the labour the capitalists extract from their labour power. This constitutes exploitation. Marx defines the rate of exploitation as (S/v). Workers' sale of labour power to the capitalists involves unequal exchange. Since the capitalists control labour power, they extract from it $S + v$ amount of labour, while the workers get in return only wage goods of value v. In sum, Marx shows that capitalists by dint of their control over workers' labour power can always extract from it more labour than what they give to the workers in exchange for their labour power.

Marx values goods and services in terms of the amount of labour that has gone into their production directly and indirectly. This method of valuation of goods and services, as we have already mentioned, is referred to as labour theory of value. Marx used this theory to reveal the phenomenon of exploitation of the workers by the capitalists and also its source and mechanism. Exploitation consists in unequal exchange. To identify exploitation, it is necessary to compare what the workers are giving to the capitalists to what they are getting in return from the capitalists. To compare the two, both have to be expressed in terms of the same good. Workers are giving to the capitalists labour. Accordingly, what they are getting from the capitalists have to be expressed in terms of labour too. This means that the wage goods the workers can purchase with their wage income have to be expressed in terms of labour. Herein comes the necessity of the labour theory of value. The comparison reveals not only the inequality involved in the exchange but also its source and method. It clearly shows that workers, as they own only labour power, have to sell it for survival. The capitalists, who purchase the labour power, gain com-

plete control over it. As capitalists are driven by profit motive, they extract from the labour power as much labour as possible so that the amount of labour extracted from labour power exceeds the amount of labour given to the workers by the maximum possible amount.

Review Questions

1. What constitutes exploitation of workers by the capitalists?
2. Why is such exploitation possible in a capitalist society?
3. What is meant by surplus value? Is exploitation necessary for surplus value? Explain.
4. Why is labour theory of value necessary to detect exploitation of workers by the capitalists?

3.2.1 Commodity Fetishism

If the exchange between the workers and the capitalists is regarded as a market exchange, that is, as an act of purchase and sale of labour service in the market at a market price, then the money value of labour the workers are giving to the capitalists is the wage payments made by the capitalists. Hence, the money value of the labour workers are selling to the capitalists is equal to the amount of money workers are receiving from the capitalists. So, the exchange involves no inequality and, therefore, no exploitation. This way of visualizing the relationship between the capitalists and the workers conceals the exploitation that the relationship involves. Mainstream economics or neoclassical economics visualizes the relationship between workers and capitalists this way. Marx refers to this way of visualization of the relationship between workers and capitalists as commodity fetishism. In reality, in a capitalist society, workers do not sell labour but labour power. As workers do not own any material means of production, they are under the compulsion to sell their labour to the capitalists for survival. Because of this compulsion, workers do not have any bargaining strength vis-à-vis the capitalists. As a result, when they enter into a sales contract with the capitalists, they have to allow the capitalists to take control of their labour power or their capacity to work and extract as much labour as possible. In other words, taking advantage of the helpless dependence of the workers on the capitalists for survival, the latter force the former to sell not their labour but their labour power. Accordingly, once the capitalists

get hold of the labour power, they try to extract from it as much labour as possible. In consequence, the amount of labour extracted exceeds the amount of labour given to the workers (in the form of the value of the wage goods that the wage payments can purchase) by the maximum possible amount. In this context, recall that in reality employed workers get wages and in exchange they have to work per day/week as long as their employers want them to. They do not have any choice as regards the length or speed of their work per day/week.

Review Questions

1. If we regard the relationship between capitalists and workers as that between purchasers of labour services and sellers of labour services, we cannot detect the exploitation of workers by the capitalists. Explain this statement.
2. What is commodity fetishism? Explain.

3.2.2 Methods of Extraction of Surplus Value: Absolute Surplus Value and Relative Surplus Value

The objective of the capitalists is to extract as much surplus value as possible. Marx points out that they do it in two ways. First, they extend the hours of work per day and per week as much as possible. They also increase the speed and intensity of work as much as possible through close monitoring. The surplus value that is generated through these methods is referred to by Marx as absolute surplus value. However, the scope for generation of absolute surplus value is quite limited for obvious reasons. For how long can your parents make you study per day? Second, they incorporate labour saving technological change that reduces labour requirement of production. Given everything else, this increases surplus value by reducing the labour content of the wage goods the workers can purchase with their wage income. Let us illustrate this with an example. Suppose in a given country in a given period total amount of labour that the capitalists extracted from the workers was L and the labour content (or the value) of the wage goods the workers could purchase with their wage income was, say, V. Hence the total surplus value generated denoted S was $S = L - V$. If there had occurred labour saving technological progress, then, everything else remaining the

same, V would have fallen raising S. The surplus value that is generated through technological innovations is referred to by Marx as relative surplus value. Let us illustrate with an example. Suppose in a country capitalists employed 100 workers. Each of them was made to work ten hours a day and paid a wage income of Rs. 1000 daily which could buy wage goods of value five hours of work. Thus, the total surplus value generated in the country from all the workers daily was 500 hours of work. Now suppose there occurs labour saving technological progress. Suppose everything else remains the same, that is, the capitalists continue to employ 100 workers, extract from them the same amount of labour and pay them the same wage income as before so that every worker is able to purchase the same amount of wage goods as before. But the labour content of these wage goods goes down to say 2.5 hours of work because of the technological progress. This means that the surplus value rises to 750 hours of work. This implies that the labour saving technological progress makes it possible for the capitalists to extort a larger fraction of the fruits of the workers' toil. In our example, following the technological progress, workers are able to produce more goods and services. However, the whole of this additional output is now in the command of the capitalists.

We shall now try to formalize Marx's theory of surplus value. Consider an economy in a given period. The number of workers and the stock of material means of production were given in the given economy in the given period. The number of workers is denoted by N. The capitalists employed all the workers and extracted from the labour power purchased from each of them L_0 amount of labour in the given period. The amount of labour (comprising both living labour and dead labour) required to produce one unit of output was l. The stock of material means of production is denoted by K. The value of K was $Kl = c$ (see (3.1)). The real wage rate was (W/P), where W is the wage income in terms of money paid to each worker in the given period and P is the price level. ((W/P) gives us the amount of goods and services that could be purchased with W at the price P). Given this, the amount of surplus value produced by the capitalists in the given period is given by

$$S = L_0 N - \left(\frac{W}{P} N\right) l \tag{3.2}$$

Using (3.2), we can explain generation of both absolute and relative surplus value. Absolute surplus value is generated by raising L_0. Relative surplus value is generated by, given everything else, lowering l through technological innovation.

Review Questions

1. Give an example to illustrate the concept of generation of absolute surplus value.
2. Give an example to illustrate the concept of generation of relative surplus value.
3. If large private enterprises are legally allowed to fire and hire workers without any cost, generation of what kind of surplus value does it facilitate?

3.2.3 Exploitation, Surplus Value and Profit

Marx argued that the surplus value is the only source of profit. We shall now establish Marx's claim. Profit is defined as the money value of total output minus total cost of production in terms of money. Total money cost of production consists of the total money wage paid to the workers plus total money value of the stock of material means of production used. To bring to the fore the relationship between surplus value and profit, we shall compute profit using the expression of the surplus value given by (3.1). Dividing both sides of (3.1) by l, we get the amount of goods and services that can be produced with the surplus value. It is given by

$$\frac{S}{l} = \left(\frac{L}{l} + \frac{c}{l}\right) - \left(\frac{v}{l} + \frac{c}{l}\right) \tag{3.3}$$

Consider the RHS of (3.3). Focus on the first term within brackets. Total amount of labour used in production is $L + c$. Hence the total amount of goods produced by the capitalists is $[(L + c)/l]$. Let us now focus on the second term within brackets. (v/l) gives the amount of wage goods that the workers can purchase with the wages received from capitalists. (c/l) gives the stock of material means of production used. Therefore, if we multiply both sides of (3.3) by P, we get profit of the capitalists. Denoting it by Π, we get

$$\Pi = P\frac{S}{l} = P\left(\frac{L}{l} + \frac{c}{l}\right) - P\frac{v}{l} - P\frac{c}{l} = P\left(\frac{L}{l} + K\right) - P\frac{v}{l} - PK = P\frac{L - v}{l} \qquad (3.4)$$

From (3.4) it is clear that Π is nothing but the money value of the goods and services that can be produced with S amount of labour. This establishes Marx's claim that surplus value is the only source of profit.

The intuition behind the result stated above is quite simple. Consider a given economy in a given period. A given volume of goods and services was produced in the given period in the given economy with both living and dead labour. A part of this aggregate output of goods and services was needed to replenish the stock of the material means of production of the capitalists. This is the part of the aggregate output that compensates for the material means of production that was used up in the production of the aggregate output. This part of aggregate output can, therefore, be attributed to the dead labour that was used to produce the aggregate output. (This part of the aggregate output is, therefore, a part of the cost of production incurred by the capitalists.) The rest of the aggregate output should, therefore, be attributed to the living labour. The whole of this part of output should belong to the workers who supplied the living labour. There is, thus, no room for profit except by means of exploitation, which consists in taking away a part of the output produced by the living labour. If the workers who supplied the living labour are able to purchase the whole of the part of the aggregate output produced by living labour with their wage income, the surplus value and profit are zero and there is no exploitation. If, however, their wage income is insufficient for the purchase of this part of the aggregate output, the value of the part that they are unable to purchase is surplus value and its money value is profit. Hence, the source of capitalists' profit is exploitation and surplus value.

Let us illustrate the relationship between surplus value and profit using the example of a simple economy. Suppose the capitalists in the given economy in a given period produced only wheat using implements and a stock of wheat as seed. The stock of wheat used as seed was completely absorbed in production, but the implements were durable and they remained usable even after the given period was over. However, they underwent wear and tear because of their being used in production in the given period. Suppose the value of the stock of wheat used as seed is u and the amount of labour required to restore the implements to their initial level of productivity is j. So the amount of dead labour used in production

in the given period in the given economy was $u + j$. Hence, $c = u + j$. L amount of living labour was extracted from the workers in the given period. Accordingly, the total amount of labour used in the given period in the given economy was $L + c$. Suppose the amount of labour (comprising both living and dead labour) required to produce one unit of output was l. So the total amount of output produced was $[(L + c)/l]$. Of this total output, the part (c/l) was needed to replenish the stock of wheat used as seed and restore the productivity of the implements. The rest of the output, (L/l), is produced by the living labour and, therefore, should rightfully accrue to the workers who supplied the living labour. There emerges profit if and only if the capitalists can take away a part of the output produced by living labour. Thus, the source of profit is exploitation. Out of the output (L/l), workers could command only (v/l) with their wages. So the capitalists could earn profit, that is, they could claim a part of the (L/l) amount of output as profit if and only if $L > v$. The part of output given by $[(L/l) - (v/l)]$ is the profit of the capitalists in terms of the goods produced. If we multiply it by P, we get money profit. Thus, the capitalists earn profit only by taking away a part of the output produced by the living labour. This constitutes exploitation.

Review Questions

1. Explain why surplus value is necessary for profit?
2. Explain why surplus value is sufficient for profit?
3. Suppose L_0 is raised, but N is lowered so that L_0N remains the same as before. Other factors remaining the same, how do surplus value and profit change? What kind of surplus value is generated in this case?
4. What happens to surplus value and profit following a technological innovation that reduces l? What kind of surplus value is generated in this case?

3.3 Capitalism and Crisis

According to Marx capitalism is extremely prone to crises. He points to three major crises that a capitalist society may be afflicted with: underconsumption or overproduction, disproportionality and falling rate of profit. In what follows, we shall focus on the first two.

3.3.1 The Crisis of Underconsumption or Overproduction

Two features of capitalism, namely, production for exchange and not for self-consumption and production for generating surplus value, in Marx's view, are responsible for the crisis of underconsumption or overproduction. To generate surplus value, capitalists spend on R&D to bring about labour saving technological progress. Capitalists are engaged in a fierce competition with one another. Every capitalist has to innovate continuously to reduce the cost of production for survival. Those who fail to keep pace with their rivals have to go out of business. Thus, the ownership of material means of production gets concentrated in fewer and fewer hands. The size of the capitalist class shrinks over time and individual capitalists who survive become larger and larger over time. This process of shrinkage of the size of the capitalist class through fierce competition is referred to by Marx as centralization. Capitalists finance their spending on R&D (research and development) and on the stocks of material means of production for the purpose of augmenting them with their own savings and also with the funds made available to them by the financial institutions such as banks, insurance companies, the stock market and so on. These financial institutions make the savings of the workers available to the capitalists. Aided by this mobilization of the savings of the workers by the financial institutions, competition among capitalists sets up a fierce pace of technological progress. It relentlessly expels living labour from the production process. This means that labour requirement of production continuously goes down. This leads to the crisis of underconsumption or overproduction. We establish this using the following equation:

$$Y = c_w \cdot \left(\frac{W}{P} \cdot \frac{l_0 Y}{L_0} \right) + c_c \cdot \left(Y - \frac{W}{P} \cdot \frac{l_0 Y}{L_0} \right) + I; \qquad Y = \frac{L_0 N}{l} \tag{3.5}$$

In what follows, we shall explain (3.5). It relates to a given country in a given period of time. Focus on the LHS first. Y stands for real gross domestic product (GDP) of the given country in the given period of time. Let us explain the concept of real GDP. The establishments where production takes place are referred to as firms. Consider the given country in the given period of time. Club together all the firms existing in the given economy in the given period and regard the conglomerate as a single giant firm. The money value of all the goods and services produced by all the firms together, that is, the money value of all the goods and services produced by the giant firm in the given country in the given period is referred

to as the GDP or the nominal GDP of the given country in the given period. If we divide the nominal GDP by the average price of goods and services, we get real GDP. Therefore, real GDP expresses GDP in terms of goods and services.

Review Questions

1. How does the ownership of material means of production get concentrated in a capitalist economy?
2. What is centralization?
3. How do you define nominal GDP and real GDP?

To produce different goods and services, the giant firm buys labour power from the workers and applies the labour extracted from the labour power to the material means of production owned by the capitalists who also own the giant firm. The material means of production consist of machinery and equipment, construction and natural resources such as land, mines and so on. The material means of production lose a part of their productivity or money value on account of their being used in production. The money value of the goods and services needed to restore their productivity is called depreciation or depreciation in nominal terms. If we divide nominal depreciation by the average price of goods and services, we get depreciation in real terms. Depreciation includes the following: the money value of repairing, servicing and so on, of the machinery and equipment needed to keep their productivity intact, money value of the repairing, servicing and renovation of the office buildings, factory sheds and so on needed to keep their usefulness and appearance intact, the money value of the labour and materials that have to be applied to soil to keep its fertility unaffected. If we subtract nominal depreciation from nominal GDP, we get nominal net domestic product or nominal NDP. Dividing it by the average price of goods and services, we get real NDP.

The produced goods and services are sold to the individuals: the workers and the capitalists. The revenue the giant firm earns from the sale of its produce does not remain with the giant firm. It pays out a part of it as wages to the workers. The remaining part goes into the hands of the owners of the giant firm, the capitalists. A part of what the capitalists get is needed to replenish the stock of the material means of production. This part, as we

have already mentioned, is referred to as depreciation. The remaining part is capitalists' profit. Profit plus depreciation is referred to as gross profit of the capitalists. Thus, the GDP of a country in a given period goes into the hands of the workers and capitalists as wages and gross profit in the given period. Hence, the GDP of a country in a given period is equal to the aggregate wage income and the aggregate gross profit of the country in the given period. Aggregate real GDP of a country in a given period is equal to aggregate wage income of the workers of the country in the given period in real terms plus the aggregate gross profit of the country in the given period in real terms. Let us first compute aggregate wage income in real terms and aggregate gross profit in real terms. Suppose the number of workers employed in the given period is N and the total amount of labour extracted from each of the N number of workers is L_0. Both living labour and dead labour are used to produce every unit of output. Suppose the amount of living labour required to produce one unit of real GDP (Y) is l_0. Therefore, $Y = (NL_0/l_0)$. Hence, $N = (Yl_0/L_0)$. The money wage paid to each worker in the period under consideration is W. Hence total wage income of the workers in money is $WN = W\cdot(Yl_0/L_0)$. Total wage income of the workers in real terms is, therefore, $(W/P)(l_0Y/L_0)$, where P denotes the average price of goods and services. Hence, total gross profit in real terms is given by $[Y - (W/P)(l_0Y/L_0)]$. Workers and capitalists use their income to purchase goods and services from firms for the purpose of consumption. Consumption refers to use of goods and services to satisfy human needs. c_w denotes the fraction of workers' income the workers spend on consumption. c_w is referred to as the average propensity to consume of the workers. Accordingly, total consumption expenditure of the workers in real terms is $c_w\cdot w\cdot(Yl_0/L_0)$, where $w \equiv (W/P)$. The notation c_c denotes the average propensity to consume of the capitalists. Hence, $c_c\cdot(Y - w\cdot(Yl_0/L_0))$ represents the aggregate real consumption expenditure of the capitalists. Capitalists are substantially richer than the workers. Hence, ability to save of the capitalists is much higher than that of the workers. Normally, the fraction of income spent by richer people on consumption is less than that by the poorer people. Accordingly, c_w is much larger than c_c. Both c_w and c_c lie between 0 and 1. Hence, $[c_w\cdot w\cdot(l_0/L_0) + c_c\cdot(1 - w\cdot(l_0/L_0))]Y$ is the aggregate consumption function of the economy. That is, it gives total real consumption expenditure of the workers and capitalists together as a function of Y, given the values of the other variables.

Review Question
Suppose in a given economy in a given period the amount of real wage paid per unit of real GDP produced was (1/2). i.e., $(W/P)\cdot(l_0/L_0) = (1/2)$. Workers' and capitalists' average consumption propensities were 0.75 and 0.5, respectively. Derive the aggregate consumption function of the economy, which gives the aggregate consumption spending in real terms of workers and capitalists as a function of Y.

Capitalists also buy goods and services from firms to replenish their stock of material means of production and also to add to it. This purchase or demand for produced goods and services is referred to as investment demand. It is denoted by *I*. Capitalists finance this investment demand in two ways. First, they do it with their own savings. Second, they also finance their investments by raising funds by way of loans from banks and the stock market or by selling equities in the stock market. Let us explain. Large private enterprises are usually joint stock companies or corporations. They raise the fund they need for setting up their production facilities or for expanding their production facilities principally by selling equities in the market. The market where equities are bought and sold is referred to as the stock market. All the buyers of equities of a company, referred to as shareholders of the company, are also the owners of the company. A joint stock company normally has a very large number of shareholders or owners. All of them do not take part in running the companies. They elect through voting a body of their representatives called the board of directors. It is the board of directors that run the company. The people who set up the company, that is, the people who sell equities or shares in the market to raise the fund necessary to build the production facilities of the company are called promoters of the company.

Capitalists, as we have pointed out above, finance their investment not only with their own savings but also with loans taken from the market or banks. Workers lend out their savings to the capitalists. Depositing savings with banks is nothing but lending to the banks and lending to the banks amounts to lending to the capitalists, since banks are owned by the capitalists. Thus, workers have another component of income, namely, interest income from the loans given to the capitalists. Denoting the total out-

standing loans of the workers at the beginning of the give period by B and the average interest rate that applies to it by r_0, the total amount of nominal (money) interest income of the workers in the given period is Br_0. Note that B stands for the total amount of loans given by the workers in the past periods at interest rates that prevailed in the past periods. Therefore, Br_0 is fixed in the given period under consideration. Workers will get interest income from loans given in the present period in future. Br_0 is paid by the capitalists. Hence, to get real gross profit, we have to deduct from real GDP not only total real wage payments but also total real interest payments made by the capitalists to the workers. It is given by (Br_0/P). Incorporating these changes in (3.5), we rewrite it as

$$Y = c_w \cdot \left(\frac{W}{P} \cdot \frac{l_0 Y}{L_0} + \frac{r_0 B}{P} \right) + c_c \cdot \left(Y - \frac{W}{P} \cdot \frac{l_0 Y}{L_0} - \frac{r_0 B}{P} \right) + I; \qquad Y = \frac{L_0 N}{l_0} \tag{3.6}$$

In (3.6), I denotes the aggregate planned investment spending of the capitalists in real terms in the given country in the given period. It should be clear from our discussion so far that the total planned spending in real terms on goods and services produced by firms in the given country in the given period is given by the RHS of (3.6).

Let us now focus on the variables that appear in the expression giving the aggregate planned spending on produced goods and services in real terms. c_w and c_c are fixed and they are determined by the needs and tastes and preferences of the consumers. The determinants of c_w and c_c are quite stable and remain unchanged for long periods of time. Hence, we shall not try to explain them and take them as exogenously given. l_0 is determined by technology. We shall not try to explain the technological change. Hence, we shall take technology and, therefore, l_0 as exogenously given. L_0 is determined by the scope for generating absolute surplus value, which, in turn, depends upon the relative bargaining strengths of the workers and capitalists, labour laws governing work conditions including the maximum length of working time in a given period. We shall not try to explain these factors and take them and, therefore, L_0 as given. Capitalists make investment to earn profit in future. Investment is driven mainly by capitalists' expectation or optimism regarding future. Future is completely uncertain and unpredictable. Hence, capitalists' expectations regarding future do not have much of a rational basis. We shall not try to explain them and regard them and, therefore, I as exogenously given.

Let us now focus on P and W. Unlike what the neoclassical economics assumes, markets of different goods and services are not perfectly competitive. They are oligopolies. In an oligopoly market, there are just a few producers and every producer has substantial market power. This means that if a producer in an oligopoly market changes his price, it will produce a significant impact on the sales of other producers in the market. In oligopoly markets, prices tend to be rigid. The reason may be explained as follows. If a capitalist in an oligopoly market lowers the price of his product, his rivals will lose their customers to him. Obviously, they will not remain passive and lower their prices too to retain their market shares. So, a price war will break out and it will hurt every capitalist in the market. Therefore, in an oligopoly market, no capitalist unilaterally lowers the price of his product. Similarly, if a capitalist unilaterally raises the price of his product, his sales and profit will fall drastically, since he will lose his customers to his rivals. Hence, in oligopoly markets capitalists do not change their prices. They set their prices on the basis of cost of production more or less at the same level, keep the prices fixed and adjust their output to demand that comes forth at the fixed prices. The contrast of this scenario with the neoclassical theory is quite vivid. In the latter, prices adjust to clear the markets. Here, prices stay rigid and outputs adjust to clear the markets. In (3.6), (Br_0/P) is fixed, since, as we have pointed out above, Br_0 is fixed and so is P. In oligopoly markets, money wages tend to be rigid also. In an oligopoly market, capitalists are locked in a fierce competition with one another. If in such a scenario a capitalist unilaterally lowers the wage rate in the face of availability of unemployed workers, he will lose his best workers and the best among the unemployed workers to his rivals and his loss will far outweigh his gain. Again, if a capitalist raises his wage rate, his rivals will lose their best workers to him. Hence, they will also raise their wage rates. Thus, a wage war will break out hurting all the capitalists. Hence, in oligopoly markets, wages tend to be rigid too.

Given the arguments presented above, we find it reasonable to assume here that P and W are fixed and capitalists adjust their outputs of goods and services so that the demand for their products that comes forth at the fixed prices is fully met. In such a situation, the aggregate output or GDP of a given country in a given period will be determined by the aggregate demand for goods and services that comes forth at the fixed P and W, given all other exogenous variables, in the given country in the given period. Thus, (3.6) will determine Y. In (3.6), given our assumptions, there is only one unknown or endogenous variable. It is Y. (An endoge-

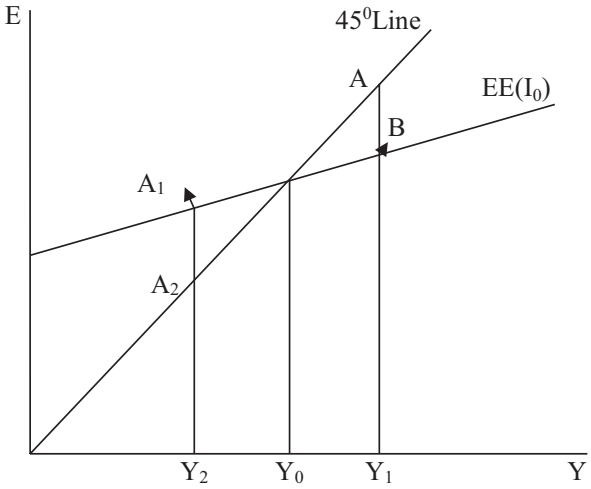

Fig. 3.1 Determination of real GDP

nous variable is one whose value the theory explains). All other variables in (3.6) are exogenous variables, as their values are exogenously given (i.e., given from outside) and not determined here.

We can solve Eq. (3.6) for Υ given the values of I, l_0, the consumption propensities, real wage rate and L_0. This value of Υ equates the LHS and RHS of (3.6). This means that, if this Υ is produced, it will exactly equal aggregate real planned spending on goods and services. The solution of (3.6) is shown in Fig. 3.1, where the value of aggregate demand denoted by E is measured on the vertical axis and Υ is measured on the horizontal axis. The line $EE(I_0)$ gives the value of aggregate planned demand for Υ given by the RHS of (3.6) corresponding to every different value of Υ, when $I = I_0$. Note that, when $\Upsilon = 0$, $E = I_0 + (c_w - c_c)\cdot(Br_0/P)$—see the RHS of (3.6). Thus, the vertical intercept of the $EE(I_0)$ schedule is $I_0 + (c_w - c_c)\cdot(Br_0/P)$. The slope of the $EE(I_0)$ schedule is $c_w\cdot[(W/P)l_0/L_0] + c_c\cdot(1 - [(W/P)l_0/L_0])$. Let us explain the slope. It gives us the amount by which aggregate demand goes up per unit increase in Υ, when Υ goes up by a small amount $d\Upsilon$. If Υ increases by $d\Upsilon$, workers get out of it $[(W/P)l_0/L_0]d\Upsilon$ and the capitalists get the rest $(1 - [(W/P)l_0/L_0])d\Upsilon$ as gross profit. Accordingly, workers', capitalists' and total consumption demand go up by $c_w\cdot[(W/P)l_0/L_0]d\Upsilon$, $c_c\cdot[1 - (W/P)l_0/L_0]d\Upsilon$ and $[c_w\cdot[(W/P)l_0/L_0] + c_c\cdot(1 - [(W/P)l_0/L_0])]d\Upsilon$, respectively. Thus, per unit

increase in Y, the aggregate consumption demand increases by $[c_w \cdot [(W/P) l_0/L_0] + c_c \cdot [1 - (W/P) l_0/L_0]]$. Investment demand is independent of Y. It, therefore, remains unchanged. This explains the slope.

To identify the value of Y that solves (3.6), we shall use the 45° line. The coordinates of every point on the 45° line are equal. Therefore, the value of Y that satisfies (3.6), with $I = I_0$, corresponds to the point of intersection of the $EE(I_0)$ line and the 45° line. This Y is labelled Y_0 in Fig. 3.1. At Y_0, the aggregate demand for Y and Y are equal. The capitalists will produce Y_0 level of output. If they produce a larger level of output, say Y_1, the aggregate output of goods and services, given by Y_1A in Fig. 3.1, exceeds the aggregate planned demand for goods and services, given by Y_1B. There is thus an excess supply of AB. Capitalists will not be able to sell as much as they have produced. More precisely, they will not be able to sell goods of AB amount. Hence, they will reduce Y. The fall in Y will continue until Y attains its equilibrium value, Y_0. If they produce less than Y_0, say Y_2, the aggregate demand, as shown in Fig. 3.1, will exceed Y_2 by A_1A_2. Capitalists will find that they are unable to meet the entire demand for their products. So, they will increase production and this increase in Y will continue until Y_0 is reached.

Review Question

1. Suppose in a given country in a given period $c_w = 1$, $c_c = 0.5$, $[(W/P) \cdot (l_0/L_0)] = 0.5$, $B = 0$ and $I = 1000$. Write down the equation of the aggregate demand function. Plot it in a diagram and explain its vertical intercept and slope. Write down the equilibrium condition and derive the equilibrium value of Y. If producers produce 4500 units of output, what is the state of the goods' market? How will the capitalists respond to such a situation? If the capitalists produce 3500 units of output, what state will obtain in the goods market? How will the capitalists respond to such a situation?

The full-employment level of output in a given country in a given period is defined as the maximum level of output the country can produce in the given period with the available stocks of capital, labour and technology. The full employment output is denoted by Y_f. If Y is less than Y_f, a part of the productive capacity of the capital stock will remain unutilized, a section of the workers will be unemployed and capitalists will be saddled with losses. Let us explain why capitalists lose if a part of the productive capacity remains

unutilized. The depreciation of the capital stock has a large fixed component, which is independent of Y. Houses/constructions depreciate at some given rate even if they are not inhabited. Machinery and equipment become obsolete because of technological progress. Suppose a factory which costs Rs. 1 crore is likely to last for ten years, given the rate of technological progress. It means that it depreciates at the rate of Rs. 10 lakh annually, and it does not matter how much use it is put to. We denote the fixed component of depreciation by D. The depreciation that takes place irrespective of whether the capital stock is put to use or not constitutes the fixed component of depreciation. The additional depreciation that occurs when the capital stock is put to use is the variable component of depreciation. It increases the more the capital stock is put to use in a given period. When the factory is used, there will be repairing cost, servicing cost and so on, and these costs are larger the higher the level of output of the factory in a given period. Thus, the variable depreciation cost is an increasing function of Y. Besides the fixed component of depreciation, the interest payments that have to be made on loans taken to purchase the capital stock is also fixed, as the loans were taken in the past. It is given by (Br_0/P). Suppose the excess of P over the average wage cost plus the average variable depreciation cost is a. Let us denote the fixed component of depreciation by D. (Note that D includes the sum to be set aside every period for the repayment of loans taken to purchase the stock of capital or the material means of production). If $aY < D + (r_0B/P)$, capitalists incur losses. If $aY > D + (r_0B/P)$, capitalists make profit. Note that a is normally found to be much less than $D + (r_0B/P)$. It is obvious that the larger the Y, the greater is the profit made by the capitalists. Capitalists' profit is maximum when Y is at Y_f.

Review Question

Suppose a capitalist produces wheat on his land with tractors. The annual fixed depreciation of the tractors is Rs. 50,000, and the interest charge on loans taken to purchase the tractors is Rs. 60,000 annually. (Note that the annual fixed depreciation of the tractors includes the sum to be set aside every year for the repayment of the loan taken to purchase the tractors). The excess of the price of a quintal of wheat over the sum of average wage cost, average variable depreciation cost and average fuel cost in a given year was Rs. 1000. What was his break-even (zero profit/loss) level of output in the given year? Was it optimal for the capitalist to produce the maximum level of output, which was 400 quintals of wheat, that he could produce on his land in the given year, if there was that much demand for his product?

3.3.1.1 *Technological Progress and the Crisis of Underconsumption/Overproduction*

According to Marx, labour saving technological progress takes place continuously in a capitalist economy as a result of the capitalists' efforts at raising surplus value and profit and this brings about the crisis of underconsumption/overproduction. We shall now show how technological progress that brings about a reduction in l_0 leads to the crisis mentioned above. Suppose in a given period, a given economy was in equilibrium with the full-employment level of output initially.

The situation is depicted in Fig. 3.2, where the equilibrium Υ, Υ_f, corresponds to the point of intersection of the 45° line and the $EE(I_f)$ schedule representing the RHS of (3.6), with $I = I_f$. If now there occurs technological progress that reduces l_0, the $EE(I_f)$ line will rotate downward and intersect the 45° line at a lower level of Υ labelled Υ_0 in Fig. 3.2. Υ will, therefore, fall to its new equilibrium level. Let us explain how this happens. At the initial equilibrium Υ, there emerges an excess supply of AB. This happens for the following reason. With the reduction in l_0, at the initial equilibrium Υ workers' wage income and, therefore, their consumption demand fall by $(W/P)\cdot(\Upsilon_f/L_0)dl_0$ and $c_w\cdot(W/P)\cdot(\Upsilon_f/L_0)dl_0$, respectively. Note that $dl_0 < 0$. Capitalists' income and their consumption demand, on the other hand, increase by

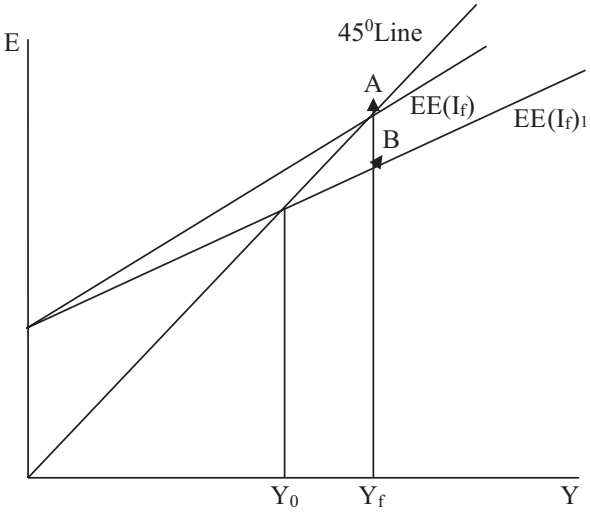

Fig. 3.2 Crisis of underconsumption/overproduction

$-(W/P)\cdot(\Upsilon_f/L_0)(dl_0)$ and $-c_c\cdot(W/P)\cdot(\Upsilon_f/L_0)\ (dl_0)$, respectively. Therefore, the aggregate demand falls by $(c_w - c_c)\cdot(W/P)\cdot(\Upsilon_f/L_0)dl_0$, since $c_w > c_c$. Therefore, at the initial equilibrium Υ there emerges an excess supply of $(c_w - c_c)\cdot(W/P)\cdot(\Upsilon_f/L_0)(-dl_0)$. Hence, AB in Fig. 3.2 equals $(c_w - c_c)\cdot(W/P)\cdot(\Upsilon_f/L_0)(-dl_0)$. Capitalists will, therefore, reduce output. This will continue until the new equilibrium is reached. If the fall in Υ is substantial, capitalists will be saddled with large losses. Many of them may become bankrupt also, that is, they may not be able to pay interest on their loans or pay back their loans. This adversely affects the workers who lent to the capitalists. They lose a part of their savings and interest income. Their consumption expenditure goes down. They will also stop lending to the capitalists or become extremely cautious as to whom they are lending. The supply of loans to the capitalists will, therefore, fall drastically. Investment spending will accordingly go down. Υ will, therefore, fall further worsening the situation. The aggregate output and employment will, thus, fall continuously perpetrating a crisis. This is the crisis of underconsumption or overproduction.

Marx thus points to a contradiction in a capitalist society. At the micro-level, capitalists consider it optimal to innovate to reduce living labour content of production in order to raise surplus value and profit. However, at the macro level, the decline in the living labour requirement of production reduces aggregate demand, which, in turn, reduces aggregate output and profit. This contradiction is at the root of the crisis of underconsumption or overproduction.

Exercises

1. Suppose l_0 falls by dl_0. How are the vertical intercept and the slope of the $EE(I_f)$ schedule affected? How and why does the state of the goods market change at the initial equilibrium Υ? How will the capitalists respond to the change? By how much does the excess supply fall per unit decrease in output? In the light of your answer to this question, derive the amount by which the capitalists will change their output.
2. Suppose in a country in a given period of time, the average propensities to consume of the workers and capitalists were 1 and 0.5, respectively. The firms in the country in the given period produced goods and services worth Rs. 20,000. Hundred workers were employed and each worker received a wage income of Rs. 100. Capitalists

(*continued*)

(continued)

planned to spend Rs. 2000 for purposes of investment. Suppose P was Re. 1. What was the level of aggregate demand in the given period? Could the firms sell all the goods they produced in the given period? What is the value of excess supply (excess demand)? (Excess supply is defined as excess of supply (Y) over the value of aggregate demand. Similarly, define excess demand).

(Of course, profit from unsold output is zero. In the situation of excess supply, therefore, gross profit is given by the equation: gross profit = sales − wage income = [c_w·wage income + investment expenditure + c_c·gross profit] − wage income. Using this definition of profit, derive the value of gross profit from the equation given here and, thereby, derive the amount of excess supply).

3. Consider the following example. Suppose in a given economy in a given period, the daily wage paid to a worker was Rs. 100. Ten hours of labour were extracted by the capitalists from each worker daily. Applying ten hours of labour to the material means of production, capitalists produced output worth Rs. 200. Thus, the wage cost of producing goods and services of Rs. 200 was Rs. 100. Therefore, the wage cost of producing goods and services of Re. 1 was (Rs. 100/Rs. 200 = Re. (1/2)). Suppose P in the given period was Re. 1 and the real GDP of the given economy in the given period is denoted by Y. The wage cost of producing Y was $0.5Y$. Also suppose $B = 0$. The gross profit that was generated out of Y was, therefore, $Y - 0.5Y = 0.5Y$. Suppose in the given period $c_w = 1$, $c_c = 0.5$ and I = Rs. 1000. Aggregate real planned spending or aggregate real planned demand (E) in the given economy in the given period was, therefore, $E = 0.5Y + 0.5.\ (0.5)Y + 1000 = 0.75Y + 1000$. In this case, if nothing were produced, there would be an excess demand of 1000 units. If capitalists raised Y by 1 unit, excess demand would not fall by 1 unit. This is because, as Y rose by 1 unit, wage and gross profit income together went up by 1. Each of wage income and gross profit went up by 0.5 of a unit raising aggregate consumption demand by 0.75 of a unit.

(*continued*)

(continued)

Therefore, when Y rose by 1 unit, excess demand declined not by 1 unit but by $(1 - 0.75) = 0.25$ of a unit. Excess demand fell by 0.25 of a unit, when Y rose by 1 unit. Excess demand fell by 1 unit, when Y rose by $(1/0.25)$ units. Excess demand fell by 1000 units, when Y rose by $(1/0.25).\ 1000 = 4000$ units. Thus, if Y was less than 4000 units, there would be excess demand. Hence, producers would expand output. Again, if Y was greater than 4000 units, there would be excess supply. Hence, capitalists would reduce Y. Thus, in the given economy, in the given period, GDP would settle down to 4000 units. Suppose the level of GDP produced in the given economy in the given period was 3000 units. What was the state of the goods market? How would the capitalists have responded to such a situation? Again, suppose the level of GDP in the given economy in the given period was 5000 units. What was the state of the goods market? How would the producers respond to such a situation? The value of Y that equated the aggregate planned demand for Y and Y is obtained by solving the equation $Y = 0.75Y + 1000$. Show the solution of this equation in a diagram. Indicate in the diagram the states of the goods market at $Y = 3000$ and $Y = 5000$.

4. Suppose in the given economy considered above there took place in the given period technological progress that reduced living labour content of production so much so that the share of wage income in GDP fell from 0.5 to 0.25. Explain how it had affected equilibrium Y using a diagram.
5. What is a joint stock company or a corporation? Suppose a joint stock company has raised Rs. 5 crore selling equities of Rs. 100 each in the stock market. What kind of income will the purchasers of these equities get from the company? Given the fact that each equity entitles the holder of the equity to one vote, how many equities an individual has to purchase to make sure that he will be elected on the board of directors? Who are the promoters of a joint stock company?

3.3.2 Disproportionality Crisis

We shall now explain what disproportionality crisis means. Different sectors in a capitalist economy are interdependent in the sense that output of every sector is used as inputs in the other sectors. (Think of, e.g., the case of coal and electricity. Coal is needed to produce electricity, while electricity is needed to produce coal. If capacity created for the production of electricity is large relative to that of coal, a part of the capacity in the electricity sector may remain unutilized because of the shortage of coal). Hence, productive capacities created in different sectors of production should be balanced so that productive capacity created in some sectors does not remain partly or fully idle because of shortages of crucial inputs produced by the other sectors. When productive capacities created in different lines of production are not balanced, productive capacities in some sectors are too large relative to those in the other sectors. As a result, the former remain unutilized partly or fully on account of shortages of crucial inputs. However, in a capitalist economy, there is no mechanism that guarantees that the capacities created in different lines of production will be balanced. Investments in capitalist economies are undertaken by individual investors independently of one another in an uncoordinated manner. Investors are driven by profit motive. If in a given period, outputs of some sectors are in short supply, investment in those sectors becomes profitable. If too many investors consider investments in those sectors profitable, amount of investment taking place in those sectors may be too large relative to that in the other sectors. Hence, in the next period, capacities in the former may be too large relative to those in the latter. This is the problem of 'disproportionality'. If expensive productive capacities created in some sectors remain idle because of the problem of disproportionality, investors will be saddled with large losses. They may become bankrupt also, that is, they may not be able to service their debts (i.e., they may not be able to repay the debts or pay interest on their debts). Bankruptcy in one segment of the economy will adversely affect the rest of the economy also. The financial institutions and the individuals who lent to the adversely hit sector will not get back their loans or receive interest on their loans. They will be saddled with losses as well. They may also become bankrupt. Thus, losses and bankruptcy in one segment of the economy quickly spread to the rest of the economy. Workers lose faith in the financial institutions and become extremely cautious as to whom they are lending. Thus, supplies of funds to the capitalists dry up and investment may drop substantially leading to the emergence of large-scale excess capacity in all the different sectors of the

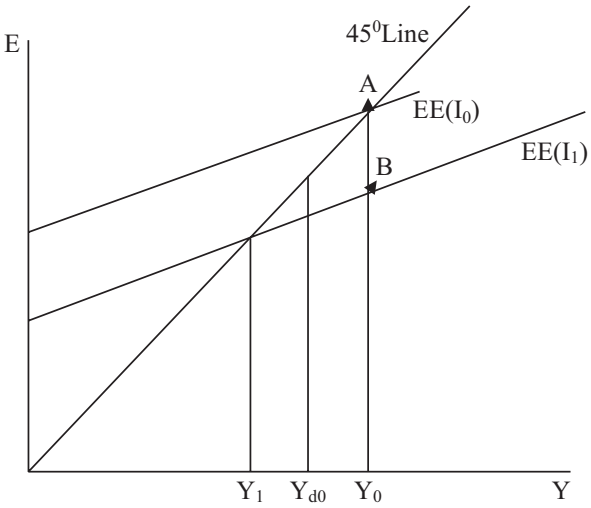

Fig. 3.3 Disproportionality crisis

economy. Thus, the problem of disproportionality may lead to the crisis of underconsumption or overproduction. The point may be illustrated using Fig. 3.3 where in a given period in a given economy, the $EE(I_0)$ line representing (3.6) with $I = I_0$, intersected the 45° line at Υ_0. But, in the given period in the given economy, the problem of disproportionality emerged and the maximum output that could be produced was Υ_{d0}, which was much less than Υ_0. The idle capacity, bankruptcy and the consequent drying up of loan supply might reduce the aggregate investment in the next period by such an amount that the *EE* schedule in the next period would shift down and intersect the 45° line at a Υ less than Υ_{d0}. This Υ is labelled Υ_1 in Fig. 3.3. If this happened, the problems of the previous period would be aggravated. Excess capacity would emerge in all sectors giving rise to the problem of underconsumption/overproduction.

Let us elaborate on the point made above further. Suppose in a given period in a given economy, capacities created in the non-electricity sector were found to be too large relative to the power-generating capacity. As a result, quite a large part of the capacities created in the non-electricity sector remained unutilized because of the shortage of power. Quite a substantial part of the idle capacities, as happens normally, were created with loans from the banks. Interest on these loans had to be paid, some of the

loans had to be repaid also, but the capacities created with these loans did not yield any income. Firms, as a result, might have found that they were unable to make these interest payments or repayments of loans to banks. Banks take deposits from the depositors and use these deposits to give loans to the firms. From the interest and the repayments they receive from their borrowers, they pay interest to the depositors and meet their claims for withdrawal of their deposits. If borrowers are unable to pay interest or repay the loans to the banks, they suffer losses and may, in their turn, fail to pay interest to the depositors or meet their claims for withdrawal of deposits. Depositors, in consequence, may become panicky. They may become apprehensive of losing their deposits. There may, therefore, take place a run on banks. That is, the depositors may seek to withdraw all their deposits en masse at once. However, banks lent out the deposits. So, they would not be able to meet depositors' claims for withdrawal. This situation is referred to as bank failure. In this scenario, people will lose faith in banks and the financial sector. They will not want to lend out their savings to either banks or other financial institutions. They will want to hold all their savings in the form of currency. In the light of the scenario described above, answer the following questions: (1) Firms finance quite a large part of their investment (purchase of material means of production to add to the existing stock of material means of production) with loans taken from banks. Will they be able to secure new loans from banks in the situation described here? (2) Will the capitalists in the non-electricity sector be interested in making any investment? (3) In the scenario described above, how is investment likely to change? Will there occur the crisis of overproduction or under consumption in this case leading to large-scale excess capacity and unemployment of workers? Can you illustrate the situation using Fig. 3.3? (4) Why do people save? How are they likely to change their consumption/saving in the situation described here? (Hint: If there emerges large-scale unemployment of workers, they will be panicky and depressed. They will become apprehensive of more job losses in future. They will, accordingly, reduce their consumption spending and save more to tide over their probable period of future unemployment. This will worsen the problem of underconsumption or overproduction.)

Exercises

1. Suppose in a given period, the transport sector is too small relative to the rest of the economy. This means that the amount of transport service that is required for full utilization of the capacity in the rest of the economy far exceeds the capacity output of the transport sector. Explain this situation. Suppose in the given period, the level of aggregate demand is sufficient for full utilization of capacity in the rest of the economy. Show the equilibrium output and actual output that the capitalists will produce in a diagram.
2. Suppose half a unit of steel is required to produce 1 unit of real GDP. In a given period, capacity output of steel is 50 units. The aggregate demand function of the economy in the given period is given by $100 + 0.5Y$. How much output will the capitalists produce in the given period? Explain your answer using a diagram.

3.4 Performance of Capitalist Economies and Marx's Crisis Theories

We shall now assess the performance of the capitalist economies in the light of the crisis theories of Marx. One important indicator of the performance of a capitalist economy is the growth rate of real GDP. The growth rate of real GDP is measured as follows. Suppose the real GDP of year t is denoted by Y_t. The growth rate of real GDP from year $t-1$ to year t is given by $(Y_t - Y_{t-1})/Y_{t-1}$. To express it in percentage terms, we have to multiply it by 100. Normally, real GDP in a capitalist economy grows over time. The reason may be stated as follows. The stock of capital owned by the capitalists constitutes the source of their income. They want to increase their capital stock so that their income earning potential increases. Hence, investment takes place every year. Investment that takes place in any given year raises the capital stock next year. With the increase in the capital stock, creditworthiness of the capitalists increases. Let us explain.

Borrowers have to borrow from financial institutions such as banks against collateral. A collateral is an asset that the lender can take possession of and sell it to recover his dues if the borrower fails to repay his debt and pay interest on his debt. Capitalists use their stock of capital as collateral. The larger the capital stock of the capitalists, the larger is the collateral they can offer to the

financial institutions and, hence, the greater is the amount of loans they can borrow from the financial institutions to finance their investment. Capitalists increase their earning potential, that is, the potential for earning profit, by making investments. Hence, normally, when they get more loans to finance investment, they step up their investment. Thus, in a capitalist economy, investment grows over time. In terms of Fig. 3.1, The *EE* line goes on shifting upward over time because of the growth in *I*. Accordingly, real GDP grows over time. Workers save a part of their income in every period and their saving adds to their wealth. Hence, workers' wealth increases over time. This brings about an autonomous increase in consumption demand over time. An autonomous increase means an increase that is not induced by an increase in Y. Hence, with the increase in the stock of wealth of the workers, the aggregate consumption demand corresponding to any given Y rises. This also brings about an upward shift of the *EE* schedule. (Work out the impact of an increase in (Br_0/P) on Y—refer to Eq. (3.6)). In a capitalist economy, therefore, in normal circumstances, driven by growth in both investment and consumption demand the *EE* schedule goes on shifting upward over time. Hence, Y grows over time.

Review Questions

1. Name an indicator using which the performance of a capitalist economy is assessed.
2. How is the growth rate of real GDP measured?
3. Why does the real GDP of a capitalist economy grow over time?

3.4.1 Trade Cycles in a Capitalist Economy

Even though real GDP in a capitalist economy grows over time, the growth rate of real GDP fluctuates a great deal. Usually, a capitalist economy goes through alternating phases of high growth rate of real GDP and low growth rate of real GDP. This phenomenon is referred to as trade cycles. The period of high growth rate of real GDP is called a period of boom and the period of low growth rate is termed a period of recession. When a period of recession is very severe, it is called a period of depression. Let us illustrate the phenomenon of trade cycles using the examples of some of the major capitalist countries of the world. Growth rates of real GDP of different capitalist countries of the world are given in Table 3.1

Table 3.1 Annual growth rate of GDP

	1981	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
China	5.2	9.0	10.8	15.2	13.6	8.9	11.7	11.3	4.2	3.9
France	1.1	2.5	1.3	1.5	1.6	2.4	2.6	4.7	4.4	2.9
Germany	0.5	−0.4	1.6	2.8	2.3	2.3	1.4	3.7	3.9	5.3
Greece	−1.6	−1.1	−1.1	2.0	2.5	0.5	−2.3	4.3	3.8	0.0
Ireland	3.3	2.3	−0.2	4.4	3.1	−0.4	4.7	5.2	5.8	8.5
Italy	0.8	0.4	1.2	3.2	2.8	2.9	3.2	4.2	3.4	2.0
Japan	4.2	3.4	3.1	4.5	6.3	2.8	4.1	7.1	5.4	5.6
Spain	−0.1	1.2	1.8	1.8	2.3	3.3	5.5	5.1	4.8	3.8
UK	−0.8	2.1	4.2	2.3	3.5	3.2	5.5	5.9	2.5	0.5
USA	2.6	−1.9	4.6	7.3	4.2	3.5	3.5	4.2	3.7	1.9
	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
China	9.3	14.3	13.9	13.1	11.0	9.9	9.2	7.9	7.6	8.4
France	1.0	1.6	−0.6	2.3	2.1	1.4	2.3	3.6	3.4	3.9
Germany	5.1	1.9	−1.0	2.5	1.7	0.8	1.8	2.0	2.0	3.0
Greece	3.1	0.7	−1.6	2.0	2.1	2.9	4.5	3.2	3.1	4.2
Ireland	1.9	3.3	2.7	5.8	9.6	9.3	11.2	8.9	10.8	10.2
Italy	1.5	0.8	−0.9	2.2	2.0	1.3	1.8	1.6	3.7	1.8
Japan	3.3	0.8	0.2	0.9	1.9	2.6	1.6	−2.0	−0.2	2.3
Portugal	4.4	1.1	−2.0	1.0	4.3	3.5	4.4	4.8	3.9	3.8
Spain	2.5	0.9	−1.0	2.4	2.8	2.7	3.7	4.3	4.5	5.3
UK	−1.2	0.4	2.6	4.0	4.9	2.7	3.1	3.4	3.1	3.8
USA	−0.1	3.6	2.7	4.0	2.7	3.58	4.5	4.4	4.7	4.1
	2001	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
China	8.3	9.1	10.6	10.1	11.4	12.7	14.2	9.6	9.2	10.6
France	2.0	1.1	0.8	2.8	1.6	2.4	2.4	0.2	−2.9	2.0
Germany	1.7	0.0	−0.7	1.2	0.7	3.7	3.3	1.1	−5.6	4.1
Greece	3.8	3.9	5.8	5.9	3.8	3.9	5.8	5.1	0.6	5.7
Ireland	5.8	5.9	3.8	4.4	6.3	6.3	5.5	−2.2	−5.6	0.4
Italy	1.8	0.3	0.2	1.6	0.9	2.0	1.5	−1.0	−5.5	1.7
Japan	0.4	0.3	1.7	2.4	1.3	1.7	2.2	−1.0	−5.5	4.7
Portugal	1.9	0.8	−0.9	1.8	0.8	1.6	2.5	0.2	−3.0	1.9
Spain	4.0	2.9	3.2	3.2	3.7	4.2	3.8	1.1	−3.6	0.0
UK	2.8	2.5	3.3	2.5	3.0	2.7	2.6	−0.5	−4.2	1.5
USA	1.0	1.8	2.8	3.8	3.3	2.7	1.8	−0.3	−2.8	2.5

(*continued*)

Table 3.1 (continued)

	2011	*2012*	*2013*	*2014*
China	9.5	7.8	7.7	7.3
France	2.1	0.2	0.7	0.2
Germany	3.7	0.4	0.3	1.6
Greece	−9.1	−7.3	−3.2	0.7
Ireland	2.6	0.2	1.4	5.2
Italy	0.6	−2.8	−1.7	−0.4
Japan	−0.5	1.8	1.6	−0.1
KoreaRep (South)	3.7	2.3	2.9	3.3
Malaysia	5.3	5.5	4.7	6.0
Portugal	−1.8	−4.0	−1.1	0.9
Spain	−1.0	−2.6	−1.7	1.4
Thailand	0.8	7.3	2.8	0.9
UK	2.0	1.2	2.2	2.9
USA	1.6	2.3	2.2	2.4

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 US dollars

Source: World Bank

during the period 1981–2014. Let us first consider the case of the US. The period 1981–1982 was a period of recession, with the average growth rate equal to 0.35 per cent approximately. The period 1983–1989 was a period of boom with the average growth rate approximately equal to 4.43 per cent. It entered into a recession during 1990–1995, when the average growth rate dropped to around 2.58 per cent. Again, it experienced a boom during 1996–2000, with the average growth rate roughly equal to 4.40 per cent. Finally, from 2001 it entered into a recession with the average growth rate roughly equal to 1.82 per cent. The US is yet to recover from the recession it slipped into in 2001.

Let us now focus on Japan. The period 1981–1991 was a period of boom with the average growth rate roughly equal to 4.53 per cent. However, from 1992 onward it entered into a recession from which it is yet to recover. During 1992–2000, its average growth rate was approximately equal to 1.23 per cent. In the next decade, the average growth rate slid further to 0.82 per cent. It rose slightly to 0.95 per cent during

2010–2014. (Using the data of Table 3.1, compute the periods of boom and recession for other countries yourself).

3.4.1.1 Marx's Crisis Theories and Recessions in Capitalist Economies

Marx's crisis theories can explain why a capitalist economy enters into a recession from a period of boom. Consider a capitalist economy, which is growing over time driven by growth in investment and consumption demand. If in a given period there occurs technological change that reduces living labour requirement of production substantially, the aggregate consumption demand will fall nullifying partly or fully or more than fully the expansionary impact of the increase in investment on aggregate demand. Hence, the growth rate of real GDP will fall. It may even turn negative. Obviously, in such a scenario, for reasons we have already explained earlier, credit supply will fall, investors will be depressed and the growth rate of investment will fall plunging the economy into a recession. Again, if in a given period capacities created in different sectors of production do not match, real GDP will not grow despite growth in investment and consumption on account of shortages of crucial inputs. Actual output in such a period will fall far short of the equilibrium output because of the problem of disproportionality. The expensive idle capacities that emerge saddle the capitalists with losses and, as explained earlier, credit supply falls, capitalists become depressed and investment growth falls bringing about a recession. Marx's theory is, thus, capable of explaining why a capitalist economy transits from a period of boom to one of recession. How does it explain how a capitalist economy transits from a period of recession to that of boom? For that, we have to discuss Marx's theory of primitive accumulation, which refers to the process through which a feudal society gets transformed into a capitalist one. We have to also consider the extensions of Marxian economics made by Hobson, Luxemburg and Lenin to explain imperialism of the capitalist countries.

Review Question

1. How does Marx's theories of crises of underconsumption and disproportionality explain a capitalist economy's transition from a period of boom to one of recession? Explain.

3.5 Primitive Accumulation and the Theory of Imperialism: The Ideas of Hobson, Luxemburg and Lenin

Capitalism grew by forcefully destroying all pre-capitalist forms of societies within its national boundaries. When the scope of such expansion of capitalism within national boundaries was exhausted, capitalist countries conquered and colonized foreign countries, where pre-capitalist modes of production dominated, violently destroyed all pre-capitalist forms of production within those countries and converted them into capitalist ones. Conversion of pre-capitalist societies into capitalist ones by violent means is referred to by Marx as primitive accumulation. The conquest of foreign countries by capitalist countries is dubbed as imperialism. Hobson (1965), Luxemburg (1972) and Lenin (1967) sought to explain imperialism of the capitalist countries. The objective of this section is to explain primitive accumulation and present the theories of imperialism of Hobson, Luxemburg and Lenin. It also shows how primitive accumulation and imperialism create boom conditions in capitalist countries.

3.5.1 Transition from Feudalism to Capitalism: Primitive Accumulation

In the early stages of capitalist development, capitalist countries had a dominant traditional (feudal) segment, which was predominantly agricultural and self-sufficient. The latter means that the traditional feudal sector produced all the goods and services that it needed so that people engaged in that sector were under no compulsion to buy anything from outside. It supplied the capitalist sector with agricultural raw materials. However, as it was self-sufficient, it was in no great need for producing surplus for exchange. With the growth in the capitalist sector, its demand for labour, agricultural raw materials and land grew. Prices of these inputs, as a result, tended to rise squeezing profit in the capitalist sector. For unhindered growth of the capitalist sector and profit, it was necessary for the capitalists to ensure abundant supplies of cheap labour, raw materials and land. The stagnant, self-sufficient traditional sector owned most of the land and engaged in production the majority of the people of the country as serfs. As the traditional sector was self-sufficient, it was not much keen on producing surplus for the market. Hence, it was not possible for the capitalists to secure abundant supplies of cheap labour, land and raw materials with-

out forcibly converting the traditional sector into a capitalist one. The capitalists had in their command enormous amount of wealth and income. They possessed so much resource that they could easily raise a military capable of overthrowing the king. The king, therefore, could not rule without the support of the capitalists. Accordingly, the state power rested with the capitalists and the king simply acted on their behalf. The capitalists used the state power to break down the traditional sector by force. Land was taken away forcibly from the peasants/serfs for the purpose of capitalist farming and setting up of capitalist enterprises. Peasants/serfs were, thus, turned into landless wage labourers. This is how, through the application of brute force and violence, the capitalists using the state power conquered the traditional sector within their own countries and created abundant supplies of land, labour and raw materials for the rapid growth of capitalism. The people who derived their livelihood from the traditional sector and did not depend upon the market to meet their needs either turned into wage labour or capitalist producers and had to purchase their requirements from the market. Moreover, cheapening and easy availability of land, labour and raw materials made investment profitable, made the capitalists buoyant and, thereby, gave a boost to investment. Thus, the brake-down of the traditional sector also created new sources of demand for the capitalist enterprises. This state-aided conquest of the traditional sector by the capitalists for the growth of capitalism is referred to by Marx as primitive accumulation. Thus, the feudal societies made their transition to capitalist societies through the process of primitive accumulation.

We shall now give a very brief historical account of how Europe made its transition from feudalism to capitalism. Capitalism struck its roots firmly in Western Europe in cities and towns in the sixteenth century and grew driven by growth in trade with other parts of Europe and other countries near and distant. The trade and commerce-driven growth in manufacturing capitalist enterprises led to a high rate of growth in demand for agricultural products. Western Europe was predominantly agricultural, feudal and self-sufficient. This segment did not depend on exchange or market for survival. Hence, it was in no great need for producing large amounts of surplus to meet the requirements of the growing capitalist enterprises. The lords were lured by the growing demand and profitability of agricultural production. The problem they faced is that most of the land was under the ownership of the serfs, and they were inalienable from their land. The lords, therefore, devised different ways of carrying out agricultural production themselves in as much land as possible employing the

serfs as labour. The methods employed by them were the following: first, the serfs over and above their own land rented in land from the lords for cultivation. With the increase in the profitability of agricultural production, the lords tried to take back the land, which they previously rented out to the serfs for cultivation. However, the serfs who started enjoying the fruits of growing profitability of agricultural production resisted these efforts of the lords. Peasants organized themselves and revolted against the lords. The lords, however, crushed this rebellion brutally using state power. Peasants were killed in large numbers. This is how the lords reclaimed the land given away to the serfs on rent for cultivation. Second, the lords began the enclosure movement. They started forcibly enclosing (fencing off) the land hitherto used by the serfs for communal grazing and cultivation. Serfs were no longer allowed to use the enclosed land. Serfs were, thus, forcibly evicted from their land. The enclosure movement started in the thirteenth century, reached its peak in the fifteenth and sixteenth century and continued well into the nineteenth century. The evicted serfs became landless wage labour. Finally, many of the serfs were subjected to extreme exploitation by the lords. The part of their produce they were left with after meeting their obligations to the lords was not enough for their subsistence. They had to borrow from the lords for survival. They became eventually so heavily indebted that they were no longer in a position to pay interest on their debts or pay back their loans and, therefore, became bankrupt. They had to give away their land to the lords to settle their debts and became wage labour. This is how the lords acquired the land of the serfs and started capitalist farming and capitalist enterprises on the acquired land with wage labour. This is the process through which Europe made its transition from feudalism to capitalism.

Review Questions

1. What is primitive accumulation? How does it facilitate growth of capitalism?
2. How did Europe make its transition from feudalism to capitalism?

3.5.2 Imperialism

The subjugation of weaker countries by powerful countries is called imperialism. Capitalist countries went on an imperialist spree almost since the inception of capitalism. There was a lull in the late eighteenth and the first half of the nineteenth century. However, during the last third of the nineteenth century and the early part of the twentieth century, there took place a frenzied progress of imperialism. The capitalist countries conquered 93 per cent of Africa by the early twentieth century. France and England conquered 40 per cent and 30 per cent, respectively, while Germany, Belgium, Portugal and Spain took control of the rest. By the late nineteenth century, Asia was completely under the control of the major European capitalist countries. American imperialism was also at its height during this period. By World War I the US had conquered Samoa, Midway Island, Hawaii, Puerto Rico, Guam, the Philippines, Tutuila, Cuba, the Dominican Republic, Haiti, Nicaragua and the Panama Canal Zone. In all, one-fourth of the world's population was subjugated and put under the domination of the capitalist governments of Europe and North America. Why did the capitalist countries conquer other countries? As we have already mentioned, Hobson (1965), Luxemburg (1972) and Lenin (1967) sought to explain it. We shall briefly present their ideas below:

The relentless labour-displacing technological innovations due to the fierce competition among the capitalists to cut costs and raise surplus values, as we have already explained, make capitalist societies prone to gluts (overproduction or excess supply). Hence, normally, a capitalist society operates with substantial excess capacities. Moreover, as a capitalist society grows, more efficient capitalists compete out the less efficient ones and grab their markets. Thus, with the growth in capitalism, the capitalist class shrinks in size and the surviving individual capitalists grow bigger. Production gets concentrated in a few giant corporations (joint stock companies). Moreover, the few capitalists who survive amass enormous amounts of wealth. The financial intermediaries, also owned by the capitalists, make all the savings made by the workers and small businesses available to the capitalists. Capitalists have to find profitable investment outlets for the enormous amount of resources available to them. They also have to resolve the problem of chronic excess capacity by finding new markets for their products.

In the early stages, capitalists, as we have explained in the previous subsection, resolved the problems noted above by devouring forcibly the pre-capitalist societies that existed within the national boundaries of the capitalists'

own countries. However, there came a stage when scope for such expansion was exhausted. With the arrival of this stage, all the factors that hindered expansion of capitalism resurfaced. Capitalists in the possession of enormous amount of resources found that if they invested the resources in their own countries, the resulting increase in the prices of land and labour would squeeze profit. Continuous labour-displacing technological progress also brought about the re-emergence of excess capacity on a large scale. The solution obviously lay in conquering foreign countries where pre-capitalist modes of production dominated and forcibly converting these pre-capitalist countries into capitalist ones. The foreign countries, which became the colonies of the capitalists, had predominantly agricultural and self-sufficient traditional societies. People living in these societies did not depend on the market for their survival. The capitalist conquerors forcibly acquired their land and turned the people living on them into landless wage labourers. Thus, all the conquered people became wage labour and had to depend on the market for survival. Colonization, setting up of capitalist enterprises on the land conquered, procurement of raw materials and so on needed use of huge amounts of armaments, construction of roads, railroads and so on. Purchase of armaments, construction of roads, railroads and so on were financed with taxpayers' money and created huge demand for the products of the capitalist industry resolving the problem of excess capacity. The problem of shortages of land, labour and raw materials was also resolved. Thus, capitalism grew through a process of primitive accumulation initially in the countries where capitalism was born and later through imperialism in other countries.

Review Questions

1. What is imperialism?
2. Why was imperialism necessary for the growth of capitalism?

3.6 Conclusion

In a capitalist economy, workers are under the compulsion to sell their labour power for survival. They have no other way of earning their livelihood. Thus, the bargaining strength of the workers is nil vis-à-vis the capitalists. Taking advantage of the helplessness of the workers, capitalists upon purchasing their labour power take complete control over it and extract from it as much labour as possible. Hence, the amount of labour

extracted from labour powers purchased exceeds the amount of labour the workers get back from the capitalists by the maximum possible amount. Thus, the relationship between the capitalists and workers is one of unequal exchange. The capitalists, therefore, exploit workers and, thereby, earn profit. This Marxian point of view is in sharp contrast with that of the neoclassical theory, which does not recognize the lack of bargaining strength of the workers vis-à-vis the capitalists and regards the relationship between the workers and the capitalists as one of equal exchange. Neoclassical theory, accordingly, portrays a false picture of reality.

Marxian economics is also of the view that capitalists caught in fierce competition with one another invest heavily on R&D and continuously incorporate labour saving technological changes expelling living labour from production. This creates a large and growing pool of unemployed labour, which Marx referred to as the reserve army of labour. This weakens the bargaining strength of the workers further enabling the capitalists to exploit workers more and earn larger profit thereby.

Marx also pointed out that a capitalist economy is crisis-prone. The relentless expulsion of labour from the production process depresses demand and, thereby, leads to the crisis of underconsumption or overproduction. Uncoordinated investments on the part of the capitalists also cause the crisis of disproportionality.

The relentless expulsion of living labour from the production process continuously depresses demand leading to the emergence of growing excess capacity that continuously erodes profit. The capitalists resolve these problems through primitive accumulation and imperialism.

The major propositions derived by Marx conform to reality and help us comprehend it. In Chap. 5, we shall present the macroeconomic performance of the capitalist world and assess the validity of Marxian economics in its light.

References

Hobson, J. A. (1965). *Imperialism: A Study*. Ann Arbor: University of Michigan Press.

Lenin, V. I. (1967). *Imperialism, the Highest Stage of Capitalism*. Moscow: Progress Publishers.

Luxemburg, R. (1972). *The Accumulation of Capital*. New York: Monthly Review Press.

CHAPTER 4

John Maynard Keynes and Stabilization Measures

Abstract This chapter shows how GDP is determined in Keynesian theory and presents Keynes' explanation of trade cycles in a capitalist economy. It also discusses the stabilization measures, fiscal and monetary policies, suggested by Keynes to counter the twin evils of a capitalist economy, namely, recession and inflation.

Keywords Trade cycle • Fiscal policy • Monetary policy

4.1 Introduction

The worst economic crisis in the recent recorded history occurred in the 1930s in the US. It is referred to as the Great Depression. It lasted from 1929 to 1939. It was extremely severe. It caused unemployment of workers and bankruptcies of firms on a very large scale. The miseries it caused to people left asunder the neoclassical assertion that a capitalist economy contains a mechanism that automatically keeps it in a state of full employment. Full employment refers to a state where all the workers who are willing to work at the wage rate prevailing in the market are employed and the productive capacities of firms are fully utilized. Keynes in his book "The General Theory of Employment, Interest and Money" that came out in 1936 modified the neoclassical theory to incorporate rigidities in money wages and uncertainty regarding future returns from physical and financial assets. Once these real-life features are incorporated into the

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neoclassical theory, Keynes (1936) showed that it yields a completely different result. It predicts, echoing Marx, that a capitalist economy does not contain an automatic mechanism that keeps it in a state of full employment all the time. It normally remains stuck in a situation where there exists substantial excess capacity and unemployment of workers. In what follows, we shall present Keynesian theory of determination of aggregate output and employment in a capitalist economy.

4.2 Keynesian Theory of Trade Cycles

Keynes argued that GDP in a market economy is determined by an equation such as (3.6) of Chap. 3 where investment, among others, should be best regarded as exogenously given. The reason he cited is that investment is driven principally by the capitalists' expectations regarding the future course of business and these expectations do not have much of a rational basis. Hence, instead of trying to explain it, one should regard investment as exogenously given. According to Keynes, the problems of unemployment and excess capacity increase and decrease in intensity depending upon whether the capitalists are optimistic or pessimistic regarding the future course of business. When capitalists are optimistic, investment level in any given period is close to its full-employment level (defined as the level that makes the equilibrium GDP equal to its full-employment level) and investment grows at a high rate so that a capitalist economy experiences a boom. (Explain the scenario described above using Fig. 3.1 of Chap. 3.) When capitalists are pessimistic, aggregate investment in any given period is far below its full-employment level and investment grows at a low rate so that a capitalist economy goes through a period of recession.

In other words, Keynes explained trade cycles in terms of capitalists' expectations regarding the future course of business. In his opinion, a capitalist economy experiences boom, when capitalists are optimistic regarding future. When they are pessimistic, a capitalist economy plunges into a recession. Keynes did not try to explain capitalists' expectations. He took them as exogenously given. In contrast with Marx, he did not try to explain why capitalists' expectations swing from one extreme to the other (recall in this context, Marx's theories of crisis, primitive accumulation and the theories of imperialism of Hobson, Lenin and Luxemburg). Keynes attributed the ills of a capitalist society to market imperfections (which refer to the deviations of real-life markets from the perfectly competitive ones) that lead to rigidities in money wages and prices and capitalists'

uncertainties regarding the future prospect of investment. Unlike Marx, he did not trace the roots of the ills of a capitalist society to the compulsion of the capitalists to generate relative surplus value through technological innovation or to the lack of coordination among the capitalists regarding their investment decisions leading to the problem of 'disproportionality'. Nor did he refer to the violent predatory spree of the capitalists to conquer other segments of their own country and other countries of the world to expand their markets and supplies of raw materials and labour to resolve the problems of excess capacity and low profit.

4.3 Keynesian Stabilization Measures

The distinctive contribution of Keynes lies in the fact that his theory suggests ways of countering the problem of recession, which is manifested in a fall in the rate of growth of real GDP and the emergence of large-scale unemployment and excess capacity. In other words, his theory suggests measures by means of which the government can tackle problems such as the crisis of underconsumption or overproduction. These measures are referred to as stabilization measures. Stabilization measures, in their turn, consist of two kinds of policies, namely, fiscal policy and monetary policy.

4.3.1 Fiscal Policy

In what follows, we shall describe these stabilization measures and explain how they work. Governments in every country perform many important activities. Government runs public administration comprising the legislature, executive and judiciary. The objective of public administration is to frame laws, enforce them and settle legal disputes. In addition, the government has to maintain a system of defence to protect the country from foreign invasion. The government also has to build infrastructure such as roads, bridges, flood control facilities, drainage systems, facilities to supply potable water, major irrigation projects and so on. Governments, therefore, have to spend large amounts of money to purchase goods and services including labour services to perform its duties. We shall henceforth denote the government's spending on goods and services by G, which constitutes a major source of demand for goods and services in every economy. The government finances this expenditure in three ways: by taxing people's income, printing money and by borrowing from the people. We assume that the government taxes workers' income and capitalists' income at the

rate t. Denoting the real wage rate by w, the total amount of tax paid, respectively, by the workers and capitalists to the government are given by $t\cdot[w\cdot(l_0/L_0)Y + (Br_0/P)]$ and $t\cdot[(1 - w\cdot(l_0/L_0))Y - (Br_0/P)]$ (recall in this context, Eqs. (3.5) and (3.6) of Chap. 3 and the discussions below (3.5) and above (3.6) explaining these equations.). Hence, their after-tax incomes or disposable incomes, defined as the parts of their incomes that they can use for the purpose of spending on consumption and saving, are given by $(1 - t)\cdot[w\cdot(l_0/L_0)Y + (Br_0/P)]$ and $(1 - t)\cdot[(1 - w\cdot(l_0/L_0))Y - (Br_0/P)]$, respectively. Incorporating the government's expenditure on goods and services and the taxes into (3.6), we rewrite it as

$$\begin{aligned} Y = {} & c_w\cdot(1-t)\cdot\left[w\cdot(l_0/L_0)Y + (Br_0/P)\right] \\ & + c_c\cdot(1-t)\cdot\left[\left\{1 - w\cdot(l_0/L_0)\right\}Y - (Br_0/P)\right] + G + I \end{aligned} \tag{4.1}$$

In (4.1), t and G are the policy variables of the government, that is, their values are determined by the government. Hence, we shall take their values as exogenously given. According to Keynes, as you should be able to recall, investment (denoted by I in (4.1)) should be regarded as exogenously given. In (4.1), therefore, there is only one endogenous variable, Y. We can solve (4.1) for the equilibrium value of Y. The solution is illustrated in Fig. 4.1, where the EE line represents the RHS of (4.1). It plots

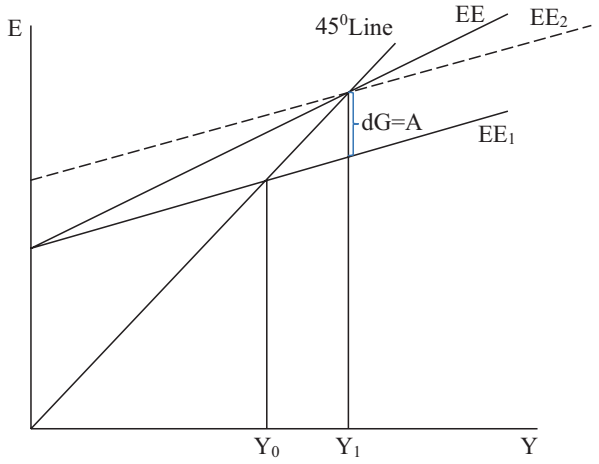

Fig. 4.1 Effect of fiscal policy on GDP

the value of aggregate demand for goods and services given by the RHS of (4.1) and denoted by E against Υ. (Derive the vertical intercept and slope of the EE schedule and explain their meanings.) The equilibrium Υ corresponds to the point of intersection of the EE schedule and the 45° line. It is labelled Υ_1. (Using Fig. 4.1, explain how the capitalists will behave if they produce more or less Υ than Υ_1.) Suppose in the given economy in the given period, there occurs a decline in I_0 so that the EE schedule rotates downward to EE_1. Therefore, Υ falls from Υ_1 to Υ_0 raising the levels of unemployment and excess capacity. This can set in motion the process that culminates in a crisis of underconsumption or overproduction, which we have discussed in detail in Chap. 3. The government can counter this situation in two ways: by raising G by printing money or by lowering t or both. Let us derive the impact of these policies using Fig. 4.1. Suppose the given economy in the given period is in equilibrium with $\Upsilon = \Upsilon_0$. Suppose the government raises G by, say, A by printing money. The EE schedule corresponding to this higher G will lie above EE_1. Let us explain. Following the increase in G by A, the value of aggregate demand given by the RHS of (4.1) will be higher by A corresponding to every Υ. Hence, the EE schedule will shift upward by A. The new EE schedule represented by the dashed line is labelled EE_2. The equilibrium Υ will, accordingly, be higher. Hence, Υ will rise from Υ_0 to its new equilibrium level Υ_1. The process may be described as follows. Following an increase in G, the government seeks to purchase more goods and services from the market. Hence, there emerges excess demand for goods and services by the amount of the increase in G at the initial equilibrium Υ, Υ_0. Accordingly, producers begin to expand Υ. This process of expansion continues until the new equilibrium Υ is reached. Thus, by raising G by a suitably large amount by printing money, the government can raise Υ to its full-employment or full-capacity level. Similarly, as follows from the RHS of (4.1), if the government lowers the tax rate t, the after-tax income (referred to as disposable income) of both the workers and capitalists will increase corresponding to every given Υ. Hence, their consumption expenditure corresponding to every given Υ will increase bringing about an upward shift of the EE schedule. The equilibrium Υ will, therefore, be higher. Υ will, accordingly, rise from its initial equilibrium level to its new equilibrium value. Let us now explain how this change comes about. Suppose in a given period, the economy was initially in equilibrium with $\Upsilon = \Upsilon_0$. The

government now cuts down the tax rate t. It raises consumption spending of both the workers and the capitalists giving rise to an excess demand for goods and services. Hence, capitalists will begin to raise Υ from its initial equilibrium value until the new equilibrium value is reached. Thus, as suggested by Keynes, the government can tackle recession or the crisis of underconsumption or overproduction by raising G financed by printing money or by lowering the tax rate t or by both. These policies of raising the government expenditure financed by printing money or lowering the tax rate are referred to as fiscal policy. The government comprising the legislature, executive and judiciary is the fiscal authority of the country. It is the sole authority to take decisions on at what rate it should tax people's income and how much it should spend on administration, defence and infrastructure. From the above it follows that if a capitalist economy enters into a recession, the government can lift it out of it by making G grow at a suitably high rate. Capitalist economies can be lifted out of recession through the government's fiscal policy.

Exercises

1. Suppose the real GDP of a given economy in a given period is denoted by Υ. The wage cost of producing Υ is 0.5Υ and $B = 0$. The profit that is generated out of Υ is, therefore, $\Upsilon - 0.5\Upsilon = 0.5\Upsilon$. Suppose $c_w = 1$, $c_c = 0.5$, $t = 0.25$, G = Rs. 500 and I = Rs. 900. Write down the equation of the aggregate demand function, which gives the value of aggregate demand corresponding to every Υ. Plot it in a diagram. Derive the equilibrium value of Υ. Indicate the equilibrium value of Υ in a diagram. To attain full employment, Υ has to rise by 500. By how much the government has to raise G (financed by printing money) to achieve full employment? Alternatively, by how much should the government lower the tax rate to achieve full employment?
2. Consider the economy of problem 1. Suppose the economy was initially in a state of full employment. Suppose the labour content of production goes down. As a result, wage cost of production of Υ falls from 0.5Υ to 0.25Υ. What will happen to Υ? What policies can the government adopt to restore full employment?

4.3.2 Monetary Policy

Central bank of a country is the monetary policy authority of the country. Every country has a central bank. To give a few examples: Reserve Bank of India is the central bank of India; Federal Reserve or Fed is the central bank of the US and Bank of Japan is the central bank of Japan. Even though the central bank is owned by the government, it enjoys a high degree of autonomy or independence. The government has the sole authority of printing currency notes and minting coins. This responsibility is delegated to the central bank. The central bank acts as the banker of the government and the commercial banks. The government and the commercial banks hold their surplus funds with the central bank. The central bank also lends. It lends principally to the government and the commercial banks. It lends to the government and the commercial banks by printing currency. The interest rate at which the central bank lends to the commercial banks is fixed by the central bank. This is a policy rate of the central bank. We shall henceforth refer to this central bank's policy rate simply as policy rate. (This policy rate, e.g., is called repo rate in India. It is called the federal funds rate in the US.) At this policy rate, the central bank lends to the commercial banks as much as they demand. The central bank changes this policy rate to bring about changes in its monetary policy. We shall explain this point below. To do this, we have to first describe the activities of the commercial banks.

The commercial banks borrow (take deposits) from people and firms with surplus funds. They also borrow from the central bank. They use the fund received from the depositors and the central bank to lend to those who need loans. The commercial banks normally make interest payments on deposits and meet claims for withdrawal of deposits using the fund they receive from their borrowers by way of repayments of loans and interest payments on loans. In case there is a shortage of funds to meet depositors' claims, banks take loans from the central bank at the policy rate fixed by the central bank. To make profit, banks fix the lending rate (the interest rate at which banks give loans) by applying a mark-up (to be explained shortly) to the deposit rate (the interest rate on banks' deposits) so that the former exceeds the latter. Denoting the lending rate by i and the deposit rate by i_d, the relationship between the two can be shown by means of the following equation:

$$i = i_d + m \tag{4.2}$$

where m is a fixed positive number. It is called the mark-up. The deposit rate, in turn, is normally fixed by the banks by applying a fixed mark-up to the central bank's policy rate. Denoting the latter by i_c, we can show the relationship between the two by means of the following equation:

$$i_d = i_c + m_d \tag{4.3}$$

where m_d is a fixed positive number. It is the fixed mark-up the banks apply to the central bank's policy rate to fix the deposit rate. Usually, investment demand is made a decreasing function of i. This means that the higher the i, given everything else, the lower is the level of investment. The reason may be stated as follows. Investors make investments (purchase material means of production) to make profits in future. Production facilities (such as factories, offices, etc.) bought or built today yield income in future periods. Quite a large part of investment is financed with bank loans. Expected future profit is given by the excess of expected future sales revenue (receipts from sales) over the future cost of production. Interest charges on bank loans taken by the investors to finance their investment constitute a part of the future cost of production. The higher the i, the less is the expected future profit from investments, given investors' expectations regarding future sales revenues and other components of cost of production. Hence, the higher the i, the less is the investors' incentive to invest. This explains why investment may be a decreasing function of i. We are now in a position to explain how the central bank can influence aggregate output and employment by changing its policy rate.

Incorporating the dependence of I on i, we rewrite (4.1) as

$$\begin{aligned} Y = {} & c_w \cdot (1-t) \cdot \left[w \cdot (l_0 / L_0) Y + (Br_0 / P) \right] \\ & + c_c \cdot (1-t) \cdot \left[\left\{ 1 - w \cdot (l_0 / L_0) \right\} Y - (Br_0 / P) \right] + G + I(i) \end{aligned} \tag{4.4}$$

From (4.2) and (4.3) we get

$$i = i_d + m = i_c + m_d + m \tag{4.5}$$

Substituting (4.5) into (4.4), we rewrite it as

$$\begin{aligned} Y = {} & c_w \cdot (1-t) \cdot \left[w \cdot (l_0 / L_0) Y + (Br_0 / P) \right] + c_c \cdot (1-t) \cdot \\ & \left[\left\{ 1 - w \cdot (l_0 / L_0) \right\} Y - (Br_0 / P) \right] + G + I(i_c + m_d + m) \end{aligned} \tag{4.6}$$

Equation (4.6) determines the equilibrium value of Υ, given the values of i_c and other exogenous variables. We show the equilibrium value of Υ in Fig. 4.2, where $EE(i_{c0})$ schedule gives the value of aggregate demand given by the RHS of (4.6) corresponding to different values of Υ, when i_c is fixed at i_{c0} and values of all other variables, which are all exogenous variables, are fixed. The equilibrium value of Υ corresponds to the point of intersection of the 45° line and $EE(i_{c0})$ schedule, when i_c is fixed at i_{c0}. The equilibrium Υ is labelled Υ_0. If i_c is fixed at a higher value, say, $i_{c1} > i_{c0}$, the value of I will be less. Hence, given the values of all other exogenous variables, the value of aggregate demand corresponding to every Υ will be less. Therefore, $EE(i_{c1})$ schedule will lie below $EE(i_{c0})$ schedule corresponding to every Υ. The equilibrium Υ will accordingly be less, when i_c is fixed at i_{c1}. It is labelled Υ_1 in Fig. 4.2.

We are now in a position to explain how the central bank can influence aggregate output and employment in a market economy. Suppose initially i_c was fixed at i_{c1} and Υ settled down to Υ_1. If now the central bank reduces i_c from i_{c1} to i_{c0}, commercial banks will lower deposit and lending rates. This will induce investors to raise their investment demand. They will demand more loans from banks to finance their additional investment demand. The banks will borrow from the central bank to meet this additional demand for bank loans. The increased investment demand for goods and services will create excess demand for goods and services. Producers will, therefore,

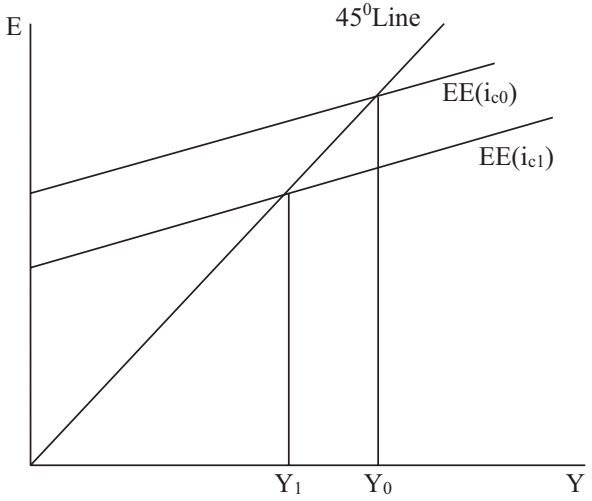

Fig. 4.2 Effect of monetary policy on GDP

begin to raise Υ. This expansion in Υ will continue until Υ reaches its new equilibrium value Υ_0. Thus, the problem of underconsumption or overproduction can be tackled by the central bank by reducing its policy rate.

4.4 Conclusion

Whenever a capitalist economy enters into a recession these days, the government responds to it by adopting the expansionary fiscal and monetary policy. In fact, all through the post-World War II period, governments in the capitalist countries used fiscal and monetary policy regularly to tackle both recession and inflation. However, this leaves unexplained the current prolonged recessions in advanced capitalist economies such as the US, Europe and Japan. To explain that phenomenon, we have to examine the phenomenon in detail. We shall take up that task in the next chapter.

Exercises

1. Suppose the GDP of a given economy in a given period is Υ. The wage cost of producing Υ is 0.5Υ and $B = 0$. The gross profit that is generated out of Υ is, therefore, $\Upsilon - 0.5\Upsilon = 0.5\Upsilon$. Suppose $c_w = 1$, $c_c = 0.5$, $t = 0$, $G = 0$ and $I = 2000 - 100i$, $i_c = 8$, $m = 1$ and $m_d = 1$. Write down the equation of the aggregate demand function, which gives the value of aggregate demand corresponding to every Υ. Plot it in a diagram. Derive the equilibrium value of Υ. Indicate the equilibrium value of Υ in a diagram. To attain full employment, Υ has to rise by 2000 units. By how much the central bank has to lower i_c to achieve full employment?
2. Consider the economy of problem 1. Suppose the economy was initially in a state of full employment. Suppose the labour content of production goes down. As a result, wage cost of production of Υ falls from 0.5Υ to 0.25Υ. What will happen to Υ? What policies can the central bank adopt to restore full employment?

Reference

Keynes, J. M. (1936). *General Theory of Employment, Interest and Money*. London: Macmillan.

CHAPTER 5

Neoclassical Economics, Marx and Keynes, and the Global Financial Crisis

Abstract This chapter shows that all the major capitalist countries in the world today are going through a prolonged phase of recession and seeks to explain this phenomenon. It observes that the recessions in these countries have followed formation and collapse of huge asset price bubbles, which precipitated deep economic crises. Carefully analysing available evidences, this chapter argues that these phenomena have been deliberately caused by the global financial capital (or giant capitalists) in connivance with the central banks and the governments of the countries where the crises have occurred. Keynesian stabilization measures have been deliberately designed in such a manner that recession persists at a desired level indefinitely following the crisis.

Keywords Asset price bubble • Speculative activities • Global financial capital

5.1 Introduction

A capitalist economy normally operates with excess capacity and unemployed labour. In times of recession, the level of excess capacity and the rate of unemployment of workers exceed their respective average levels. The rate of growth of real GDP also falls much below the average. The crisis of underconsumption or overproduction and that of disproportionality can lead to deep recessions in a capitalist economy. Keynes suggested

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measures to tackle recessions. In what follows we shall present the current economic scenario in the capitalist world today to assess the validity of the neoclassical and Marxian theories and the status of the stabilization measures suggested by Keynes.

Following the ascendance of Keynesian theory in economics, formulation of policies by means of which the government can tackle recession has become one of the major objectives of economics. Even though stabilization is a major economic activity of the government in every country of the world, unfortunately in recent times, governments in advanced capitalist countries have failed miserably in tackling recession. We have already cited the cases of Japan and the US. They are going through recessionary phases since 1992 and 2001, respectively. The European countries are also in recession since 2008. Japan slid into its current recessionary phase in 1992 following a crash (very large fall) in its asset prices in 1991. (Assets refer to goods, which yield income in future. Assets may be physical or financial. Examples of physical assets are houses, land, mines, forest, etc. Examples of financial assets are bank deposits, equities, etc.) The current recession in the US started with the collapse in the prices of the equities of dot-com companies in 2001. Dot-com companies refer to the internet companies such as Google, Amazon et al. The recession in the US that started in 2001 took the form of a devastating economic crisis following the collapse of the price of houses in the second half of 2007. Europe also plunged into a severe economic crisis in 2008 with the collapse of real estate prices. It is yet to recover from it. In fact, the recession in advanced capitalist countries instead of receding has now spread to other countries such as India and China. Obviously, the stabilization measures adopted by the recession-hit countries have failed miserably to lift them out of recession.

The objective of this discourse is to identify the cause of the crash in the asset prices and the recessions that followed in the countries mentioned above and to examine why the stabilization policies in the recession-hit countries have failed and how they have affected the welfare of the common man. It argues that available evidences strongly point to two possibilities. First, the crises referred to above have been engineered deliberately by the global financial institutions (owned and controlled by the giant capitalists) with the full connivance of the governments and central banks of the countries where the crises have occurred. Second, the stabilization programmes have been designed in such a manner that they do not lift the economies out of recession completely. Their objective is to contain the crisis only partially so that the economies remain in a desired level of

recession indefinitely. This favours big business houses in many ways. First, labour loses its bargaining strength due to large-scale unemployment caused by recession. This helps the capitalists to depress wages to the minimum possible level. It also enables them to undertake such labour displacing programmes as incorporation of labour-saving technological and managerial changes, outsourcing of jobs to other countries and so on without any resistance. Capitalists can also bring about deterioration of labour standards (consisting in the number of working hours per week, facilities in workplace, work environment, job security, retirement benefits, etc.) and informalization of workforce (consisting in conversion of permanent workers into daily or casual workers without any job security or retirement benefits). Second, the recession gives the monetary authority the excuse it needs to lower interest rates to the minimum possible level so that savers lose out, while the big business houses get loans at the minimum cost. If in the process real rate of return on savings becomes negative, as has happened in many countries including India, see Table 5.1, savings get transferred from the savers to the borrowers. We shall explain the concept of real rate of return on savings shortly. Even though loans become available to the giant capitalists at the minimum possible interest rates, financial institutions in times of recession become extremely cautious as to whom they are lending. More precisely, they raise very sharply the interest rates that they charge on loans given to small and medium producers. This they do because they consider such loans to be extremely risky in times of recession. This helps the giant capitalists to compete out

Table 5.1 Consumer price inflation, deposit rate and real interest rate on savings in India

FY	*CPI(IW)*[a]	*CPI(AL)*[b]	*Deposit rate (%) 1 year*	*Real rate of interest (%)*	
				IW	*AL*
2009–10	18.32	13.25	6	−12.32	−7.25
2010–11	10.03	10.10	8.25	−1.78	−1.85
2011–12	8.41	8.21	9.25	0.84	7.04
2012–13	10.43	10.00	8.75	−1.68	−1.25
2013–14	18.38	17.62	8.75	−9.63	−8.87
2014–15 (Apr–Jul)	6.95	8.05	8.75	1.8	0.7

Source: Reserve Bank of India (RBI)

[a]CPI(IW) = Consumer price inflation for industrial workers, [b]CPI(AL) = Consumer price inflation for agricultural labour

their small and medium counterparts and grab their market share. Thus, recession benefits the giant capitalists in several ways. The chapter is planned as follows: in Sect. 5.2, we shall recount and explain what has happened in the US, Europe and Japan. In Sect. 5.3, we shall describe and analyse the nature of the stabilization programmes that have been adopted. Finally, Sect. 5.4 will contain our concluding observations.

Review Questions
1. What is meant by recession?
2. What is an asset?
3. Why may recession be favourable to big business houses?

5.2 The Crises in the US, Europe and Japan

The last 20 years witnessed the formation and collapse of two massive asset price bubbles in quick succession in the US economy: the bubble in the stock prices of dot-com companies and that in the price of houses. We shall explain the term bubble in the prices of assets shortly. The dot-com bubble formed in 1997 and swelled during 1997–2000. This was a period of boom—see Table 5.2. The dot-com bubble collapsed in 2001, plunging the economy into a recession—see Table 5.2. The housing bubble started in 1998. It gathered momentum since the collapse of the dot-com bubble in 2001 and finally collapsed in 2007 with devastating effects—see Tables 5.3 and 5.4. The whole of the US financial sector went into a deep crisis, with most of the major financial institutions in considerable trouble. The US economy went into a severe recession the like of which it never experienced since its recovery from the Great Depression of the 1930s. (When a recession is extremely severe and prolonged, it is referred to as depression. A very severe recession ravaged the US economy from 1929 to 1939. This severe recession is referred to as the Great Depression in the economic history of the US.) The recession is continuing even today. The US economy is not an exception. All the major crises in recent history the world over are due to the formation and collapse of asset price bubbles. Take, for example, the case of Japan. A massive bubble formed in the prices of its stocks (equities) and real estate in the mid-eighties and collapsed in 1991, drawing the Japanese economy into a deep recession since 1992. Japan is yet to recover from it (see Table 5.2). Collapse of the real

Table 5.2 Annual growth rate of GDP

	1981	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
China	5.2	9.0	10.8	15.2	13.6	8.9	11.7	11.3	4.2	3.9
France	1.1	2.5	1.3	1.5	1.6	2.4	2.6	4.7	4.4	2.9
Germany	0.5	−0.4	1.6	2.8	2.3	2.3	1.4	3.7	3.9	5.3
Greece	−1.6	−1.1	−1.1	2.0	2.5	0.5	−2.3	4.3	3.8	0.0
Ireland	3.3	2.3	−0.2	4.4	3.1	−0.4	4.7	5.2	5.8	8.5
Italy	0.8	0.4	1.2	3.2	2.8	2.9	3.2	4.2	3.4	2.0
Japan	4.2	3.4	3.1	4.5	6.3	2.8	4.1	7.1	5.4	5.6
Spain	−0.1	1.2	1.8	1.8	2.3	3.3	5.5	5.1	4.8	3.8
UK	−0.8	2.1	4.2	2.3	3.5	3.2	5.5	5.9	2.5	0.5
USA	2.6	−1.9	4.6	7.3	4.2	3.5	3.5	4.2	3.7	1.9
	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
China	9.3	14.3	13.9	13.1	11.0	9.9	9.2	7.9	7.6	8.4
France	1.0	1.6	−0.6	2.3	2.1	1.4	2.3	3.6	3.4	3.9
Germany	5.1	1.9	−1.0	2.5	1.7	0.8	1.8	2.0	2.0	3.0
Greece	3.1	0.7	−1.6	2.0	2.1	2.9	4.5	3.2	3.1	4.2
Ireland	1.9	3.3	2.7	5.8	9.6	9.3	11.2	8.9	10.8	10.2
Italy	1.5	0.8	−0.9	2.2	2.0	1.3	1.8	1.6	3.7	1.8
Japan	3.3	0.8	0.2	0.9	1.9	2.6	1.6	−2.0	−0.2	2.3
Portugal	4.4	1.1	−2.0	1.0	4.3	3.5	4.4	4.8	3.9	3.8
Spain	2.5	0.9	−1.0	2.4	2.8	2.7	3.7	4.3	4.5	5.3
UK	−1.2	0.4	2.6	4.0	4.9	2.7	3.1	3.4	3.1	3.8
USA	−0.1	3.6	2.7	4.0	2.7	3.58	4.5	4.4	4.7	4.1
	2001	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
China	8.3	9.1	10.6	10.1	11.4	12.7	14.2	9.6	9.2	10.6
France	2.0	1.1	0.8	2.8	1.6	2.4	2.4	0.2	−2.9	2.0
Germany	1.7	0.0	−0.7	1.2	0.7	3.7	3.3	1.1	−5.6	4.1
Greece	3.8	3.9	5.8	5.9	3.8	3.9	5.8	5.1	0.6	5.7
Ireland	5.8	5.9	3.8	4.4	6.3	6.3	5.5	−2.2	−5.6	0.4
Italy	1.8	0.3	0.2	1.6	0.9	2.0	1.5	−1.0	−5.5	1.7
Japan	0.4	0.3	1.7	2.4	1.3	1.7	2.2	−1.0	−5.5	4.7
Portugal	1.9	0.8	−0.9	1.8	0.8	1.6	2.5	0.2	−3.0	1.9
Spain	4.0	2.9	3.2	3.2	3.7	4.2	3.8	1.1	−3.6	0.0
UK	2.8	2.5	3.3	2.5	3.0	2.7	2.6	−0.5	−4.2	1.5
USA	1.0	1.8	2.8	3.8	3.3	2.7	1.8	−0.3	−2.8	2.5

(*continued*)

Table 5.2 (continued)

	2011	*2012*	*2013*	*2014*	*2015*
China	9.5	7.8	7.7	7.3	
France	2.1	0.2	0.7	0.2	
Germany	3.7	0.4	0.3	1.6	
Greece	−9.1	−7.3	−3.2	0.7	
Ireland	2.6	0.2	1.4	5.2	
Italy	0.6	−2.8	−1.7	−0.4	
Japan	−0.5	1.8	1.6	−0.1	
KoreaRep (South)	3.7	2.3	2.9	3.3	
Malaysia	5.3	5.5	4.7	6.0	
Portugal	−1.8	−4.0	−1.1	0.9	
Spain	−1.0	−2.6	−1.7	1.4	
Thailand	0.8	7.3	2.8	0.9	
UK	2.0	1.2	2.2	2.9	
USA	1.6	2.3	2.2	2.4	

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 US dollars

Source: World Bank

estate bubble at the end of the nineties in the Southeast Asian countries drove them into a severe recession. It is, therefore, extremely important to know how or why bubbles in asset prices form and why or how they collapse. The objective of what follows is to shed light on this issue.

5.2.1 Asset Price Bubble and Speculative Activities in the Asset Market

The endeavour is worthwhile because the existing literature cannot satisfactorily explain why bubbles form in asset prices or why they collapse. The price of an asset contains a bubble when it exceeds the level that is warranted by the true worth of the asset. Let us illustrate with an example. A joint stock company distributes its profit among its shareholders. The amount of profit that is paid to the holder of an equity of the company is called dividend. Suppose a company consistently pays a dividend of Rs. 10 annually on each of the equities it has issued. Also suppose the annual interest rate on bank deposits is 10 per cent. This means that if you keep Rs. 100 in a bank deposit, you will get Rs. 10 as interest every year. In such a

Table 5.3 Percent increase in K^{a}, Υ^{b}, C^{c}, I^{d}, G^{e}, X^{f}, M^{g}, HP^{h} and P^{i} from the previous year

Year	K	Y	C	I	G	X	M	HP	P
1991	62.73	−0.1	0.2	−6.6	1.2	6.6	−0.1		
1992	77.6	3.6	3.7	7.3	0.5	6.9	7.0		
1993	−71.82	2.7	3.5	8.0	−0.8	3.3	8.6		
1994	−9.41	4.0	3.9	11.9	0.1	8.8	11.9	2.83	2.6
1995	151.62	2.7	3.0	3.2	0.5	10.3	8.0	1.11	2.8
1996	18.28	3.8	3.5	8.8	1.0	8.2	8.7	2.83	3.0
1997	140.09	4.5	3.8	11.4	1.9	11.9	13.5	2.73	2.3
1998	31.15	4.5	5.3	9.5	2.1	2.3	11.7	5.66	1.6
1999	−3.05	4.7	5.3	8.4	3.4	2.6	10.1	7.41	2.2
2000	53.33	4.1	5.1	6.5	1.9	8.6	13.0	6.62	3.4
2001	49.34	1.0	2.6	−6.1	3.8	−5.8	−2.8	6.49	2.8
2002	5.05	1.8	2.6	−0.6	4.4	−1.7	3.7	8.76	1.6
2003	−4.89	2.8	3.1	4.1	2.2	1.8	4.5	8.72	2.3
2004	3.07	3.8	3.8	8.8	1.6	9.8	11.4	10.98	2.7
2005	−21.38	3.3	3.5	6.4	0.6	6.3	6.3	10.16	3.4
2006	−2.66	2.7	3.0	2.1	1.5	9.0	6.3	0.86	3.2
2007	−1.62	1.8	2.2	−3.1	1.6	9.3	2.5	−4.64	2.8
2008	212.26	−0.3	−0.3	−9.4	2.8	5.7	−2.6	−10.27	3.8
2009	−34.23	−2.8	−1.6	−21.6	3.2	−8.8	−13.7	−0.5	−0.4
2010	−4.04	2.5	1.9	12.9	0.1	11.9	12.7	−4.68	1.6
2011	77.36	1.6	2.3	5.2	−3.0	6.9	5.5	−2.7	3.2
2012	1.41	2.2	1.5	10.6	−1.9	3.4	2.2	7.28	2.9
2013	17.92	1.5	1.7	4.5	−2.9	2.8	1.1		
		2.4	2.7	5.4	−0.6	3.4	3.8		

Source: US Bureau of Economic Analysis

[a]$K\equiv$ Net inflow of capital, [b]$\Upsilon\equiv$ Real GDP, [c]$C\equiv$ Aggregate real consumption, [d]$I\equiv$ Aggregate real gross investment, [e]$G\equiv$ Government's consumption expenditure, [f]$X\equiv$ Exports, [g]$M\equiv$ Imports, [h]$HP\equiv$ House price, [i]$P\equiv$ Consumer price

scenario, the equity of the company cannot sell at more than Rs. 100, that is, if you own one equity of the company and if you want to sell it, you cannot sell it at more than Rs. 100. Let us explain. If you offer to sell it at more than Rs. 100, no one will be willing to buy it. They will expect to get Rs. 10 after 1 year if they buy the equity. They will get Rs. 10 after one year if they keep Rs. 100 as bank deposit. So, why will they pay more to buy the equity? Therefore, if the equity sells at a price higher than Rs. 100, say at Rs. 300, then it contains a bubble and the size of this bubble is Rs. 200. Again, the excess of the price of a house from its cost of production plus a reasonable profit margin is referred to as bubble. Thus, if the rate of inflation

Table 5.4 House price inflation, consumer price inflation and interest rates in the US

Year	*HPI*[a]	*CPI*	r[b]	R[c]	Y[d]
1994	2.83	2.6	7.15	8.35	4.0
1995	1.11	2.8	8.83	7.95	2.7
1996	2.83	3.0	8.27	7.8	3.8
1997	2.73	2.3	8.44	7.6	4.5
1998	5.66	1.6	8.35	6.94	4.5
1999	7.41	2.2	8.00	7.43	4.7
2000	6.62	3.4	9.23	8.06	4.1
2001	6.49	2.8	6.91	6.97	1.0
2002	8.76	1.6	4.67	6.54	1.8
2003	8.72	2.3	4.12	5.82	2.8
2004	10.98	2.7	4.34	5.84	3.8
2005	10.16	3.4	6.19	5.86	3.3
2006	0.86	3.2	7.96	6.41	2.7
2007	−4.64	2.8	8.05	6.34	1.8
2008	−10.27	3.8	5.09	5.04	−0.3
2009	−0.5	−0.4	3.25	4.69	−2.8
2010	−4.68	1.6	3.25	4.46	2.5
2011	−2.7	3.2	3.25	3.66	1.6
2012	7.28	2.9	3.25	3.98	2.2
2013			3.25	0.31	1.5

Sources: HPI has been computed from the house price index published by Freddie Mac; data of CPI and percentage change in real GDP are taken from the US Bureau of Economic Analysis; data on interest rates have been taken from the Board of Governors of the Federal Reserve System

[a]House price inflation; [b]average majority prime rate charged by banks on short-term loans to business, [c]contract rate on 30-year fixed-rate conventional home mortgage commitments; [d]percentage increase in real GDP from the previous year

in house prices exceeds the rate of inflation in the general price level, there is a growing bubble in house prices, as they are increasing at a faster rate than the cost of production of houses. Given the enormous importance of asset price bubbles in perpetrating crises in different countries the world over, it is of paramount importance to know how bubbles in asset prices form and how they collapse. The existing literature on US house price bubble attributes the formation of the house price bubble to the conditions prevailing in the credit market. One common explanation is that easily available credit led to low real interest rates that boosted housing demand (Himmelberg et al. 2005; Taylor 2009; Khandani et al. 2009). Let us explain this point. If the rate of house price inflation exceeds the rate of interest at which loans are available to buy houses, there emerges opportu-

nities for gains from the purchase and sale of houses. The rate of house price inflation is measured in the following manner. Suppose the average price of houses in periods t and $t + 1$ are given by P_{ht} and P_{ht+1} respectively. Then, the rate of house price inflation from period t to period $t + 1$ is given by $(P_{ht+1} - P_{ht})/P_{ht}$. To express it in percentage terms, we multiply it by 100. To illustrate with an example, suppose the rate of house price inflation from 2014 to 2015 in India was 10 per cent and the average price of houses in India in 2014 was Rs. 10 lakh. It means that from 2014 to 2015 the average price of houses increased by 10 per cent of Rs. 10 lakh. If the interest rate at which loans were available for purchasing houses in 2014 were 5 per cent, people could make large profit by buying houses in 2014 with loans and selling them off in 2015. Such a line of activity would have yielded on the average a profit of Rs. 50,000 per house after paying back the loan along with the interest charges. Therefore, if in a given period the rate of house price inflation exceeds the interest rate on housing loans by a perceptible amount and people speculate (expect) that the scenario will persist in future, they may take loans in the given period to buy houses to make gains in the future period. This kind of purchases and sales (or activities) is called speculative purchases and sales (or speculative activities). Gains from speculative activities are referred to as speculative gains. If the scenario described above induces a large number of people to engage in speculative purchase of houses to make speculative gains, the rate of house price inflation will increase, fulfilling people's expectations. This might encourage more people to do the same and, as a result, the rate of house price inflation may go on increasing over time. In such a situation, the rate of house price inflation will exceed the rate of inflation in the average price of all goods and services. The latter inflation rate is a measure of the rate of increase in the cost of building houses. When the rate of house price inflation exceeds the rate of inflation in the average price of all goods and services, the price of houses increases at a faster rate than the cost of production of houses. In this scenario, the price of houses contains a growing bubble.

Review Questions

1. What is meant by a bubble in asset prices? Explain with an example.
2. What is meant by a bubble in house prices?
3. Explain how credit market conditions can induce speculative purchases and sales of assets?
4. How do speculative activities give rise to bubbles in house prices?

5.2.2 *Explanation of the Formation and Collapse of the House Price Bubble in the US*

From the data given in Table 5.4 it seems that the credit market explanation of the formation of bubbles cited above, which constitutes the only major explanation of the formation of house price bubbles in the US, is untenable for the following reasons. First, if we compare the rates of house price inflation and the consumer price inflation (CPI), which closely measures the rate of inflation in the general price level, we find that they were more or less equal till 1997 (Table 5.4). The former jumped up and exceeded the latter by a substantial amount in 1998. Since then the gap between the two went on increasing until the collapse of the house price bubble in 2007. However, from 1997 to 1998, as should be clear from the data on interest rates (Table 5.4), there did not take place any softening of credit market conditions, that is, there did not take place any fall in the interest rate. In fact, credit market softened only after 2001, when the dot-com bubble collapsed and the Fed cut down its policy rates to tackle the ensuing recession. Thus, the remarkable jump in (more than doubling of) the rate of house price inflation from 1997 to 1998 and its sustenance at such high levels in the next three years (1999, 2000 and 2001) in the face of unchanged inflation rate and interest rates cannot be in any way linked to the softening of credit market conditions. During these four years, 1998, 1999, 2000 and 2001, the rate of house price inflation and the interest rates were so close to one another that they did not warrant any speculative purchase of houses, let alone mass speculative exuberance (see Table 5.4). Such opportunities emerged starkly since 2002, when interest rate declined substantially, while the rate of house price inflation remained at its high level (Table 5.4). Such a situation continued until 2006. Thus, the scope for large gains from the speculative purchase of houses with loans and their sale at a later date opened up and it came into the view of the people only in 2002. Thus, the mass exuberance for the speculative purchase of houses could have started only after that. How does one explain then the remarkably high rate of inflation in house prices during 1998–2001. The only plausible explanation of this phenomenon is that the jump in the house price inflation was caused by those speculators who foresaw the marked decline in the interest rate that would take place in 2002. They kept the rate of house price inflation at a high level for some years preceding 2002 so that once the rate of interest falls, ordinary people could be made to clearly perceive the scope for large speculative gain from house purchases through the media. This was done to lure the common people to engage in speculative purchase of houses with loans. To raise the rate of house price inflation substantially and

to sustain it at high levels for a few years, the speculators had to spend huge sums purchasing houses on a massive scale. If interest rate had not gone down and the common people were not gripped by a speculative frenzy, the speculators would have been saddled with a very large stock of houses and, thereby, would have suffered very large losses. They could sell off their stock of houses at a profit only if the common people were caught in a mass speculative frenzy. Clearly, they were absolutely certain that interest rate would go down in near future. They could be certain of this if and only if they were capable of bursting the dot-com bubble at will and, thereby, drive the US economy into a recession. (We shall explain shortly why an economy enters into a recession following the burst of an asset price bubble). They knew that following the onset of recession, the Fed would reduce interest rates substantially. This means that these speculators had the capability of creating bubbles in asset prices and bursting them and they created the dot-com bubble and had it burst in 2001. They knew that following the collapse of the bubble, the economy would enter into a recession and the Fed would reduce policy rates to contain it. These speculators, obviously a group of large financial institutions (controlled by giant capitalists) with tremendous financial might, purchased dot-com stocks and created the dot-com bubble and when prices of dot-com stocks reached their peaks riding on public speculative frenzy, offloaded their stock and burst the bubble at a huge profit. These speculators were also responsible for the formation and collapse of the house price bubble. This line of thought seems to be the only explanation for the remarkable jump in the rate of house price inflation in 1998 and its sustenance at such a high level in the next three years. Let us now briefly sum up how, in our view, the house price bubble formed, swelled and finally collapsed. A group of giant financial institutions under the control of the giant capitalists directly or through their agencies started buying houses on a massive scale since 1998. As a result the inflation rate in house prices, which was more or less the same as the inflation rate in the general price level until 1998, more than doubled in 1998 and remained at this high level since then, while rate of inflation in the general price level remained unaffected. In the four years, 1998, 1999, 2000 and 2001, even though the rate of house price inflation was quite high, it was more or less equal to the interest rates prevailing in the market. There was, therefore, no scope for making any gain from speculative purchase and resale of houses during these four years. Opportunities for large speculative gains from speculative purchase of houses opened up in 2002 when following a rate cut by Fed, interest rates went down substantially below the inflation rate in house prices. The media also controlled by the giant capitalists brought

this to the notice of the people and created a strong impression that the scenario would continue in future. The financial institutions also under the control of the giant capitalists made credit available in plenty to whoever wanted loans for making speculative purchase of houses. The masses took the bait and started borrowing heavily for making speculative purchase of houses. As a result, the rate of inflation in house prices rose further above the interest rate fulfilling and reinforcing expectations and hopes of the people. Thus, those who were already into the speculative game felt emboldened to increase the scale of their speculative activities, while new people joined the fray. Thus a mass speculative euphoria began and started swelling pushing up the rate of house price inflation up further and further. Why did, then, the house prices suddenly crash putting an end to this scenario and saddling the masses with stupendous losses? We shall now explain this point. As soon as the speculative frenzy began, the institutions, which initially created the bubble, started selling from their stock making large profits. However, they controlled their sales in such a manner that the rise in the house price inflation rate continued unabated for some time. Then, at an opportune moment, they dishoarded the remaining part of the stock at a huge profit bringing about a sudden large fall in the house price inflation rate. Suddenly, the spectre of the house price inflation rate going below the interest rate loomed large and the masses, who were heavily indebted, became afraid of making very large losses and going bankrupt. They, therefore, rushed to sell their houses as quickly as possible en masse to avoid losses or minimize losses. This brought about the crash in house prices driving the masses into bankruptcy and the economy into a deep recession. Why does an economy go into a recession when a speculative asset price bubble collapses? We shall explain this point shortly.

Review Questions

1. Why is the credit market explanation of the formation of the house price bubble untenable in the context of the US economy?
2. How could the speculators who were responsible for the doubling of the rate of house price inflation in 1998 and its sustenance at such high levels in the next three years be sure that the interest rate would go down in future? (If they were not certain, they would not have spent such large sums on houses. If interest rate had not gone down, opening up substantial opportunities for speculative gains, they would have been saddled with huge losses.)

5.2.3 Nexus Between the Global Financial Capital and the US Government and Fed

Obviously, if common people perceived the bubble and made frenzied contribution to it before being its victim, it definitely came to the notice of the US government and Fed and they willingly allowed the bubble and the frenzy to continue, even though they pretended to have been caught unawares after the bubble had collapsed, plunging the economy into a deep crisis. The pretence is all the more stark, since what happened in the US is nothing new. Such events happened earlier in Japan at the beginning of the nineties, in the East Asian countries in the late nineties and also in many other places with devastating effects. Europe's experience was more or less the same as that of the US. Thus, the conclusion that seems unexceptionable is that the global financial capital (comprising the large financial institutions (owned and controlled by giant capitalists) that operate globally) in connivance with the governments of the major capitalist countries of the world is perpetrating crises in country after country through its operations in the asset markets. (It should be noted here that when a financial institution makes losses or becomes bankrupt, its directors [the persons who run the company] need not necessarily make any losses.) Financial institutions are joint stock companies where liabilities of the owners are limited to the value of the shares of the company they hold. This means that if a joint stock company suffers losses and becomes bankrupt, a shareholder's only loss is the loss in the value of his shares. He is under no obligation to pay back the loans of the company along with the interest. Financial institutions hold one another's shares. They buy one another's shares with the money common people deposit with them. More than 50 per cent of the shares of a financial institution may be held by other financial institutions. It is, therefore, quite possible that the financial institutions vote one another's promoters (who initially held more than fifty percent of the shares of the financial institutions they promoted and, thereby, controlled) on to the boards of their respective financial institutions. In such a scenario, the directors who run the company may not hold any share in the company. Let us illustrate this point with an example. Suppose two giant capitalists A and B promoted two financial institutions F1 and F2, respectively. Suppose initially they held more than fifty percent of the shares of their respective companies and, thereby, controlled them. Now, A (B) makes F1 (F2) buy B's (A's) shares with the depositors' money and let B (A) remain the director of F2 (F1). Thus,

A and B will be in control of their respective companies without holding any of their shares. Thus, it is quite likely that, when a financial institution becomes bankrupt, it is not its directors who lose; it is the ordinary people who kept their money with the financial institution lose their savings. Directors of financial institutions draw astronomical sums in salaries and bonuses at the expense of the ordinary shareholders of the financial institutions.

Review Questions

1. Do evidences point to a close nexus between the rogue speculators and the government and the central bank of the US.
2. Directors of a financial institution may not hold any of its shares. Explain this statement.

5.3 Collapse of an Asset Price Bubble and Recession

When the asset price bubble bursts and asset prices crash, the economy plunges into a deep recession. Let us explain why. The people who borrowed to purchase the assets for making speculative gains in the expectation that the asset prices will rise further at a high rate suffer huge losses with the crash in the asset prices. They become bankrupt and fail to pay back their loans. The financial institutions that extended loans to them get into financial troubles themselves on account of large-scale default on the part of the borrowers. They on their part fail to service their debts or meet depositors' claims. Financial institutions are interlinked in the sense that every financial institution holds equities and bonds issued by other financial institutions. Hence, if equities and bonds issued by some financial institutions become junk, other financial institutions suffer losses too. Thus, troubles in one segment of the financial sector produce a cumulative effect and drive the whole sector into deep trouble. When financial institutions become bankrupt, people and firms lose the savings held with them. When financial institutions face troubles meeting people's and firms' claims on them, people and firms are threatened with the possibility of losing their savings. They become panicky and depressed. There takes place runs on financial institutions, which drive them to bankruptcy. People in such a scenario stop lending to the financial institutions. Financial institutions, in turn, lose their ability to lend. Thus, supply of funds to the

capitalists dries up. Hence, investment falls drastically. People who lose their savings or face the possibility of losing their savings reduce their consumption expenditure as much as possible to rebuild their savings. Following the drastic decline in investment and consumption demand, aggregate output and employment fall by a large amount. This leads to a large increase in excess capacity and unemployment, which, in turn, brings about a large decline in firms' profit or saddles them with losses. The increase in the unemployment rate and the decline in firms' profit deepen the gloom and lead to further cuts in investment and consumption spending. This also brings about an increase in the default rates, aggravating the financial institutions' woes. Thus, there takes place a cumulative decline in aggregate output and employment. This is how an economy gets into a deep recession following the collapse of an asset price bubble.

Review Question
How does a collapse of the asset price bubble lead to recession?

5.4 Stabilization Measures

The government seeks to counter the recession mainly through its conventional and unconventional monetary policy. Let us first explain what the latter means.

5.4.1 Unconventional Monetary Policy

Financial institutions such as banks, insurance companies and so on borrow funds from the people with surplus funds in the form of deposits, insurance premia and so forth. They use the fund thus received to lend to the people who need funds to finance investment and consumption. They also buy equities, bonds and so on. The loans given and the equities and bonds in the possession of the financial institutions are their assets. These assets yield income, using which the financial institutions pay interest on deposits or settle insurance claims. When assets of financial institutions become junk and stop yielding any income, the financial institutions become bankrupt. They fail to meet depositors' or insurance policy holders' claims. The unconventional monetary policy consists in the government and the central bank purchasing from the troubled financial institutions all the assets (consisting of loans, equities, bonds etc.), which have become junk at remunerative prices

so that losses of the financial institutions are fully compensated for. Through this measure the financial institutions are enabled not only to meet the claims of the depositors/policy holders but also to acquire new good assets. This is how the financial institutions and the financial sector are kept from collapsing. The unconventional monetary policy turns the financial institutions healthy and, thereby, restores people's and firms' confidence in them. Let us illustrate the unconventional monetary policy with an example. Consider a bank which had a total outstanding loan of Rs. 1 crore at the beginning of a given period. It was to yield an annual interest income of Rs. 10 lakh in the given period. However, a crisis struck the economy in the given period and the borrowers of the bank became bankrupt. Hence, the bank's outstanding loan became bad/junk. The borrowers were in no position to repay the loans or pay interest on the loans. In this situation, the bank would also fail, that is, the bank would fail to pay interest on its deposits or meet the depositors' claim for withdrawal. If the central bank had followed an unconventional monetary policy in the given period, it would have come to the rescue of the bank. It would have bought the bad debt of Rs. 1 crore of the bank with Rs. 1.1 crore. This would have fully compensated the bank for its loss. The bank would have used Rs. 1 crore to acquire new good assets.

Review Question

1. What is unconventional monetary policy of the central bank? How does it restore the financial health of the financial institutions?

5.4.2 Conventional Monetary Policy

The conventional monetary policy consists in the central bank taking measures so that the interest rates fall substantially. The objective is to reduce the cost of borrowing so that investment and consumption demand get a boost. However, the efficacy of this policy in giving a boost to demand and, thereby, to the economy is suspect for the following reasons. First, following the collapse of the asset price bubble, when loan default and bankruptcy occur on a large scale, financial institutions become extremely cautious as regards to whom they are lending. The risk premium rises sharply. This means the following. Even though interest rates on risk-free loans fall significantly, these interest rates are faced by only the large businesses, which have substantial business standing. For the small and medium enterprises, however, the interest rates instead of going down rise steeply, since financial institutions con-

sider it extremely risky to lend to these enterprises in times of trouble (see in this connection Bernanke (1983) and Mishkin (2009, 2011)). Moreover, in times of recession characterized by a drastic shrinkage in demand, large-scale excess capacity emerges, saddling the producers with large losses. This depresses investor sentiments. In such circumstances, a cut in the interest rate is unlikely to induce the investors to raise investment demand, as large parts of the existing capacities remain unutilized. In such a scenario, it is enormously risky to borrow to create new capacities, since the chance of the new capacities to remain unutilized for long periods to come is very high. Let us illustrate the argument with an example. Consider a hotel where on the average 20 per cent of the rooms remain vacant. Now, a recession strikes and 50 per cent of the rooms fall vacant. It will saddle the owner with losses. He will have difficulty servicing his existing loans. In such a scenario, if the interest rate goes down, he will definitely not take the risk of taking fresh loans to build more rooms or a new hotel, as the chance of these new rooms or hotel remaining unoccupied for long is very high. However, he will have to go on paying interest on the loans taken to build the rooms or the hotels. He will, therefore, consider it sensible to wait till the economy recovers.

Review Question

1. What is conventional monetary policy? Why is it unlikely to give a boost to investment demand?

Recessions are also characterized by large-scale unemployment. Moreover, the crash in asset prices inflicts on households large losses. They lose the savings they invested in the risky assets, whose prices have crashed, or in the assets of the bankrupt financial institutions, which the central bank or the government did not rescue. They also lose the savings, which they had to use to repay their debts. Both these factors, the loss of jobs and that of savings, make the consumers depressed and pessimistic regarding the future. They become afraid of further shrinkage in employment in future. In such a scenario, consumers are unlikely to raise their consumption demand following a decline in the borrowing cost. They are more likely to save more to tide over phases of future unemployment, which they apprehend. Thus, the conventional monetary policy is unlikely to give any boost to demand. However, it hurts the already badly hit savers by reducing the return on their savings substantially for the benefit of the large business houses.

Review Question

1. Why is unconventional monetary policy unlikely to give a boost to consumption demand?

5.4.2.1 Empirical Evidences Against Conventional Monetary Policy

Data given in Table 5.5 strongly suggest that conventional monetary policy cannot make any contribution to growth. During 1994–2004, the average growth rate of real GDP in the US was quite high (4.0 per cent), but so were both short-term and long-term interest rates. This implies that high interest rates do not discourage growth. They do not make the investors depressed. Following the slump in the growth rate in 2001, interest rates were reduced immediately. However, during the seven-year period 2001–07, the average growth rate was only 2.5 per cent, which was substantially below what the US economy achieved in the previous seven-year period despite much higher interest rates. The reduction in interest rates of course led to a swelling of the house price bubble, which deepened the recession into a full-fledged crisis. During 2008–14, the average growth rate was only 0.8 per cent even though interest rates were cut drastically in 2009. Thus, investors did not feel enthusiastic in the six years that elapsed following the cut in interest rates. This clearly shows that conventional monetary policy is completely ineffective in restoring investor confidence. It only hurts the savers and facilitates formation of bubbles without doing any real good to the economy. In times of recession an increase in the government's investment in socially necessary areas financed by money creation is the best way of countering recession. We explain this point below.

Table 5.5 Average growth rate of real GDP and average interest rates

Year	*Average growth rate*[a]	*Average prime lending rate of banks*	*Average interest rate on 30-year mortgage contracts*
1994–2000	4.04	8.32	7.73
2001–07	2.5	6.03	6.25
2008–13	0.8	4.27	4.64

Source: Computed from the data given in Table 5.4

[a]Simple arithmetic mean of the year-on-year growth rates of GDP

Review Question

1. Do empirical evidences give any indication that low interest rate is conducive to growth?

5.4.3 Appropriate Policies for Tackling Recession

The policy that works certainly in times of recession is a specific fiscal policy which consists in the government raising its expenditure and financing it by money creation. If in times of recession the government raises its investment in areas where it is socially necessary to invest on the required scale and finances it by borrowing from the central bank, recession will disappear and the economy will come back to health. The policy works in two ways. First, the expenditure made by the government produces a cumulative expansion in output and employment. The producers meet the additional demand for goods and services created by the government by producing additional goods and services. Thus, these producers get the money spent by the government. They keep the profit and spend the rest to pay the workers and others. The point is that the money spent by the government accrues to the people as income, which has the following four components: wages, rent, profit and interest. People spend a part of this additional income to buy more goods and services. So, more goods and services get produced. Thus, this process of increase in production, income and spending continues. Second, the part of the additional income that people do not spend to purchase goods and services goes to the financial institutions (banks etc.), as people invest their savings in the assets of the financial institutions. The financial institutions, in turn, use this money to extend credit. Thus, along with the expansion in production and income, supply of credit in the economy also increases. The cumulative expansion in output and employment may dispel the pessimism of the investors and turn it into optimism. The investors may start feeling enthusiastic regarding making new investments. Thus, demand for additional credit may also emerge. This is how the government by raising its spending in socially useful areas on the required scale and financing it by money creation can lift the economy out of recession. Since the additional spending is financed by creating money, it does not increase government's debt burden. Since the central bank is a part of the government, borrowing from the central bank does not add to the government's outstanding debt.

Review Question

1. What is the best strategy of countering a recession perpetrated by the collapse of an asset price bubble?

5.4.4 Inappropriate Policies Adopted in Recent Periods for Countering Recession

The policy delineated above is never adopted by the governments these days. To make this policy out of bounds for the government, in almost all the countries in the world today (including India), the central bank, which is the monetary policy authority and undertakes monetary policy, and the government, which is the fiscal policy authority and undertakes fiscal policy, have been made independent of one another. So, if the fiscal policy authority wants to raise public investment and seeks to finance it by borrowing from the central bank, the latter can refuse to lend. Therefore, the common practice today is that the governments, when they raise their expenditure to counter recession, finance it by borrowing from the market. Such borrowing raises the government's stock of debt. There is now a consensus among policy makers that this kind of policy can only be adopted in the very short run as an emergency measure. As soon as the emergency is over, the policy is to be reversed, that is, as soon as the crisis is taken care of, the government should lower its expenditures and raise the tax rates so that there emerges surpluses in the government's budget and the government should use these surpluses to reduce its debt until it reaches its initial level. The reversal of the expansionary fiscal policy (or what is alternatively referred to as fiscal stimulus) has to be done as soon as the emergency is over; it does not matter if the economy is still in recession and a strong stimulus to demand for goods and services is still necessary to lift the economy out of recession. Thus, today's policy makers regard fiscal policy as a measure to be used only in an emergency to prevent a recession from growing beyond a tolerable level and not for lifting an economy out of recession completely. Note that if expansionary fiscal policy, that is, the policy of raising government expenditure and lowering of tax rates so that demand for goods and services increases, is reversed before the recession is over, demand will shrink prematurely and the recession will deepen. This reversal of fiscal stimulus to demand is recommended for the following reasons. It is argued that the government's borrowing adds to the government's debt and raises the government's

interest payments. Accordingly, if the government continues with expansionary fiscal policy, interest charges on the government's debt will grow and it may start taking up larger and larger share of the government's income, forcing the government to spend smaller and smaller share of its income on essential items, much to the detriment of the society. This argument is flawed for a number of reasons. However, given the shortage of space and time, we shall not dwell on them here.

Let us now sum up our above discussion before proceeding further. Following the onset of a crisis perpetrated by global financial institutions, governments use three major instruments to counter them, namely, unconventional monetary policy, fiscal policy and conventional monetary policy. The first two are emergency measures. The first one restores the financial institutions back to health, while the second one gives a boost to demand. Propelled by these two policies, output and employment begin to increase and the economy is put on a path of recovery. But as soon as the crisis is averted and the economy begins to experience positive rates of growth, the fiscal stimulus is reduced and regulated in such a manner that the economy does not recover fully from recession but remains in a desired level of recession indefinitely. The conventional monetary policy, which consists in reducing borrowing cost substantially, cannot give any stimulus to growth for reasons we have already explained. With the reduction of fiscal stimulus, the optimism that began to awaken in investors and consumers turns into pessimism again. As we mentioned earlier, in the face of underutilized production capacities and unemployment on a large scale, low borrowing cost cannot induce despondent investors and consumers to borrow to create new capacities or to increase consumption spending. Thus, the objective of the stabilization programmes today is not to lift a crisis-hit economy out of recession, but to avoid the worst that could have happened and keep the economy in a desired level of recession indefinitely. Why does the government do this? We shall address this question below.

Review Question

1. What is the objective of stabilization programmes today? Explain.

5.4.5 *Motivation for Keeping an Economy in a Desired Level of Recession Indefinitely in the Post-Crisis Period*

We shall argue here that the economy is kept in recession deliberately, as such a scenario benefits the large business houses at the expense of the common man. Let us explain. The reasons, in fact, are several. First, in times of recession, financial institutions become extremely cautious as regards to whom they are lending. There takes place what Bernanke et al. (1996) calls 'flight to quality' of loans. Thus, while credit becomes available to the large business houses at risk-free interest rates, which the conventional monetary policy pushes down to the lowest possible level, the cost of credit to the small and medium enterprises rises sharply. Thus, the latter lose out in competition to the former, who as a result succeed in raising their market shares substantially. Second, the savers get the lowest possible return on their savings, while the large business houses grab the savings at the lowest possible interest rate. While the savers are denied a fair rate of return on their savings, which renders a valuable service to the borrowers, the large business houses gain at the expense of the savers. In fact, the real rate of interest on savings may become negative, as the nominal rate of interest is pushed down to the lowest possible level. This happens when the rate of inflation exceeds the nominal rate of interest. When the real rate of interest is negative, the savers begin to lose their savings to the large business houses. If the real interest rate remains negative long enough, the savers will lose all their savings. Let us explain this point a little. Suppose the nominal rate of interest on savings is 8 per cent, while the rate of inflation is 10 per cent. This means that, if you keep Rs. 100 in a bank deposit today, you will get after 1 year Rs. 108. But to buy as much goods as Rs. 100 can buy today, you will need Rs. 110 after 1 year. So, the real value of your savings or the purchasing power of your savings goes down over time if the real interest rate is negative. This also implies that the borrowers pay back in real terms less than what they borrowed. Thus, the loss in the real value of savings accrues as gains to the big business houses, who are the principal borrowers. Note that the real interest rate has been negative in India in recent years (see Table 5.1). Finally, recessions are characterized by large-scale unemployment of labour. Workers lose bargaining strength in such a scenario. Big business houses take advantage of this situation to dilute labour standards, pressurize the government to pass laws that take away the benefits of workers such as job security, retirement benefits, ceiling on the length of work time and so on. Big business houses also face less resistance in incorporating

labour-displacing technologies or having their jobs outsourced. Big business houses, therefore, get an opportunity to increase both absolute and relative surplus value. Thus, recession benefits a miniscule section of the richest people of the society at the expense of everyone else.

Review Question
Why are stabilization programmes designed in such a manner that a crisis-hit economy remains in a state of recession indefinitely?

From the above discussion it is clear that global business houses in connivance with the governments in advanced capitalist countries have perpetrated crises in their own countries and have designed the stabilization programmes in such a manner that these economies do not recover fully and remain in a desired level of recession indefinitely. The purpose is to oust the small and medium enterprises, and rob workers of their savings and all their bargaining strength. This ensures that the process of generation of absolute and relative surplus value goes on unhindered. In advanced capitalist economies, trade unions have become a relic of a bygone era. Global business houses have won the class war and workers are completely at their mercy. Capitalism is roaring. However, capitalism is anti-people and, therefore, anti-civilization. The sole objective of capitalism is to establish the jungle rules: 'might is right' and 'survival of the fittest'. In capitalism everything is uncertain: your job, the fate of the firm you work in, your savings, the wages you receive, the interest on your savings, prices of the goods you buy relative to the wages you get and so on. In sum, capitalism breeds neurosis. In capitalism, to what extent you can develop your human resources and, thereby, your earning capacity depends crucially on your purchasing power. Hence, capitalism perpetuates and increases inequality. Providing the masses with a peaceful and comfortable living is not an objective of capitalism. Developing and utilizing the human resources of a society fully is not an objective capitalism. In short, capitalism is the antithesis of all that civilization stands for. Capitalism is ideal only for those who have the might to control it and make it work in their favour. Capitalists have hired economists/mathematicians to develop neoclassical economics to justify capitalism and to suggest policies that give the capitalists a free hand in doing what they are doing.

Accordingly, neoclassical economics is the only kind of economics that is taught in all the universities these days. Needless to say, neoclassical

economics is based on absurd assumptions and its predictions do not tally with reality. Hence, economics syllabi these days do not contain any history. They only contain models. History means what has happened till now and not just what happened many years ago. What happened many years ago is also extremely important.

5.5 The Indian Scenario

India is helplessly and completely under the control of the global financial capital today. Let us explain why. India is dependent on foreign countries for the supplies of crucial intermediate inputs (defined as those inputs that are bought from others and get completely absorbed in production) such as petroleum and petroleum products, fertilizers and so on. How much goods and services India can produce depends on how much of these intermediate inputs it can import (i.e., purchase from other countries). India also does not have the technology to produce the goods and services that it produces. It does so with imported technology (i.e., technology purchased from other countries). It imports technology in the form of machinery and equipment. It has to, therefore, import spares and components on a large scale as well to keep its production facilities going. To set up a new production unit or to expand the existing ones, it has to import machinery and equipment. In other words, how much India can invest depends crucially on how much capital goods (machinery and equipment) it can import. Since India does not have an indigenous technological base and make do with imported technology, which are inferior to the cutting-edge ones, its export potential is woefully limited. In this scenario, how much India can produce and invest depends crucially on how much it can import, and its import capacity is determined in a large measure by the amount of foreign capital that it receives. We explain this point below.

India cannot pay for its imports with its own currency. It has to pay for its imports with foreign currency. Unlike its own currency, it does not create foreign currency. It has to earn foreign currency. It earns foreign currency by selling its products to foreigners, that is, by exporting its products. It can also secure foreign currency by selling to foreigners its assets such as bonds, equities, bank deposits and so on and also by directly borrowing from foreigners. Sale of assets to foreigners and borrowing from foreigners are referred to as import of capital. When foreigners buy our assets or lend to us directly, the transaction is referred to as import of capital or inflow of capital into our country.

Since India's ability to export is far too inadequate relative to its requirements, even to maintain a modest rate of growth of real GDP, India needs large inflows of foreign capital. In fact, every year India receives massive inflows of foreign capital, that is, foreign financial institutions buy massive amounts of equities and bonds issued by Indian companies and the government with foreign currency. This enables India to import large quantities of foreign goods in excess of what it can purchase with its own export earnings. If India's relations with the foreign investors sour and foreign capital inflows decline as a result, the growth rate of India's real GDP will plummet to very low levels and India will plunge into a deep recession. India has, therefore, lost its policy-making autonomy to foreign investors. Its economic policies have to conform to the dictates of the foreign investors. Accordingly, the Government of India (GoI) through a series of reforms is trying to establish in India the kind of capitalism that is prevalent in the US. Accordingly, efforts are on to reduce the area of operations of the government and increase that of the private sector in general and that of the multinationals in particular. Reforms are being made to dilute labour laws in large-scale enterprises so that producers face no difficulty in hiring and firing workers and also in hiring contractual workers. Guaranteed pensions are being withdrawn. Accumulated savings of the workers to be used for giving them pensions are now being invested in risky assets, which may become junk anytime, as has happened in case of many countries such as the US. Thus pensions have become highly uncertain and may be taken away entirely by the global financial capital through their bubble-triggering and -bursting operations in the asset market. The real interest rate has been negative in India for a long period of time (see Table 5.1). The nominal interest rate is being continuously reduced at the present in the name of tackling recession, when, as we have already explained above, there is no logical basis for such a measure. Obviously, the agenda is to reduce the nominal interest rate to the minimum possible level. A persistent negative real interest rate leads to an erosion of the real value of savings over time or transfer of savings from the savers to the borrowers. Economic reforms, which are being adopted by the Government of India (GoI), intend to rob the working class in large enterprises of job security and retirement benefits. The savers are being robbed of their savings through the setting of nominal interest rates in such a manner that the real interest rate becomes negative. This process of transferring savings of the savers is expedited through the continuous lowering of the nominal interest rates. With the shrinkage in the area of operation of the government sector and the increase

in the size of the private sector, the loss in job security, the increase in the importance of multinationals and the incorporation of highly capital-intensive methods of production, workers are losing their bargaining strength. Old trade unions are weakening, while new trade unions in the emerging sectors are not coming up. Hence, labour movements against attempts at worsening work conditions or lowering of interest rates are not taking place. Political leaders are not making any effort at building up the nation through a well-thought-out strategy that would put an end to India's dependence on foreign technology or foreign inputs. No such goal is on the agenda of any political party in India. Political parties in India do not consider it shameful being governed by the dictates of global capitalists. We shall dwell on this point at length in Chap. 7. For a detailed account of the Indian economic scenario, go through Ghosh and Ghosh (2016).

Review Question

1. Why is India so dependent on foreign investors? What should be done to put an end to such dependence?

5.6 Fair Real Rate of Return on Savings, Inflation and Price Indexation of Wage Rates and Interest Rates

Savings yield an important service to borrowers. There should be a fair real rate of return (i.e., a fair real rate of interest) on savings. There should be a set of clearly laid-down principles for the determination of the fair real rate of return. Moreover, both the nominal interest rate and the nominal (money) wage rate should be price indexed. This means that when prices rise, the nominal interest rate and the nominal wage rate should be so adjusted that the real values of the interest income and the wage income remain unaffected. Let us explain why. We have already explained that the nominal value of real GDP, that is, the nominal GDP, gets distributed among people as nominal gross profit, nominal wage income and nominal interest income. When prices go up, the nominal value of the real GDP rises and the whole of the additional nominal value of the real GDP goes into the hands of the people as additional nominal income. If the nominal wage rate and the nominal interest rate remain unchanged, the whole of

the additional nominal GDP goes into the hands of the capitalists as additional nominal gross profit. Let us illustrate this point by means of the following equation:

$$PY = \left[W \cdot \left(l_0 / L_0\right) Y + Br_0\right] + \left[PY - \left\{W \cdot \left(l_0 / L_0\right) Y + Br_0\right\}\right] \tag{5.1}$$

To comprehend (5.1), refer to eqs.(3.5) and (3.6) of Chap. 3 and go through the discussion explaining them. Notations used in (5.1) are the same as those in (3.5) and (3.6). Also recall that the term "nominal" means money or in terms of money. Thus, nominal wage rate means money wage rate, nominal profit means profit in terms of money and so on. The left-hand side (LHS) of (5.1) is the nominal GDP or the nominal value of real GDP. P is the price level. The first term within the third brackets on the RHS of (5.1) is the aggregate nominal wage income and aggregate nominal interest income of the workers. The second term within the third brackets on the RHS of (5.1) is the nominal gross profit of the capitalists. Suppose P rises, while Y, W, l_0, L_0, B and r_0 remain unchanged. Then, the nominal GDP increases. The RHS of (5.1) giving the aggregate nominal income of the people also goes up by the same amount. However, if the nominal wage rate, W, and the nominal interest rate, r_0, remain unchanged, the whole of the additional nominal GDP accrues as additional nominal gross profit of the capitalists. In this case, the purchasing power of the nominal wage income and the nominal interest income falls, that is, the part of the real GDP that the workers can purchase with their wage income and interest income goes down with the rise in P. We can easily show that the loss of the workers is exactly matched by the gain of the capitalists. To show this, divide both sides of (5.1) by P and rewrite it as

$$Y = \left[\left(W / P\right)\left(l_0 / L_0\right) Y + \left(Br_0 / P\right)\right] + \left[Y - \left\{\left(W / P\right)\left(l_0 / L_0\right) Y + \left(Br_0 / P\right)\right\}\right] \tag{5.2}$$

The RHS of (5.2) gives the aggregate real income of the people. The first term within the third brackets gives the real income of the workers, that is, it gives the part of Y that workers can purchase with their wage and interest income. The second term within the third brackets gives the real gross profit of the capitalists, that is, it gives the part of Y that the capitalists can buy with gross profit. If P goes up, while Y, W, r_0 and other vari-

ables remain unchanged, then we find from (5.2) that the workers' real income falls and the real value of gross profit increases exactly by the same amount. This is obviously unjust. Wage rates and interest rates should be price indexed so that nominal incomes of all the sections increase in the same proportion as prices. However, no efforts are on to achieve this. There is no demand for protection against inflation from the trade unions, who represent the workers, who are also the bulk of the savers. Thus, through economic reforms what is happening is rampant exploitation of the workers and savers. We shall dwell on this point at length in Chap. 7.

5.6.1 What the Central Bank Can DO

The central bank changes its policy rate to contain recession and inflation. We have already explained why the central bank cannot counter recession by lowering its policy rate. We shall argue here that the central bank cannot control inflation either by raising its policy rate. The central banks the world over think that they can control inflation by raising the interest rates. The presumption is that an increase in interest rate will lower aggregate demand by reducing investment demand. The contraction in aggregate demand will lead to an excess supply situation at the prices prevailing in the market. This will induce producers to lower prices. This line of argument is based on the assumption that the markets are perfectly competitive and prices adjust in response to demand-supply conditions. In the face of excess supply, prices fall; they rise if there is an excess demand. However, perfectly competitive markets are a figment of imagination. They do not exist in reality. Usually, markets are oligopolies. Producers in oligopoly markets, as we have already pointed out and explained, keep their prices fixed and adjust their outputs to demand. Thus, if a hike in the interest rate lowers aggregate demand for goods and services, its impact will principally be on aggregate output and not on prices. However, a hike in interest rate affects prices through another route as well. Capitalists finance with loans not only their investment expenditure but also their purchases of labour services and raw materials (intermediate inputs). Thus, interest charges constitute an important component of the cost of production. A hike in the interest rate raises the cost of production and this induces capitalists to raise prices. Thus, a hike in the interest rate is more likely to raise the inflation rate instead of reducing it. In addition, the demand contraction that it brings about lowers the level of aggregate production.

The upshot of our above discussion is that the central bank cannot tackle either recession or inflation. Its efforts at stabilization actually destabilize the economy. What it can and should do is the following: It should seek to maintain a fair real rate of return on savings.

Review Questions

1. Why should the wage rate and the interest rate be price indexed?
2. Why can't the central bank tackle recession?
3. Why can't the central bank tackle inflation?
4. What should the central bank do?

5.7 Economic Reforms and the Poor

Most of the people in India are poor. They do not have adequate access to quality food, quality clothing, quality shelter with proper sanitation, let alone to quality healthcare services and education. The objective of economic policies in every civilized society should be to provide the poor with adequate access to quality food, clothing and shelter and unlimited access to quality education and health care. What are the obstacles to achieving this goal? The main obstacle is obviously the scarcity of resources. To achieve the goal noted above, the government has to make sure that the bulk of the country's resources get utilized for producing the goods and services that are necessary to achieve the goal. To do this, the leakage of resources into non-essential uses has to be stopped. For this purpose income of the rich has to be taxed at high rates, production and sale of non-essential goods have to be taxed at high rates, investment in non-essential areas has to be restricted through licensing. The New Economic Policy (NEP) that India adopted in July 1991 has done just the opposite. Tax rates on the incomes of the rich have been drastically reduced. The restrictions on production and investment of non-essential goods have been done away with. The government's role in production and investment has been drastically reduced. In sum, the Government of India, unlike what it did during the Nehru-Mahalanobis era (spanning the period 1950–91), is no longer trying to determine how the country's resources should be utilized. It has left the allocation of resources to the market forces. If the allocation of resources is left to market forces, bulk of the resources will be utilized to cater to

the needs of the people with purchasing power. Thus, the rich will corner bulk of the resources, while the poor will have to make do with whatever little resources are left.

The government should fix a ceiling on an individual's income on the basis of its estimate as regards how much income is required to buy the essential goods in desired quantities and tax the income in excess of the ceiling at very high rates (as close to 100 per cent as possible) and use the resources thus secured to produce the essential goods so that everyone can be provided with the desired quantities of the essential goods. It should invest in R&D on the socially required scale so that India's dependence on imported technology and imported intermediate goods can be done away with. We shall dwell on this point at length in Chap. 7.

Review Questions

1. Why is the New Economic Policy adopted by India in July 1991 anti-poor?
2. What should the Government of India do to provide Indians with the essential goods in desired quantities?

5.8 Conclusion

The discourse in this chapter seeks to unravel the strategy that the global financial capital (giant global capitalists) in connivance with the governments in the major capitalist countries employs to weaken the rest of the population so that they can grab larger shares of the markets and take away labour and savings from the rest of the people at minimum cost. The strategy, this chapter argues, works in two stages. In the first stage, the global financial capital mounts a speculative attack on the asset markets of a country, causes bubbles in asset prices and then bursts it, plunging the economy into a deep recession. In the second stage, the government and the central bank step in with their stabilization programmes. Here we have argued that the stabilization programme is designed in such a manner that the recession persists at a desired level indefinitely and the interest rates are kept at the minimum possible levels. The recession serves two purposes. It weakens the working class, facilitating adoption of all kinds of anti-labour measures. The recession provides the central bank with the excuse it needs to keep the interest rate at the minimum possible level indefinitely so that savings become available to the large business houses at minimum costs.

The recession serves another purpose. It makes the financial institutions cautious as regards to whom they are lending. They tighten credit standards. As a result, even though risk-free interest rates at which large business houses get loans is pushed down to the minimum level by the central bank, interest rates as faced by the small and medium enterprises go up sharply. In consequence, the large and medium enterprises lose out in competition to the large business houses. Thus, the process of exploitation and immiserization of the masses intensifies.

India is in a miserable state. It is completely dependent on foreign countries for the supplies of crucial intermediate inputs and technology. Its export potential is awfully limited. Even to maintain a modest rate of growth of real GDP, India needs large inflows of foreign capital. Hence, India is completely at the mercy of foreign investors. Foreign investors (represented by the International Monetary Fund, IMF) forced India to adopt the New Economic Policy (NEP) in July 1991. Its objective is to dismantle all controls over the economic activities of the people so that market forces determine the allocation of resources. If market forces determine the allocation of resources in an extremely unequal country like India, most of the resources will be used to cater to the needs of a very small section of the rich people. As a result, most of the people will languish in poverty. As a civilized country, India should try to achieve two goals. First, it should provide its masses with adequate amounts of quality food, clothing, shelter, education and health care. Second, it should put to an end its dependence on imported technology and imported intermediate inputs. This requires investment in R&D on a substantial scale. To achieve the two goals, therefore, the Indian government has to ensure that most of the resources get utilized for the production of essential goods. To ensure this, it has to impose a ceiling on an individual's income, tax away all the income above the ceiling amount and use the fund thus secured to achieve the two goals mentioned above. We shall dwell at length on this point in Chap. 7.

References

Bernanke, B. (1983). Non-Monetary Effects of Financial Crisis in the Propagation of the Great Depression. *The American Economic Review, 73*(3), 257–276.

Bernanke, B., Gertler, M., & Gilchrist, S. (1996). The Financial Accelerator and Flight to Quality. *Review of Economics and Statistics, LXXVIII*(1), 1–15.

Ghosh, C. and Chosh, A. (2016). Indian Economy, PHI Learning, Delhi.

Himmelberg, C., Mayer, C., & Sinai, T. (2005). Assessing High House Prices: Bubbles, Fundamentals and Misperceptions. *Journal of Economic Perspectives, 19*(4), 67–92.

Khandani, A., Lo, A. W., & Merton, R. C. (2009). Systemic Risk and the Refinancing Ratchet Effect. NBER Working Paper 15362, September.

Mishkin, F. S. (2009). Is Monetary Policy Effective during Financial Crises. *American Economic Review, 99*(2), 573–577.

Mishkin, F. S. (2011). Over the Cliff: From the Subprime to the Global Financial Crisis. *Journal of Economic Perspectives, 25*(1, Winter), 49–70.

Taylor, J. B. (2009). *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis.* Stanford, CA: Hoover Institution Press.

CHAPTER 6

Capitalism Versus Socialism: A Few Country Studies

Abstract This chapter explains the economic performance of the Soviet Union and the reasons for its disintegration. It also seeks to explain China's economic performance and assess whether it has deviated from the socialist path. It also discusses the economic performance of Cuba and the prospect of its survival as a socialist state. It identifies the inevitable hostility of the vastly more powerful capitalist powers as the sole factor that has led to the collapse of the Soviet Union, aberrations in the People's Republic of China and uncertainty regarding the prospect of survival of Cuba as a socialist state.

Keywords Soviet Union • China • Cuba • Socialism

6.1 Introduction

This chapter discusses and assesses economic performances of three socialist states, namely, the Soviet Union, People's Republic of China and Cuba. On the basis of this assessment it seeks to explain why Soviet Union disintegrated, the reasons for the apparent deviations of People's Republic of China from socialism and the problems faced by Cuba in sustaining socialism. We have divided the chapter into three parts. Part I focuses on the Soviet Union, Part II discusses the state of People's Republic of China and Part III devotes itself to Cuba.

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Part I: Soviet Union

6.2 Economy of the Soviet Union: Introduction

Socialism based on Marxian principles was born in the Soviet Union (Union of Soviet Socialist Republic [USSR]) in 1917 under the leadership of Vladimir Ilich Lenin. Right since its birth, the Soviet Union was engaged in fierce wars with the major capitalist powers. In fact, the history of the Soviet Union is one of unending war with the capitalist foes bent on overthrowing the communist regime and supplanting it with a capitalist one. Lenin died in 1924. Following his death, Joseph Stalin usurped power. Under his able, ruthless and forceful leadership, the Soviet Union made great economic progress, won World War II defeating the axis powers led by Germany and Japan and established itself as a superpower rivalled only by the US. However, the cost of the unending war with the mighty capitalist bloc, which was vastly richer than the Soviet Union, proved to be too much for the USSR to bear. It eventually capitulated in 1985 under the burden of the cost of war and collapsed completely in 1991. In what follows, we shall delineate and explain the triumphs and travails of the USSR and its final surrender to the vastly mightier capitalist force. The Soviet Bloc was held together by force, which came at an enormous cost. Why was application of force necessary to keep the Soviet Bloc together? To answer this, we have to know how the Soviet Bloc was formed. In what follows, we shall briefly discuss that.

6.3 Formation of the Soviet Bloc

The first socialist state based on Marxian principles was born in Russia. The devastation wrought by World War I in Russia created acute scarcities of food and other necessities. This induced nation-wide rebellion against the inept administration of Emperor Tsar Nicholas II all through 2017. In the February revolution, Tsar was overthrown and a provisional government came into power. In the October revolution, the Bolsheviks (communists) led by Vladimir Ilich Lenin ousted the provisional government and set up in its place a permanent communist government which followed Marxist-Leninist principles. Its objective was to establish socialism and eventually communism in Russia. The upper-class people and the officers in the military were opposed to the communists. With the support of the capitalist powers (the US, Europe and Japan), who not only provided

the anti-communist forces within Russia, referred to as the White Army, with resources, arms and ammunition but also sent in their own troops, a fierce and bloody civil war broke out, which did not remain confined to Russia alone, but spread to other territories of the erstwhile empire of Tsar. The Red Army of the Bolsheviks came out victorious. They occupied Transcaucasia consisting of Azerbaijan, Armenia and Georgia. These three states were merged into Transcaucasian Soviet Federated Socialist Republic (TSFSR). In December 1922, TSFSR was made a part of the Union of Soviet Socialist Republic (USSR), which is alternatively referred to as the Soviet Union. Following the secret Molotove-Ribbentrop Pact of non-aggression between the Soviet Union and Germany in 1939, the Red Army invaded the Baltic states of Lithuania, Latvia and Estonia and made them a part of the Soviet Union. Finally, after World War II, in which the Red Army defeated West Germany and Japan, the Red Army occupied many East and Central European states. Using its military might, the Soviet Union retained control over many of them through puppet regimes. These states were East Germany, Poland, Hungary, Bulgaria, Czechoslovakia, Romania and Albania. They became the satellite states of the Soviet Union and constituted the Eastern Bloc. Thus, quite a large part of the Soviet Union and its satellite states were occupied by force and, as a result, had to be kept in control by means of force. This called for enormous spending on military and police. The cost assumed onerous proportions as the internal forces opposed to the communist or Soviet rule were aided in all kinds of ways by the much mightier capitalist bloc, which was keen on destabilizing the Soviet Bloc both internally and externally.

6.4 The Spectacular Rise of the Soviet Union

When Bolsheviks came to power in the Soviet Union, it was predominantly an agrarian feudal economy. Industrialization had just started. Beleaguered by hostile mighty capitalist powers, the Soviet Union realized that survival required rapid arms build-up through industrialization at the fastest possible pace. All private enterprises were nationalized or turned into workers' cooperatives. The state took over all private properties. The goods and services were produced mostly by the state and the rest by workers' cooperatives. The state distributed the produced goods and services at prices which it fixed. It set consumption quota for every consumption item and distributed the consumption items among the individuals in accordance with these consumption quotas at fixed prices. Thus, produc-

tion and distribution of all goods and services were completely under the control of the state. After the death of Lenin in 1924, industrialization began in the Soviet Union under the leadership of Stalin through Five Year Plans. The First Five Year Plan was launched in 1928. Let us give you an idea as to how plans are made with a simple example. Consider an economy where only two goods are produced X_1 and X_2. Usually, industries are interdependent, that is, output of one industry is used as an input in another industry. Suppose a_{12} amount of X_1 is needed to produce one unit of X_2 and a_{21} amount of X_2 is needed to produce one unit of X_1. X_1 and X_2 are also used for personal and public (government) consumption and for investment. In any given period, productive capacities for X_1 and X_2 are already installed. Outputs of X_1 and X_2 when their respective productive capacities in the given period are fully utilized are denoted by X_1^t and X_2^t, respectively, where t denotes the given period of time. Denoting personal consumption demand, public consumption demand and investment demand for the ith good by C_i, I_i and G_i, respectively ($i = 1, 2$), the equations the planners deal with may be written as follows:

$$X_1^t = a_{12} X_2^t + C_{1t} + G_{1t} + I_{1t} \tag{6.1}$$

and

$$X_2^t = a_{21} X_1^t + C_{2t} + G_{2t} + I_{2t} \tag{6.2}$$

I_{1t} and I_{2t} are used to augment productive capacities of X_1 and X_2 and also for increasing R&D capacity. The state or the planners decided on the values of C_{it}, G_{it} and I_{it}, $i = 1, 2$ on the basis of equations (6.1) and (6.2) and known values of X_1^t, X_2^t, a_{12} and a_{21}, whose values the planners estimated. The state undertook almost all production and investment. Maximization of the rate growth of production of X_1 and X_2 from the given period to the next and the rate of technological progress calls for maximization of I_{1t} and I_{2t}. From (6.1) and (6.2) it is clear that there is a trade-off between consumption and investment. Maximization of growth rate entails minimization of personal and public consumption. The planners in the Soviet Union set consumption levels at minimum possible levels to maximize the growth rate. Of course, given the hostile environment, there were limits to which government consumption (comprising expenditures on defence and administration, public health care and education) could be reduced. Moreover, the rapid growth of industry and agriculture

required a rapid growth in quality labour force as well. Hence, the Soviet Union had to devote a vast amount of resources to education and health care for the masses. Hence, personal consumption levels were reduced to the minimum possible level by curbing production of non-essential consumption goods. Prices of goods and services produced were set by the planners. From the above it is clear that, through planning problems of both underconsumption and disproportionality were avoided. Planning ensured that productive capacities created in different lines of production were fully utilized in every period. Moreover, since how much capacities were to be created in different lines of production were decided upon by the planners after consideration of all relevant factors, capacities created in different lines of production matched each other perfectly. Since production, investment and consumption were under the complete control of the state in the Soviet Union, the state ensured that the production, investment and consumption targets specified in the plans got fully realized. The fast pace of industrialization in the Soviet Union required a high rate of growth of agricultural surplus (which refers to surplus of agricultural output over and above what is needed by the people engaged in agriculture for consumption and for further production). This was necessary since agricultural products were used as raw materials in industry and as food by industrial workers. To ensure this, land was nationalized and agricultural production was carried out in large collective firms, which belonged to two categories, namely, Sovkhozes (state-owned firms) and Kolkhozes (cooperative firms). All industrial enterprises were state owned. Every year, in accordance with the targets specified by the Five Year Plans, all enterprises in both industry and agriculture were given production quotas, which they had to fulfil. These production quotas were specified in such a manner that productive capacity in every production unit was fully utilized. As trade with hostile capitalist countries was not possible, the Soviet Union had to develop its industry and agriculture on its own. That meant massive investments in R&D to develop its own technology for producing and improving the production of all kinds of goods and services it needed. The Soviet Union produced only essential consumption goods (comprising basic food, clothing, shelter, quality health care service and education), armaments, the intermediate inputs necessary for the production of the abovementioned goods and machinery and equipment necessary for producing themselves as well as for producing the consumption goods mentioned above and the necessary intermediate inputs. Through planning the Soviet Union sought to provide every member of the labour force with gainful

employment that best suited her/his ability. It also tried to create a system that made sure that every citizen got quality food, clothing, shelter, health care and education in adequate quantities.

Under state-controlled socialist planning, as it brought about full utilization of productive capacities in every line of production and stopped leakage of resources into non-essential uses, economic development of the Soviet Union was spectacular, to say the least. There took place tremendous surge in production and productivity in both industry and agriculture, and by the end of the 1930s, it was fully industrialized and emerged as a major industrial power. It succeeded in providing every citizen with adequate quantities of quality food, clothing and shelter. It also created a system of universal education and health care under which every citizen got quality health care and education on the scale one wanted or required completely free of cost. Moreover, it fully utilized all the members of the labour force by providing every member with gainful employment that best suited her/his ability. The commitment, intelligence and the skill of the leaders and the people of the Soviet Union made this economic miracle possible. All this happened in an environment of relentless hostility, as anti-communist forces tried to gain control and destabilize the Soviet Union from both within and outside. There was a sizable section of anti-communist people in the Soviet Union consisting chiefly of people who lost properties, power and position on account of nationalization of all private properties that took place following the establishment of the communist rule. Capitalist powers tried to weaken the communist government from within through these people.

6.4.1 World War II and the Post-War Period

Economic strides of the Soviet Union came to a halt in the 1940s with the outbreak of World War II, as West Germany attacked the Soviet Union. The battle that ensued was fiercely fought and arduously long. Even though the Red Army emerged victorious, it did so at a heavy cost. About 72 million people lost their lives and quite a large part of the industrial productive capacity of the Soviet Union built so arduously in the pre-war years lay devastated. Following the conclusion of the War, a period of rapid reconstruction began and the economic development that took place till the end of the fifties was again a Soviet miracle. National income in the USSR in 1960 became 2.34 times of what it was in 1951. This far surpassed the performance of all the capitalist powers. Its industrial perfor-

mance was equally spectacular and its industrial output in 1960 became 2.28 times of what it was in 1951. It outstripped by far the performance of the US, the UK and France but fell below that of West Germany and Japan. Labour productivity in the USSR in 1960 became 4.6 times of what it was in 1951. Increase in labour productivity may be regarded as an index of technological progress. In this respect also the USSR outstripped the US and the UK (see Khanin (2003) for details).

After the death of Stalin in 1953, Nikita Kruschev came to power. Since 1953 emphasis was laid on improving the living standard of the people. There took place remarkable improvement in the standard of living of the people, which attained the level of many developed countries at the end of the 1950s. During the 1950s, the share of expenditure on education, health care and science and technology in the Soviet Union was one of the highest in the world. There took place enormous increase in life expectancy, which was 69 at the end of the 1950s. This was the life expectancy in most of the developed countries during the given period. There was no poverty. The citizens had a secure and comfortable, though not rich, living standard. Technologically also the Soviet Union made great strides. This is borne out by the following facts. The Soviet Union was the first to successfully launch a satellite, Sputnik, in space; commission an atomic power station; build the first supersonic passenger aircraft; send the first man, Yuri Gagarin, in space and so on. The Soviet Union outperformed the US in many other technological achievements. Soviet computers did not lag far behind those of the US. Technical level in such branches of industry as electric power generation, ferrous metals, coal industry and some branches of non-ferrous metals was not then substantially below the US level. Technical level of military equipment was no less than that of the US. At the end of the 1950s, the Soviet Union emerged as a superpower in military, scientific and economic terms. In all these areas it lagged slightly behind the US, but far outstripped all other countries in the world.

6.5 The Fall of the Soviet Union

After World War II, the capitalist bloc and the Soviet Union engaged in spreading their respective spheres of influence, that is, they wanted to bring more and more countries under their respective control and establish their kinds of societies in those countries. The Soviet Union wanted to spread communism, while the capitalist bloc worked for the spread of capitalism. This struggle and conflict between the two powers is called the

Cold War. After the capitalist powers and the Soviet Union had recovered from the ravages of war at the end of the 1950s, the Cold War assumed a fierce pace. The Cold War manifested itself in an arms race, where each power tried to outstrip the other militarily. They also fought each other by providing the pro-communist and pro-capitalist forces in different countries of the world with military and materials aid. The economic might of the Soviet Union was far too small relative to that of all the capitalist powers combined. To keep pace with the capitalist bloc in the areas mentioned above, the Soviet Union had to devote too much of its resources to arms building, police, military and empire building, so much so that it had little resources left for its own economic development. Its growth rate began to decelerate since the end of the 1950s and assumed very low levels in the 1970s and 1980s. As the production base of the Soviet Union was far too small relative to that of the capitalist bloc, with the marked fall in the growth rate of its production base, it was no longer possible for the Soviet Union to compete with the capitalist bloc militarily. It realized this in the eighties and Soviet leadership finally capitulated to the capitalist bloc in the mid-eighties, when the Soviet President Gorbachev shunned the path of communism and ushered in capitalism by adopting the policies of Glasnost and Perestroika. The former meant giving the people the freedom of speech and expression, and the latter aimed at supplanting the state-enterprise-based centrally planned economy (alternatively referred to as a command economy) with a private-enterprise-based market economy. The Soviet Union could no longer hold itself together either. The weakening of the military might of the Soviet Union and the continuing and ever-increasing efforts on the part of the capitalist bloc to strengthen the anti-communist forces in the Soviet Union finally resulted in all the republics of the Soviet Union declaring and gaining independence. Thus, the Soviet Union split up into 15 independent republics. In other words, the Soviet Union ceased to exist as a single nation. All the independent states adopted the path of capitalism. In what follows, we shall develop a simple model to illustrate how the Soviet Union lost the Cold War.

6.5.1 The Model

The Soviet economy was largely a closed economy. It struck up a startling pace of economic development almost under conditions of autarky. Therefore, we shall ignore foreign trade in what follows. We know that the following equation must hold in a closed market economy as well as in a closed planned economy in any given period:

$$Y = C + I + G \tag{6.3}$$

where Y, C, I and G denote real net domestic product, aggregate real personal consumption, aggregate real net investment and aggregate real public consumption, respectively of the given period. Equation (6.3) simply states that in a closed economy Y is used for purposes of personal and public consumption and for investment. Henceforth, G will stand for government expenditure in real terms on only military and police for simplicity.

Therefore, aggregate real net investment denoted by I is given by the following equation:

$$I = Y - C - G \tag{6.4}$$

Equation (6.4) states that the surplus of Y over C and G is used for purposes of net investment, that is, to add to the capital stock. Denoting aggregate capital stock of the economy by K, we have $I \equiv dK$. Equation (6.4) holds good in a market economy as well as in a planned economy. In the latter, values of Y, C, G and I are planned by the planners. Dividing both sides of (6.4) by K, we get

$$\frac{I}{K} \equiv \hat{K} = u\left[1 - c - g\right] \quad \hat{K} \equiv \frac{dK}{K},\ u \equiv \frac{Y}{K},\ c \equiv \frac{C}{Y} \text{ and } g \equiv \frac{G}{Y} \tag{6.5}$$

Equation (6.5) identifies the determinants of the rate of growth of capital stock. Here, for reasons to be explained shortly, u is the output-capital ratio, when productive capacity of the capital stock is fully utilized, c is the fraction of aggregate output (NDP) that is devoted to personal consumption, while g is the fraction of aggregate output devoted to government consumption. In a planned economy, planning ensures full utilization of the productive capacity of the existing capital stock in every given period. Hence, in a planned economy, output-capital ratio in any given period is given by u. Planners also determine c and g. Hence, as follows from (6.5), the planners in any given period can raise the rate of growth of capital to the maximum possible level by reducing c and g to the minimum possible levels, given the value of u. The level of u depends upon the level of technology. The better the technology, the greater is the value of u. The rate of growth in the value of u depends on the rate of technological progress. To bring about technological progress, investment has to be made in the science and technology (S&T) sector. The rate of technological progress depends upon the rate at which the productive capacity in the S&T

sector can grow over time. To what extent the planners can make the productive capacity in the S&T sector grow over time depends crucially on how much resources the planners can mobilize for purposes of investment. In other words, it depends crucially on $\hat{K}$. The higher the $\hat{K}$, the greater is the capability of the planners to bring about a higher rate of growth of the productive capacity of the S&T sector. Now,

$$Y = uK \tag{6.6}$$

Taking log of both sides of (6.6) and, then taking total differential, we get

$$\hat{Y} = \hat{u} + \hat{K} \qquad \hat{Y} \equiv \frac{dY}{Y} \text{ and } \hat{u} \equiv \frac{du}{u} \tag{6.7}$$

Equation (6.7) states that the rate of growth of Y is the sum of the rate of growth of u and the rate of growth of K. Since, as we have already pointed out, the former crucially depends upon the latter, the rate of growth of Y depends principally on that of K. So, in what follows, we shall assume $\hat{u}$ to be equal to zero for simplicity. Given this assumption, Eqs. (6.5) and (6.7) yield

$$\hat{Y} = \hat{K} = u\left[1 - c - g\right] \tag{6.8}$$

Given u and c, Eq. (6.8) shows that $\hat{Y}$ and $\hat{K}$ are decreasing functions of g. This relationship between $\hat{Y}, \hat{K}$ and g is shown in Fig. 6.1, where the line gg shows values of $\hat{Y}$ and $\hat{K}$ corresponding to different values of g. Consider a given period, period zero. Suppose the level of g and the minimum level of c in the given period are denoted by g_0 and c_0, respectively. The corresponding value of $\hat{Y}$ and $\hat{K}$ is denoted by $\hat{Y}_0 = u\left(1 - c_0 - g_0\right)$. The maximum rate of growth of G (expenditure on defence and administration) that is sustainable is $\hat{Y}_0$. Let us explain this point. This may be proved as follows. Suppose $\hat{G} > \hat{Y}_0$. Now, $\hat{g} = \hat{G} - \hat{Y}$ (since $g = G/Y$, taking log of both sides and then taking total differential, we get $\hat{g} = \hat{G} - \hat{Y}$). Therefore, g will increase in the next period, reducing $\hat{Y}$ below $\hat{Y}_0$. Thus, in the next period, $\hat{G}$ will move further above $\hat{Y}$. Accordingly, $\hat{Y}$ will go on falling over time. Let us illustrate the point made above with a numerical example. Aggregate capital stock and aggregate full capacity output in period 0 of the given economy are denoted by K_0 and Y_0, respectively, and suppose $(Y_0/K_0) = u = 1/3$. The minimum value of c is 0.2 in every period. Also suppose the rate of growth of G from the preceding period (referred to as period –1) to

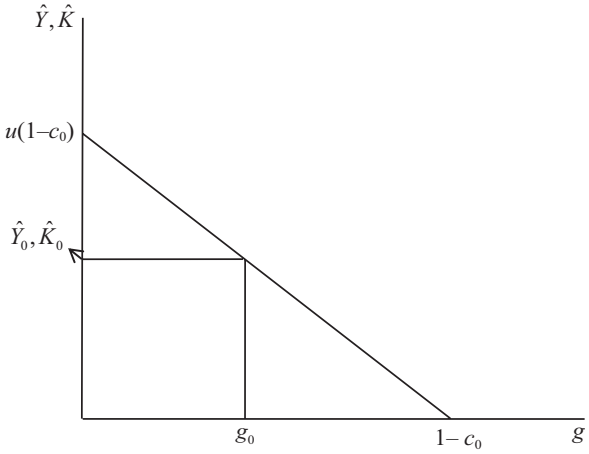

Fig. 6.1 Unsustainable values of $\hat{G}$

period 0 given by $[(G_0 - G_{-1})/G_{-1}] = 0.2$ and $(G_0/\Upsilon_0) = 0.2$. Note that in period 0, G_{-1} is given and known. Therefore, the rate of growth of Υ from period 0 to period 1 (due to growth in K through net investment) is given by $(1/3).[1-0.2 -0.2] = 0.2$ (or 20 percent). If now the rate of growth of G from period 0 to the next period, period 1, is 0.2 (or 20 percent), $[G_1/\Upsilon_1]=[G_0(1+0.2)/\Upsilon_0(1+0.2)]$ will remain equal to $g_0 = 0.2$ and, hence, given c, the rate of growth of Υ from period 1 to period 2 will remain equal to 20 percent. However, if the rate of growth of G from period -1 to period 0 and from period 0 to period 1 is higher than 20 percent, rate of growth of Υ will go on falling over time. Work out this point yourself. Thus, if the rate of growth of G exceeds the rate of growth of Υ in any given period, the growth rate of Υ will go on falling over time. If it falls below a certain minimum level, say, for example, the rate of growth of population, the planners will not be able to fulfil the basic needs of the people, with c kept at the minimum level. In such circumstances, the planners will be forced to lower $\hat{G}$. Alternatively, a continuous fall in the growth rate and the realization of the inevitability of an imminent severe crisis in such a scenario may unnerve the planners and force them to reduce $\hat{G}$. Using this result, we can explain why the Soviet Union lost the Cold War.

The capitalist bloc was much mightier and richer than the Soviet Union. At the beginning of the Cold War, both Υ and G of the capitalist bloc were much larger than those of the Soviet Union and, at the same time, in the capitalist bloc g was much smaller and u much larger than those in the

Soviet Union. Since the level of G in the capitalist block was much larger, to match any given level of $\hat{G}$ in the capitalist bloc, the Soviet Union had to set its own $\hat{G}$ at a substantially higher level. Thus, it was possible for the capitalist bloc to set its $\hat{G}$ at such a level that it remained sustainable, but it forced the Soviet Union to set its $\hat{G}$ at unsustainable levels. This is why there took place a secular decline in the growth rate of Soviet GDP all through the Cold War, forcing it to reduce $\hat{G}$ substantially. It was no longer possible for the Soviet Union to defend itself against the capitalist bloc. Hence, it had to capitulate to the capitalist bloc and accept all its terms and conditions for surrender.

Let us explain the Soviet Union's problem vis-à-vis that of the capitalist bloc in greater detail. The Soviet Union was committed to maintaining a minimum standard of living for every one of its citizens. It provided every citizen with gainful employment in accordance with his ability. It created a universal education and health care system where every citizen got access to education and health care services on the scale he required or wanted free of cost. It set the prices of all the produced goods and services and set up a public distribution system to make sure that every citizen had adequate access to quality food, clothing and shelter. In case of the Soviet Union, therefore, c in Eq. (6.8) was quite large and substantial even though luxury consumption was kept to the minimum. In case of the capitalist bloc, however, there was no such commitment. It could allow c to go substantially below the level the Soviet Union was committed to. This was also another reason why the Soviet Union lost the Cold War.

Part II: People's Republic of China

6.6 People's Republic of China: Introduction

The Communist Party of China (CPC) under the leadership of Mao Zedong came into power and established People's Republic of China in October 1949. It was one of the poorest countries of the world. The objective of the CPC was to establish socialism. With this end in view, all agricultural land was nationalized and owners of all industrial enterprises were asked to sell off their units to the state or to convert them into joint ventures with the state. Handicraft industries were organized into cooperatives. By 1956, about 67.5 per cent of all modern enterprises were state owned and the

remaining 32.5 per cent were under joint public-private ownership, and 91.7 per cent of all handicraft workers were under cooperatives.

The CPC realized that the only way to survive and improve the living conditions of the people was through fast-paced development of the economy. To achieve this, the CPC adopted the Soviet model of planned economic development through Five Year Plans. The objective was rapid self-reliant industrialization through the development of heavy (machine-making-machine) and basic industries. The latter produce goods such as coal, steel, power and so on that enter into the production of all goods and services directly and indirectly. Rapid industrialization brings about a high rate of growth of demand for agricultural raw materials and food. The latter is needed to feed the growing number of industrial workers. Thus, rapid industrialization calls for a high rate of growth of agricultural surplus. The planned industrialization strategy of China, accordingly, included a strategy for rapid development of the agricultural sector as well. The development strategy adopted in China also aimed at developing indigenous technology and achieving a high rate of technological progress on its own. The First Five Year Plan (1953–57) was launched in 1953. The Second Five Year Plan covered the next five years, 1958–62. The planning process was, however, disrupted after 1962. It began again from 1966, when the Third Five Year Plan was launched. Since 1966 the planning process has been going on uninterrupted till today.

6.7 China's Growth Performance

China has been by far the fastest growing country in the world since 1978. It grew steadily at a very high rate all through almost the four decades since 1978 (see Tables 6.1 and 6.2). Its growth record during 1953–77 was no less impressive despite a few instances of instability due to early weaknesses of the economy and inexperience of the planners (see Table 6.1). China was one of poorest countries of the world when the Communist Party of China (CPC) came to power in October 1949. At the present, China is the second-largest economy in the world, outstripping by far all the countries in the world except the US. What accounts for this spectacular success? In what follows, we shall try to give an answer to this question.

We attribute China's spectacular success to planning and to the socialist path of development it followed. China began planned development of its

Table 6.1 Annual growth rate of real GDP in People's Republic of China

Year	*Growth rate*	*Year*	*Growth rate*	*Year*	*Growth rate*
1962	−5.58	1981	5.172	2000	8.492
1963	10.3	1982	8.934	2001	8.34
1964	18.18	1983	10.385	2002	9.131
1965	16.95	1984	15.139	2003	10.036
1966	10.65	1985	13.443	2004	10.111
1967	−5.77	1986	8.94	2005	11.396
1968	−4.1	1987	11.684	2006	12.719
1969	16.94	1988	11.235	2007	14.231
1970	19.3	1989	4.186	2008	9.654
1971	7.06	1990	3.907	2009	9.4
1972	3.81	1991	9.294	2010	10.636
1973	7.76	1992	14.216	2011	9.536
1974	2.31	1993	13.868	2012	7.856
1975	8.72	1994	13.052	2013	7.758
1976	−1.57	1995	10.949	2014	7.298
1977	7.57	1996	9.928	2015	6.918
1978	11.667	1997	9.231		
1979	7.6	1998	7.838		
1980	7.807	1999	7.677		

Source: World Bank

Table 6.2 Average annual growth rate (%)

	1979–2015	*2001–15*
Total population	1.0	0.5
Employment	1.8	0.5
GDP	9.7	9.7
Primary industry	4.4	4.1
Secondary industry	11.0	10.4
Tertiary industry	10.6	10.3
Per capita GDP	8.6	9.0

Source: National Bureau of Statistics, China

economy since 1953 when it launched its First Five Year Plan. During 1953–78, China succeeded in nationalizing almost all the means of production and laying down the foundation for rapid industrial and agricultural progress. In fact, the period 1953–78 prepared the ground for the take-off of the Chinese economy since 1978. We attribute China's success to planning and the success of planning to socialism. We explain these points below:

Let us first focus on planning. We shall prove the following points regarding planning. Planning leads to full realization of the growth potential of an economy. In other words, through planning, growth can be raised to the maximum possible level. This is not possible in a capitalist market (unplanned) economy. The reasons are the following: (1) In a planned economy, all the economic activities are planned. Planners set investment targets for all lines of production and they do so in such a manner that capacities created in different sectors of production match one another perfectly and, at the same time, there takes place full utilization of capacity in all lines of production. This rules out the problems of excess capacity, disproportionality and underproduction. (2) Investment levels can be maximized by minimizing consumption so that only essential consumption needs of the people are met. (3) Finally, investment pattern can be made to conform to the objectives of the planner. We illustrate the point made above with a simple example. Suppose two goods X_1 and X_2 are produced in a closed economy. We consider a given period, period zero. In the given period, productive capacities of X_1 and X_2 are already installed. Full capacity outputs of X_1 and X_2 are denoted by X_1^0 and X_2^0, respectively. Amounts of X_1 required to produce one unit of X_1 and one unit of X_2 are denoted by a_{11} and a_{12}, respectively. Again, amounts of X_2 required to produce one unit of X_1 and one unit of X_2 are denoted by a_{21} and a_{22}, respectively. Suppose, consumption and investment demands for X_1 and X_2 are denoted by C_1, I_1 and C_2, I_2, respectively. Planners know the values of X_1^0, X_2^0, a_{11}, a_{12}, a_{21} and a_{22}. They specify the values of C_1, C_2, I_1 and I_2. They specify these values in such a manner that the following equations are satisfied:

$$X_1^0 = a_{11}X_1^0 + a_{12}X_2^0 + C_1 + I_1 \tag{6.9}$$

$$X_2^0 = a_{21}X_1^0 + a_{22}X_2^0 + C_2 + I_2 \tag{6.10}$$

Thus, there takes place full utilization of capacity in every line of production. Planners in a planned economy develop administrative mechanisms to control C_1, C_2, I_1 and I_2. If the planners want to maximize growth rate, they will reduce C_1 and C_2 to the minimum possible levels so that I_1 and I_2 can be raised to the maximum possible levels. If the planners want the output of X_2 to grow at a faster rate than X_1, they will allot larger part of I_1 and I_2 to augmenting the productive capacity of the X_2 sector. Planning was greatly facilitated by socialism. As China was a socialist state, it nationalized all the material means of production. Thus, all the production enterprises were owned by the state. The CPC was the only political party that formed

the government. Its competent, loyal, disciplined and committed cadres were in charge of running, supervising and monitoring all the enterprises. It was, therefore, easy to make sure that full capacity output was produced in every period and its allocation to different uses conformed to the pattern specified in the Plan. It was, therefore, possible for China to grow at the fastest possible pace. To minimize consumption, production of consumer goods was restricted to the minimum level necessary to meet the basic needs of the people. All the retail stores were owned by the state. The consumer goods produced were rationed to the people through these retail stores at prices fixed by the planners. Since production and investment were completely under the control of the government and the CPC, only planned investment projects were carried out. As these projects were carried out by the competent, loyal and disciplined party cadres, no effort was spared to see to it that all the investment targets were fully met.

China adopted the Soviet plan model of development. Its objective was to develop a process of self-reliant growth and development. Achieving self-reliance called for setting up heavy and basic industries and developing a science and technology sector (S&T) capable of producing indigenous technology and improving it continuously. Heavy industries refer to the machine-making-machine industries, which produce machines that produce themselves as well as all other kinds of machines needed to produce consumer goods and intermediate inputs. Basic goods refer to the goods that enter into the production of all goods directly and indirectly. Examples of basic goods are coal, iron and steel, electricity, cement, transport and so on. Once a country develops basic and heavy industries and sets into motion an independent and indigenous process of technological progress to improve the efficiency of production in all sectors and also to eliminate dependence of the country on foreign countries for supplies of crucial inputs and technology, it becomes self-reliant. Obviously, for a poor country like China, for the reasons we have already explained, planning was the best way of making sure that the country gained self-reliance and that it did so in minimum possible time.

China started its development programme with the active help of the Soviet Union. However, as the Soviet Union began to weaken from the beginning of the sixties with the onset of the Cold War, China distanced itself from the Soviet Union to avoid attracting the ire of the capitalist powers. It was necessary for China not to get caught in an arms race or a hostile relationship with the capitalist powers. Such an event would have seriously jeopardized its development goals. As China succeeded in laying

down a strong foundation for rapid agricultural and industrial progress by 1978, it wanted to integrate with the rest of the world to expand its business. For this, it was necessary to appease the capitalist powers. To achieve this, China started adopting since 1978 a series of reforms, whose objective was to give the impression that it was earnestly trying to convert its planned (command) economy into a market economy. With this end in view, it privatized all small and medium state-owned enterprises. Privatization took the following form. The ownership of the assets remained with the state. However, an individual or a group of individuals were given the right to run the enterprises and make profit. Similarly, many of the state-owned enterprises (SOEs) were converted into share holding enterprises (SHEs) and their shares were given to their managers and workers. State-owned enterprises also bought shares of other companies. Two stock exchanges were reopened. They started functioning. However, there did not take place any fundamental change. The controlling stakes of most of the SHEs or listed companies directly or indirectly (through the share holdings of the other state-controlled enterprises) remained with the state (see Szamosszegi and Kyle (2011)). Members of the local governments set up another category of firms referred to as village and township enterprises. Ownership of these enterprises is not clear at all. All the enterprises mentioned above have no foreign participation and they are referred to as domestic-funded enterprises. Obviously, all the domestic-funded enterprises are run by the competent, loyal and disciplined cadres of the CPC and they sincerely follow instructions of the CPC and the planners. Besides these, there are foreign-funded enterprises. They are of two types: joint ventures and fully foreign-owned enterprises. The former are owned jointly by foreigners and domestic-funded enterprises, while the latter are owned solely by foreigners. Quite a large number of foreign-funded enterprises are actually owned by SOEs. SOEs set up companies abroad, which, in turn, invest back in China. This phenomenon is referred to as round tripping. China actively courted foreign investment to keep abreast of foreign technology. It set up special economic zones (SEZs), where foreigners could set up business. To make SEZs attractive, the government equipped them with quality infrastructure, made labour laws governing wages and work conditions in other areas inapplicable so that foreign investors could pay market-determined wages, and also arranged for tax concessions/exemptions. China, however, does not allow all kinds of foreign investment. Through a strong non-transparent bureaucracy, it allows only those foreign investments

which it considers necessary for its technological and economic development and which agree to technology transfer to China. Thus, despite privatization, all the enterprises remained completely under the control of the state and the CPC. Even though planning became less detailed on paper, it worked through the competent, loyal and committed members of the CPC, who were in charge of all the enterprises. Plan targets were made known to them and they worked to fulfil the plan targets. In China, a single party rules. Accordingly, careers of all individuals depend upon how earnestly they follow party instructions. In such a scenario, instructions regarding production, investment, prices and so on can be conveyed to the cadres through non-official party channels as well. This helps create the illusion that all the decisions are being taken by the managers of the enterprises and resources are getting utilized and allocated by market forces. China created the illusion of moving towards a market economy to disarm the capitalist powers and join the World Trade Organization (WTO) to expand its business beyond its borders. This is nothing new. Capitalist countries also create the illusion of being democratic. In reality, they are as autocratic as the socialist countries. Let us explain. Political parties in capitalist countries are just like business enterprises. They have a product to sell, which the voters have to buy with votes. To campaign for their products among the people and to compete with one another, they have to hire workers. They have to hire services of the media to popularize their products among the masses. Obviously, all this requires an enormous amount of money. Accordingly, political parties can be set up only by the rich. In a capitalist country, capitalists have the money to set up and run political parties. They set up and run political parties to gain state power. It is absolutely essential for the rich to grab state power, as they need it to protect their enormous wealth from the masses. Hence, whichever political party comes to power in a capitalist country, it serves the cause of the capitalists. Thus, democracy in a capitalist country is an illusion. Capitalism or capitalists are not under any kind of threat in a democracy, but all other people are. In contrast, the CPC is all powerful in China. Careers of all individuals, big and small, are shaped by the CPC.

Managers and workers of all enterprises in China, public or private, have to abide by the dictates of the CPC for their survival and well-being. Hence, private ownership and market in China are entirely an illusion. Given its political set-up, it was possible for China to make the details of its planning covert, just the way capitalism makes the control of the capitalists over the political parties and the government covert. Planning

allows a country to grow at the highest possible rate by ensuring full utilization of capacity in all lines of production, by keeping consumption at the minimum possible level so that aggregate investment assumes the highest possible value and by making the allocation of aggregate investment across different sectors such that the constraints operating on the country's growth performance get removed in the minimum possible time.

6.8 Foreign Trade in China

Until 1978 China followed a closed-door policy, that is, it tried to restrict its foreign trade to the minimum possible level. However, in 1978, Chinese leadership realized that it had achieved a state where it can successfully compete with the rest of the world. From 1978, China pursued an aggressive export promotion policy and emerged as one of the most important exporting countries of the world. At the present, it is the largest exporter in the world. To quote from *World Atlas*: "In 2014, China was by far the leading exporter, exporting goods valued at $2,342,310,000 in the year. The second place United States exported only 69 per cent of this amount in 2014. Germany, Japan and Netherlands exported 64 per cent, 29 per cent and 28.7 per cent, respectively, of the Chinese total." Persistent current account surplus has allowed China to accumulate an enormous stock of foreign assets. What accounts for China's spectacular success in export promotion? In what follows, we shall explain this point. China succeeded in developing an independent indigenous base for technological progress. The craftsmanship of the Chinese workers was also world class. China, at the same time, kept the wage rate low. For Chinese firms, the largest source of finance was the banks, which were all state owned. Banks provided the firms with loans free of cost. Firms need not even pay back the loans. The free disbursal of loans, however, did not jeopardize macroeconomic balance, as banks provided firms with loans in accordance with overt and covert plan targets. Locations of firms were planned in such a manner that the transport cost involved in the production of any good was minimized. China also provided the firms with services of quality infrastructure free of cost. All this made China a very low-cost economy. This, coupled with the state-of-the-art technology and superb craftsmanship of Chinese workers, enabled China to provide the rest of the world with high-quality products at unbelievably low prices. The exchange rates of the Chinese currency, Yuan, were fixed by the Chinese government and imports at these official exchange rates were regulated in such a manner that their value remained below that of the exports (see Table 6.3).

Table 6.3 Export and import of China (US$ 100 million)

Year	*Export* (X)	*Import* (M)	X – M
1978	97.5	108.9	−11.4
1980	181.2	200.2	−19.0
1985	273.5	422.5	−149.0
1990	620.9	533.5	87.4
1991	718.4	637.9	80.5
1992	849.4	805.9	43.5
1993	917.4	1039.6	−122.2
1994	1210.1	1156.2	53.9
1995	1487.8	1320.8	167.0
1996	1510.5	1388.3	122.2
1997	1827.9	1423.7	404.2
1998	1837.1	1402.4	434.7
1999	1949.3	1657.0	292.3
2000	2492.0	2250.9	241.1
2001	2661.0	2435.5	225.5
2002	3256.0	2951.7	304.3
2003	4382.3	4127.6	254.7
2004	5933.3	5612.3	320.9
2005	7619.5	6599.5	1020.0
2006	9689.8	7914.6	1775.2
2007	12,200.6	9561.2	2639.4
2008	43,306.9	11,325.7	2981.2
2009	12,016.1	100,959.2	1956.9
2010	14,306.9	11,325.7	2981.2
2011	15,777.5	13,962.4	1815.1
2012	18,983.8	17,434.8	1549.0
2013	20,487.1	18,184.1	2303.1
2014	22,090.0	19,499.9	2590.1

Source: National Bureau of Statistics, China

6.9 Conclusion

The Constitution of People's Republic of China states that it follows Marxist-Leninist principles and its objective is to build a socialist society. We have already argued that despite the apparent shift towards privatization, the control of the state over the means of production is absolute. Moreover, the state exercises full control over the utilization and allocation of productive resources through overt and covert planning implemented through the dedicated and committed cadres of the CPC. Even though wage rates and consumption levels have been kept low, the high growth rate of real GDP has brought about spectacular improvement in the economic conditions of

Table 6.4 Poverty in People's Republic of China: headcount ratio at $1.90 a day (2011 purchasing power parity (PPP)) (% of population)

2012	*2013*
6.5	1.9

Source: World Bank

Table 6.5 Health indicators of the People's Republic of China

Year	*Life expectancy*	*Infant mortality rate*	*Under 5 mortality rate*	*Maternal mortality rate*
1950	41.6	195.0	317.1	
1960	31.6	190.0	309.0	
1970	62.7	79.0	111	
1980	66.1	47.2	61.3	164.5
1990	69.5	42.2	54.0	88.0
2000	72.1	30.2	36.9	57.5
2011	75.0	12.9	14.9	26.5

Source: World Bank

the masses. Before the planned economic development of China had started, most of its people were poor. The sustained high growth rate has reduced poverty to only 1.9 per cent of the population in 2013 (see Table 6.4). The poverty is confined only to rural areas. All the major indicators of people's health have improved remarkably (see Table 6.5). Life expectancy of the Chinese people, for example, has risen from 41 years in 1950 to 75 years in 2011. About 99 per cent of the Chinese people have received compulsory nine years of education. However, all the improvements in the people's living conditions notwithstanding, the state's provision of health care, old-age care and unemployment benefits is inadequate. In the pre-1978 period, which we shall refer to as the pre-reform period, China followed the Soviet model and the state took care of all its citizens from cradle to grave. All the enterprises were state owned and all the working-age people were employed. These state enterprises provided their employees with dwellings and old-age pensions following superannuation. Health care and education were free. In the post-reform period, following 'privatization' of many state enterprises, a social security system had to be devised to take care of the employees of the 'private' enterprises and the unemployed. This social security system is, however, inadequate. The government is now keen on improving the social security system substantially so that the masses get complete and adequate

old age, health and unemployment coverage. It has now lowered its growth targets to raise the consumption levels of the masses.

Part III: Cuba

6.10 Economy of Cuba: Introduction

Cuba is a small island deficient in vital natural resources such as land and oil. A revolution occurred in Cuba in 1959 and the revolutionaries led by Fidel Castro usurped power, overthrowing the dictator Batista. Before the revolution, Cuba was virtually a colony of the US. All its industry and finance and about one-fourth of the best agricultural land were under the ownership of the US firms. Most of its people lived in poverty and destitution. Cuban agriculture specialized in the production of mainly sugarcane. It exported sugar principally to the US and imported oil and food. Cuba was also a favourite holiday destination of the rich of the US. Most of the agricultural land in Cuba was in the hands of large landowners. Upon assuming power, Castro nationalized all enterprises and natural resources, depriving the US firms of all their assets in Cuba. In retaliation, the US attacked Cuba and tried to destroy all its agricultural land. It also imposed economic sanctions on Cuba. This debarred Cuba from having any kind of economic transactions with the US and its allies. This put Cuba in dire straits, as it was dependent on sales of sugar to the US and purchase of food and oil from the US and its allies. However, Cuba succeeded in circumventing this crisis and improving the economic conditions of the masses manifold. This made the revolutionary government of Castro immensely popular. In what follows we shall explain how Cuba made it possible.

6.11 Socialism in Cuba and the Soviet Union

Cuba found an ally in the Soviet Union, who protected Cuba from US invasion. It also bought Cuban sugar and sold Cuba oil and food at subsidized prices. Cuba adopted the socialist plan model of development of the Soviet Union. It nationalized all material means of production; all production took place in state-owned enterprises; planners set wages and prices of all products and rationed consumer goods to the consumers through state-owned retail stores. The revolutionary government through planning developed a nation-wide education and health care system,

which provided all the citizens with high-quality education and health care free of charge. The revolutionary government also provided the masses with adequate quantities of food, clothing and shelter at affordable prices. This made the revolutionary socialist government immensely popular. Cuba had monocrop agriculture. It specialized principally in the production of sugarcane. Its industry comprised mainly of sugar, petroleum, tobacco, construction, nickel, steel, cement, agricultural machinery and pharmaceuticals. Its service sector consisted of banking and finance, trade, transport and communication, education and health care. Aided by subsidized trade with the Soviet Union and Soviet technology, Cuban economy grew rapidly until the collapse of the Soviet Union in 1991 (see Table 6.6). However, with the disintegration of the Soviet Union, Cuba entered into a severe economic crisis. With the disappearance of its major market for sugar and the major sources of food and oil, Cuba went into a severe recession and Cubans began to starve (see Table 6.6). However, Cuba did not seek Western assistance, which would have forced Cuba to compromise on its socialist programme. It bore through the shortages

Table 6.6 Growth rate of per capita GDP (constant 2010 US$)

Year	*Growth rate*	*Year*	*Growth rate*	*Year*	*Growth rate*
1971	6.6	1990	−3.829	2009	1.387
1972	3.02	1991	−11.384	2010	2.294
1973	1.735	1992	−12.167	2011	2.662
1974	0.526	1993	−15.365	2012	2.842
1975	8.049	1994	0.198	2013	2.568
1976	4.259	1995	1.963	2014	0.9
1977	7.689	1996	7.353	2015	4.343
1978	5.754	1997	2.362		
1979	0.407	1998	−0.217		
1980	−5.41	1999	5.819		
1981	19.094	2000	5.569		
1982	8.464	2001	2.864		
1983	4.977	2002	1.125		
1984	7.387	2003	3.512		
1985	0.932	2004	5.527		
1986	−0.742	2005	11.00		
1987	−3.365	2006	11.925		
1988	2.608	2007	7.178		
1989	−3.48	2008	4.06		

Source: World Bank

and worked hard to rejuvenate the economy. The result was spectacular, given the extremely limited means it had at its disposal and the harsh climatic conditions it is subject to. In what follows, we shall recount Cuba's fight against poverty and starvation.

6.12 Post-Soviet Cuban Economy

The period 1990–94 was the period of most acute crisis and Fidel Castro referred to this period as the 'special period in peace time'. The main problem areas were food and fuel, which Cuba received from the Soviet Union at subsidized prices. To remove food shortage, the Cuban government brought all unused land in both rural and urban areas under cultivation. Even courtyards, rooftops and playgrounds in urban areas were brought under cultivation/animal raising. As the import of chemical fertilizers and pesticides was not possible, there took place a shift to organic farming. The government started investing heavily in research devoted to improving inputs and methods of organic farming. Cuba reverted to farming with oxen. All this yielded significant results. Food production began to grow steadily. By 2006, urban farms in Havana met 90 per cent of Havana's food requirements without using any petroleum or petroleum products. The United Nation's World Food Programme (UNWFP) states the following facts about food security in Cuba: "Over the last 50 years, the country's comprehensive social protection programmes have largely focused on ensuring food security and nutrition as a key priority …. In 2011, the Government of Cuba launched a process to update its economic model to improve the efficiency, reduce the costs and increase the sustainability of its social protection programmes. These efforts are guided by the Government's commitment to ensure that no Cuban is left unprotected. With its comprehensive social protection programmes, Cuba has largely eradicated hunger and poverty. It is one of the most successful countries in achieving the Millennium Development Goals and was ranked 44th of the 187 countries in the 2014 UNDP Human Development Index." For details on Cuba's efforts in promoting sustainable agriculture in the post-Soviet era, one may go through Koont (2004).

Cuba's main source of energy was fossil fuel or oil. With the drying up of cheap oil imports from the Soviet Union, Cuba made concerted efforts to reduce its dependence on imported oil and save energy. In 2006, Castro launched 'Energy Revolution' in Cuba to achieve this goal. The main problem of Cuba was that its electricity plants (which were thermal electric

plants) ran on oil. As Cuba had no river, its potential for large hydroelectric plants was limited. To achieve energy self-sufficiency, it took a number of measures besides the ones delineated above in the context of agriculture. First, it invested heavily in oil exploration to increase domestic production of oil. Second, it replaced old energy-intensive appliances of households with new energy-saving ones. It also made huge efforts at educating people about the urgency and techniques of energy conservation. Third, it tried to develop and promote alternative energy sources such as biomass, hydroelectric plants, solar energy and wind mills. Cuba had started developing wind firms, micro-hydro systems, bio-gas plants and biomass facilities. Cuba had also started exporting its energy revolution to other Southern countries in the framework of the Bolivarian Alternative for the Americas. Rural schools, health clinics and social centres in remote off-grid areas were provided with electricity via solar photovoltaic (PV) systems or micro-hydro plants. Making lights, computers and educational television programmes accessible to every school child in the country won Cuba the Global 500 award from the United Nations in 2001. By 2003, over 2364 schools, 350 doctors' offices, and hundreds of hospitals had been equipped with solar PV systems. After 2002, in addition to health stations and schools, private homes also have been electrified with solar PVs. For a detailed discussion of Cuba's energy revolution, one may go through Käkönen et al. (2014).

Cuba found an ally in Venezuela (whose the then president was the socialist leader Hugo Chevez), which began to supply Cuba with oil from 2000. In return, Cuba supplies Venezuela with doctors and nurses to run Venezuela's health care institutions in poor localities. Cuban medical professionals also train Venezuelans to be medical professionals to run hospitals and clinics for the poor in Venezuela. Venezuela also sends its citizens to Cuba for free treatment. Cuba also helps Venezuela to improve its defence, agriculture and education. Following Chevez's death in 2013, Maduro came to power in Venezuela and continued with Chevez's policies. However, from 2014, US began to dump its oil in the world market and lowered oil price to very low levels. This dealt a very hard blow to Venezuela, which exported oil and used the proceeds to purchase basic necessities such as food, medicine and so on. The steep fall in oil prices has created severe shortages of food, medicine and other basic necessities in Venezuela. Taking advantage of these shortages, parties opposed to the socialist rule have become powerful. If they succeed in wresting power from the socialists, Cuba will cease to receive oil from Venezuela and will

again get into troubles. Oil shipments from Venezuela have already begun to decline. However, given the ability of Cuban people to withstand crises and to devise innovative ways of tackling them, we seriously believe that all the measures taken by Cuba to achieve self-sufficiency in food and energy will fructify and it will survive the capitalists' onslaughts to force it into submission.

6.13 Concluding Observations

Capitalist countries are going through a deliberately perpetrated recession to crush the bargaining/competitive strength of workers and small producers and traders. They are cutting down on their welfare spending in the name of ensuring fiscal discipline. They colonized the whole world to expand their business and ownership of natural resources. The USSR, on the other hand, ensured full employment of its labour force and provided the masses with adequate quantities of quality food, clothing, shelter, health care and education until the onerous arms race robbed it of the resources necessary for survival. Cuba also followed the same model and provided its citizens with adequate food, clothing and shelter at affordable prices and completely free quality health care and education. Unlike the capitalist powers, the Soviet Union did not try to exploit Cuba and conquer its resources. It helped Cuba prosper and enrich the lives of common Cubans. China followed the Soviet model initially. However, to neutralize the hostility of the capitalist powers, it had to undertake market-oriented reforms and compromise on its social welfare programmes. However, as we have argued, it retained the state control over the means of production, continued with planning covertly and sustained a very high rate of growth possible only in socialist planned economies and has now started to pass on the benefits of its development to the poor by strengthening its social welfare programmes. It has also succeeded in reducing the incidence of poverty significantly.

Capitalist powers strive continuously to breakdown socialist states through different means. The means they use are the following: They use physical force or they wage economic warfare or both. The USSR had great military capability, but it had extremely limited resources compared to the resources available in the capitalist bloc. Hence, instead of attacking the USSR directly, the capitalist powers created a threat of physical attack and conquest through the build-up of arms. For survival, the USSR had to keep pace. The arms race was set at such a pace by the capitalist powers

that it became too costly for the Soviet Union to sustain, given the relatively limited means it had at its disposal. The amount of resources the USSR was left with after meeting the requirements of the arms race was too inadequate to meet the other basic economic requirements. Hence, the USSR had to surrender eventually. Following the collapse of the Soviet Union, Venezuela and Cuba joined hands for their own development as well as for spreading socialism to other third-world countries. The strong social protection programmes in these two countries and the enormous good they did to their masses inspired and strengthened leftist forces in other third-world countries. However, these two economies are weak. Cuba has to depend on Venezuela for oil. Venezuela, on the other hand, depends solely upon the export of oil to buy from abroad all the goods needed even to meet the most basic needs such as food and medicine. The US dumped oil in the world market and, thereby, brought about a steep fall in oil prices. The oil price became so low that it was no longer possible for Venezuela to import essential goods such as food and medicine in adequate quantities using its proceeds from the sale of oil. This created a lot of misery for the masses. This has significantly weakened the ruling socialist party in Venezuela and strengthened the opposition right-wing parties, who may oust the socialist party in the next election. If that happens, it will pose a grave threat to socialism in Cuba as well. However, we do hope that, given the kind of mass support socialist governments enjoy in both Venezuela and Cuba and given the expertise Cubans have deleoped, socialist governments in both the countries will be able to overcome the right-wing attacks and make both the countries self-reliant.

References

Käkönen, M., Hanna Kaisti, H., & Luukkanen, J. (2014). Energy Revolution in Cuba: Pioneering for the Future? Finland Futures Research Centre, FFRC eBOOK 4/2014.

Khanin, G. I. (2003). The 1950s: The Triumph of the Soviet Economy. *Europe-Asia Studies, 55*(8), 1187–1212.

Koont, S. (2004). Food Security in Cuba. *Monthly Review, 55*(8), 11.

Szamosszegi, A., & Kyle, C. (2011). *An Analysis of State-Owned Enterprises and State Capitalism in China*. Washington, DC: U.S. – China Economic Security Commission.

CHAPTER 7

Survival of the Common Man Under Capitalism: A Plausible Strategy

Abstract The objective of this chapter is to sum up the major lessons that this book yields. It shows in brief how capitalism functions; how the giant capitalists usurp state powers and create a mechanism of exploitation that forces the workers to make their labour and saving available to the giant capitalists at minimum possible prices. It explains why the giant capitalists colonized the whole world and why they granted their colonies independence following the rise of the Soviet Union as a superpower after World War II. It also elucidates here how the giant global capitalists have conquered back their colonies using the example of India. It also suggests here a strategy by means of which the masses can wrest the political parties from the clutches of the giant capitalists, usurp state power and move towards establishing socialism and putting an end to capitalist exploitation. It also shows how the strategy mentioned above can make an erstwhile colony like India truly self-reliant and independent.

Keywords Giant capitalists • Democracy • State power • Mechanism of exploitation

7.1 Introduction

A capitalist society, as we have emphasized all through the book, is characterized by a very high degree of inequality in the distribution of wealth and income (see, among others, Picketty (2014) and Stiglitz (2012)). The

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process of centralization makes the capitalist class very small. A few giant capitalists in such a society own most of its wealth and have in their command the bulk of its income. Paradoxically, a capitalist society also has multi-party democracy, where every adult citizen has one vote irrespective of whether he is rich or poor. A political party that gets majority of the votes gets to exercise state power. Democracy, therefore, grants political equality. The coexistence of extreme economic inequality and political equality or the survival of capitalism despite political equality constitutes a grave puzzle. To elaborate, given the political equality granted by democracy, it is optimal for the political parties to work for the poor toiling masses who constitute more than 99 per cent of the country's population. It is rational for the political parties to confiscate the wealth of the giant capitalists, tax away the surplus income of the rich and distribute them among the masses. It seems natural for the political parties in a democracy to nationalize all the large firms and run them for the benefit of the masses. However, political parties never behave the way described above. They do just the opposite. They take away the properties of the poor and give them away to the giant capitalists free of cost. Obviously, this is a puzzle. Explaining this puzzle is one of the most important objectives of this book. We have done this in Chap. 1 of the book. We have argued that a political party in a capitalist society requires an enormous amount of fund for its survival. It requires a country-wide network of workers and services of media on a very substantial scale to make its programmes and views popular among the people. The larger the amount of fund at the command of a political party, the greater is its competitive strength. On the other hand, the giant capitalists, who own the major part of the country's wealth and produce most of the goods and services, have to protect their enormous wealth and business empire from the masses. For this, they need state power. As they have the requisite amount of resources, they form the political parties, fund and run them just like their other business enterprises. Through these political parties, the giant capitalists grab the state power. This explains why political parties work for the giant capitalists at the expense of the masses. The capitalists secure two things from the workers: their labour and their savings. Using state power and also through other means, which we have explained in detail in Chaps. 3 and 5, the giant capitalists force the workers to make their labour and savings available to the giant capitalists at the minimum possible price. We shall summarize the strategies employed by the giant capitalists to accomplish it

here. We shall also suggest a strategy by means of which the workers can be protected from exploitation and the unjust and unequal capitalist societies can be transformed into equal and just socialist societies within the framework of democracy.

Just like the people in a capitalist society, countries in the world are also divided into two categories: rich and the poor or independent and dependent. Explaining this divide is another important objective of this book. We have done this in Chap. 3 of the book, where we have presented theories of imperialism of Hobson, Lenin and Luxemburg. We pointed out there that capitalism has been imperialist right from its birth. By the beginning of World War I, giant capitalists of West Europe and the US conquered and colonized almost the whole of the rest of the world to expand their business empires as much as possible all across the world. However, at that time, the giant capitalists were a divided lot. They were divided on the basis of their nationalities. Hence, to gain a larger share of the colonies, they fought two world wars with one another. These two world wars weakened them considerably. As we have explained in Chap. 6, World War I made the Emperor Tsar of Russia so vulnerable that the Bolsheviks overthrew him and usurped state power. Eventually, the socialist state that was born in Russia grew into the formidable Soviet Union and emerged as a superpower after World War II. Inspired by the strength and success of the Soviet Union and aided by it, workers' movements and socialist forces all across the capitalist world gained momentum. Thus, in the post-World War II period, socialism and the Soviet Union emerged as the single most important threat to the giant capitalists. To neutralize this threat, the giant capitalists shed their differences and became united. Capitalist powers led by the US declared a tacit war with the Soviet Union to check the spread of its influence and, eventually, to destroy it. This ushered in the era of Cold War, which caught both the Soviet Union and the capitalist powers in a fierce arms race with one another and both the powers fought and struggled with one another to spread their respective influences all across the world. The capitalist powers had to devote so much resources to fighting the Cold War and rebuilding their countries following the devastations wrought by World War II that they had no more resources left for containing the rising nationalist movements in the colonies and, thereby, retaining hold over them. Hence, they granted them independence. Many of these colonies including India found inspiration in the example set by the Soviet Union and adopted the Soviet model of

planned economic development and sought to establish socialism in their countries. However, eventually, the Soviet Union lost the Cold War. It collapsed in 1991. Following the disintegration of the Soviet Union, the capitalist powers won back almost all their colonies, which did not accept their domination and traversed independent or socialist paths. The capitalist powers did this either through war or indirectly through economic means. They won back India as well. We shall explain in this chapter how the giant capitalists conquered India again and what strategy India should follow to gain back her independence.

7.2 Giant Capitalists and Workers: The Mechanism of Exploitation

We shall explain here how the giant capitalists keep the workers under control, ruin their bargaining strength and extract from them their labour and savings at minimum possible prices. We explained these processes in Chaps. 3 and 5. We summarize them here.

7.2.1 Extraction of Labour at the Minimum Possible Price

Capitalism sets two classes of people against one another: the capitalists and the workers. The former want to increase their share in total income at the expense of the latter's and vice versa. The giant capitalists control the workers in two ways, namely, by using state power and by reducing their dependence on labour. They invest heavily in R&D and continuously innovate labour saving technological changes, which they incorporate in production making labour more and more redundant in the production process. As workers get continuously expelled from the production process creating a vast and rapidly growing pool of unemployed workers, workers lose all their bargaining strength and make their labour available at the minimum possible wage or whatever wage and work conditions the giant capitalists offer them. Thus, the workers, who constitute more than 99 per cent of the population in a capitalist society, live in unemployment or insecure employment under pitiable work conditions and their woes continuously grow over time. To substantiate our claim, we take the case of the organized sector in India. The organized sector consists of all the large non-agricultural firms. The data given in Table 7.1 show that during the period 1994–2014, while output of the organized sector at constant

Table 7.1 Employment in the organized sector (in million)

Year	*Growth rate of GDP at constant (2004–05) prices*	*Number of workers employed*
1994–95	6.4	27.53
2000–01	5.3	27.79
2001–02	5.5	27.20
2003–04	8.1	26.45
2004–05	7.0	26.46
2005–06	9.5	26.96
2006–07	9.6	27.24
2007–08	9.6	27.55
2008–09	6.7	28.18
2009–10	8.4	29.00
2010–11	8.4	29
2011–12	5.3	29.65

Source: RBI

prices grew at an average annual rate of around 6 per cent, number of workers employed in the organized sector remained more or less fixed. Note that Table 7.1 gives data on growth rates of GDP and not those on the growth rates of the output of the organized sector. However, during the period under consideration, the output of the organized sector grew at a faster rate than GDP, since the share of the organized sector in GDP increased during the period under consideration (see Table 7.2). Marx, as we explained in Chap. 3, was of the view that a reduction in the labour requirement of output depresses demand for produced goods and services leading to the crisis of underconsumption or overproduction. In our view, the capitalists are aware of the demand depressing effect of incorporation of labour saving technological changes. They neutralize it in the following manner. Note that spending on R&D creates demand for produced goods and services but does not add to productive capacity. Such spending leads to production of blueprints of new technology. The capitalists offset the demand depressing effect of incorporation of labour saving technology by stepping up their R&D spending commensurately. In our view and as we have explained in detail in Chap. 5, capitalist societies are under complete control of the giant capitalists and the crises that occur in the capitalist economies, the recessions and the booms, are deliberately caused by the giant capitalists to further their own interest. We briefly present these activities and their motivations below.

Table 7.2 Contributions of the organized sector and the unorganized sector to the value added (output) of major sectors of production and NDP

Industry	*1993–94*		*2003–04*		*2010–11*	
	Organized	*Unorganized*	*Organized*	*Unorganized*	*Organized*	*Unorganized*
Agriculture, forestry and fishing	3.5	96.5	4.1	95.9	5.8	94.2
Mining, manufacturing	64.2	35.8	60.5	39.5	64.5	35.5
Electricity, construction and services	47.1	58.9	53.1	46.9	42.2	51.8
NDP	36.8	63.2	43.3	56.7	45.1	54.9

Source: CSO (2005): National Accounts Statistics 2005, Government of India and National Accounts Statistics 2012, Government of India

7.2.2 *Extraction of Savings at the Minimum Possible Price*

Workers are under the compulsion to save to tide over old age and periods of unemployment and illness, when they are unable to work and earn. They park their savings with the financial institutions owned by the giant capitalists. The financial institutions in their turn lend out workers' savings to the firms and the lion's share of these loans goes to the firms owned and controlled by the giant capitalists. As we have explained in detail in Chap. 5, giant capitalists devise strategies to rob the workers of a part of their savings and secure the remaining part of their savings for themselves at the minimum possible interest rate. We summarize this strategy below. The giant capitalists first target one or more asset markets (may be the stock market or the market for real estate or both) of a country. Then, they, through the global financial institutions and other agencies they own and control, start buying up the assets on a large scale so much so that the prices of the assets begin to increase at a rate much higher than the interest rate prevailing in the market. The media owned and controlled by the giant capitalists bring the scenario to the notice of the masses. They create a strong impression that the inflation rate in the asset prices will remain substantially above the interest rate in future so that one can make huge profit by buying up the assets with loans and reselling them later. The financial institutions, also owned and controlled by the giant capitalists, make loans available on extremely easy terms and in abundance to whoever seeks loans to purchase the assets. Thus, the masses are lured into the speculative game of buying the assets by borrowing from the financial institutions and reselling them later at a large profit. Once the masses get into the game, the rate of inflation in the asset prices rise further above the interest rate fulfilling and reinforcing the hopes and expectations of the masses. Thus, the masses already in the game feel emboldened to increase the scale of their speculative operations and more and more people join the fray. Thus, with the passage of time, the rate of inflation in the asset prices goes on rising, riding on the rising tide of the mass speculative frenzy. As soon as the mass speculative frenzy begins, the global capitalists begin to sell from their stock of the assets at a huge profit. Thus, the workers' savings parked with the financial institutions start getting transferred to the giant capitalists in the form of speculative gains. The surge in the speculative income of the masses leads to a boom in their consumption expenditure, which, in turn, induces an investment boom. Thus, the economy enters into a phase of boom. This continues for some time. Then, at an opportune moment, the giant capitalists suddenly dishoard the remaining part of their stock of the assets so that the rate of inflation in the asset prices takes a substantial fall on a sudden creating a mass panic. Suddenly, the spectre of the rate of inflation in asset prices going below the interest rate

looms large over the heavily indebted masses and the panic of suffering huge losses and bankruptcy grips the people. There takes place a mad rush for selling off the assets as fast as possible to avoid losses or minimize losses. The asset prices as a result take a deep plunge driving the masses into bankruptcy. The mass loan default puts the financial institutions, which lent on a massive scale, into deep financial trouble. Many of them become bankrupt too. With the bankruptcy and deep financial troubles of the households and financial institutions on a massive scale, deep despondency and pessimism regarding future sets in. Both consumption and investment expenditure fall drastically driving the economy into a deep recession. At this stage, the government and the central bank intervene with a battery of stabilization measures. The central bank and the government rescue the financial institutions by buying off the loans and other assets that have gone bad at remunerative prices so that the losses of the financial institutions are fully compensated for. The central bank also takes steps so that the interest rate falls to as close to zero as possible. The government also starts expanding its expenditure to revive demand and the economy. However, the government designs its expenditure programme in such a manner that the economy does not recover fully but continues in a desired state of recession indefinitely. Before going into the reason why the government wants the economy to continue in a desired state of recession indefinitely, we shall delineate the state of the capitalist world today to substantiate the scenario described above.

Let us start with Japan. In the eighties, asset prices (prices of stocks, bonds and real estate) started increasing at a much higher rate than the interest rate catching the masses into a speculative frenzy. The surge in speculative income drove the Japanese economy into a phase of boom. However, the speculative euphoria came to a sudden end and turned into a panic when the asset prices suddenly crashed in 1991 pushing the Japanese economy into a deep recession in 1992. Households became bankrupt; the large-scale loan default drove the financial institutions into deep trouble. Bank of Japan, the central bank of Japan, rescued the financial institutions, cut its policy rate to zero and took other measures so that the interest rate fell to as close to zero as possible. Government of Japan also undertook expansionary expenditure programmes. However, the expenditure expansion programme was designed in such a manner that Japan did not make full recovery from its troubles, but continued in a desired state of recession indefinitely. Even now, Japan is in recession. In the eighties, Japan's average annual growth rate of GDP was more than 5 per cent (see Table 7.3). However, in the post-crisis era, the average annual

Table 7.3 Annual growth rate of GDP

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
China	9.3	14.3	13.9	13.1	11.0	9.9	9.2	7.9	7.6	8.4
France	1.0	1.6	−0.6	2.3	2.1	1.4	2.3	3.6	3.4	3.9
Germany	5.1	1.9	−1.0	2.5	1.7	0.8	1.8	2.0	2.0	3.0
Greece	3.1	0.7	−1.6	2.0	2.1	2.9	4.5	3.2	3.1	4.2
Ireland	1.9	3.3	2.7	5.8	9.6	9.3	11.2	8.9	10.8	10.2
Italy	1.5	0.8	−0.9	2.2	2.0	1.3	1.8	1.6	3.7	1.8
Japan	3.3	0.8	0.2	0.9	1.9	2.6	1.6	−2.0	−0.2	2.3
KoreaRep (South)	9.7	5.8	6.3	8.8	8.9	7.2	5.8	−5.7	10.7	8.8
Malaysia	9.5	8.9	9.9	9.2	9.8	10.0	7.3	7.4	6.1	8.9
Portugal	4.4	1.1	−2.0	1.0	4.3	3.5	4.4	4.8	3.9	3.8
Spain	2.5	0.9	−1.0	2.4	2.8	2.7	3.7	4.3	4.5	5.3
Thailand	8.6	8.1	8.3	8.0	8.1	5.7	−2.8	−7.6	4.6	4.5
UK	−1.2	0.4	2.6	4.0	4.9	2.7	3.1	3.4	3.1	3.8
USA	−0.1	3.6	2.7	4.0	2.7	3.58	4.5	4.4	4.7	4.1

	2001	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
China	8.3	9.1	10.6	10.1	11.4	12.7	14.2	9.6	9.2	10.6
France	2.0	1.1	0.8	2.8	1.6	2.4	2.4	0.2	−2.9	2.0
Germany	1.7	0.0	−0.7	1.2	0.7	3.7	3.3	1.1	−5.6	4.1
Greece	4.1	3.9	5.8	5.1	0.6	5.7	3.3	−0.3	−4.3	−5.5
Ireland	5.8	5.9	3.8	4.4	6.3	6.3	5.5	−2.2	−5.6	0.4
Italy	1.8	0.3	0.2	1.6	0.9	2.0	1.5	−1.0	−5.5	1.7
Japan	0.4	0.3	1.7	2.4	1.3	1.7	2.2	−1.0	−5.5	4.7
KoreaRep (South)	4.5	7.4	2.9	4.9	3.9	5.2	5.5	2.8	0.7	6.5
Malaysia	0.5	5.4	5.8	6.8	5.3	5.6	6.3	4.8	−1.5	7.4
Portugal	1.9	0.8	−0.9	1.8	0.8	1.6	2.5	0.2	−3.0	1.9
Spain	4.0	2.9	3.2	3.2	3.7	4.2	3.8	1.1	−3.6	0.0
Thailand	3.4	6.1	7.2	6.3	4.2	5.0	5.4	1.7	−0.7	7.5
UK	2.8	2.5	3.3	2.5	3.0	2.7	2.6	−0.5	−4.2	1.5
USA	1.0	1.8	2.8	3.8	3.3	2.7	1.8	−0.3	−2.8	2.5

	2011	*2012*	*2013*	*2014*	*2015*
China	9.5	7.8	7.7	7.3	
France	2.1	0.2	0.7	0.2	
Germany	3.7	0.4	0.3	1.6	
Greece	−9.1	−7.3	−3.2	0.7	
Ireland	2.6	0.2	1.4	5.2	
Italy	0.6	−2.8	−1.7	−0.4	
Japan	−0.5	1.8	1.6	−0.1	
KoreaRep (South)	3.7	2.3	2.9	3.3	
Malaysia	5.3	5.5	4.7	6.0	
Portugal	−1.8	−4.0	−1.1	0.9	
Spain	−1.0	−2.6	−1.7	1.4	
Thailand	0.8	7.3	2.8	0.9	
UK	2.0	1.2	2.2	2.9	
USA	1.6	2.3	2.2	2.4	

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 US dollars

Source: World Bank

growth rate of Japan's GDP was around 1 per cent (see Table 7.3). At the present, the average annual growth rate of Japan's GDP has dropped to less than 1 per cent. When the price of an asset exceeds the level that is warranted by its true worth, the excess of the price of the asset over the level that is warranted by its true worth is referred to as a bubble. When giant capitalists attack an asset market of a country and start buying the asset on a large scale, the price of the asset goes above its true price and a bubble forms in the price of the asset. This bubble swells rapidly first through the speculative purchases of the asset by the giant capitalists and then on account of the mass speculative frenzy. The bubble assumes enormous proportions and, finally, collapses when panic sale of the asset begins and the price of the asset crashes.

Similar scenario, as we have delineated in detail in Chap. 5, unfolded in the case of the US also. In the nineties, a huge bubble formed in the stock prices of dot-com (internet) companies, the bubble grew rapidly and finally burst in 2001 pushing the US economy into a recession. The Fed, the central bank of the US, immediately took measures to reduce interest rates substantially. As soon as interest rate dropped, a bubble in house price started growing at a very high rate and it crashed in 2007 perpetrating a devastating economic crisis. The US economy plunged into a very deep recession, with the households and financial institutions in complete shambles. As happened in Japan, the Fed and the US Government rescued the financial institutions; the Fed adopted measures so that the interest rate dropped to as close to zero as possible, and the US Government undertook expansionary fiscal policy to revive the economy. However, the fiscal policy was so designed that it did not revive the US economy fully, but kept it in a desired state of recession. In the nineties, the average annual growth of US GDP was around 4.5 per cent (see Table 7.3). At the present, the average annual growth rate of the US GDP is around 2 per cent. Europe also went through similar experiences. In many European countries, a speculative bubble formed in real estate prices; it swelled rapidly and crashed in 2008 plunging the European countries into a deep recession. European Central Bank and central banks of other European countries took measures to push interest rates down to as close to zero as possible. Governments of European countries also adopted expansionary fiscal policies. However, the fiscal stimulus was withdrawn much before full recovery had taken place, and the economies continued in a desired state of recession (see Table 7.3).

We shall now explain why the giant capitalists want the economies, instead of recovering fully, to remain in a desired state of recession indefinitely. We have done it in Chap. 5. We shall now summarize that discussion here. Recession favours the giant capitalists in various ways. The recession gives the central bank an excuse to keep the interest rates as close to zero as possible. Thus, workers' savings become available to the giant capitalists at the minimum possible interest rate. However, even though risk-free interest rates fall to the minimum possible level, loans become available at the risk-free interest rates only to the giant capitalists. The recession gives the financial institutions controlled and owned by the giant capitalists opportunities to tighten credit standards and raise sharply the risk-premium on loans given to small and medium enterprises so that interest rates faced by them increase steeply. This leads to substantial erosion in their competitive strength and the giant capitalists compete them out and grab their market shares. The recession and the large-scale unemployment that accompanies it ruin the bargaining strength of the workers. This allows the giant capitalists, using their control over the state power and the government, to dilute labour laws and work standards and to incorporate labour saving technological changes without any resistance from the workers.

From the above it follows that, following the disintegration of the Soviet Union, the giant capitalists in the advanced capitalist countries have consolidated their position. They have driven down wages and interest rates to their respective minimum possible levels. They have competed out the small and medium enterprises and monopolized society's production. Thus, most of the people today in advanced capitalist countries live in unemployment or insecure employment paying minimum possible wages; their savings earn minimum possible interest rates so that they are in dire straits in periods of unemployment, illness and old age. Most of the people live in acute poverty and misery today in capitalist societies. Let us illustrate these points with examples from the US economy, the most powerful of the capitalist countries and one of the richest countries in the world. United States Department of Agriculture (2018) estimated that 11.8 per cent of US households were food insecure (i.e., they did not get enough food to eat or very little food to eat) in 2017 and 4.5 per cent of US households had very low food security in 2017. They also reported that over a period of five years from the day the survey began, 51.5 per cent of US households were food insecure for some period in at least one year. U.S. Department of Housing and Urban Development (2018) reported

that in 2017, 17 people experienced homelessness on a given night per 10,000 people in the general population and 65 per cent of the homeless people lived in emergency shelters and the rest in unsheltered locations. However, this estimate of homeless people grossly underestimates the number of homeless people in the US. The reason is the following. Many of the homeless people in the US are homeless only temporarily due to unemployment or low-paying employment. They cease to be homeless as soon as they get employment or better jobs. Therefore, people who are homeless on a given night in a given year are likely to be largely different from those who are homeless on some other given night in the same year. Hence, the number of people who were homeless for at least some short period of time in a given year is likely to be substantially larger than the official estimate reported above. In fact, a study carried out by Reischauer (2000) estimated that between 2.3 million and 3.5 million people in the US experienced homelessness at least for some short period of time in 1999. U.S. Department of Health and Human Services (2016) reported that 10.3 per cent of people under age 65 did not have any health insurance in the second quarter of 2015. Given the very high cost of health care services in the US, a person without health insurance does not get any access to health care services. The data given above are indicators of extreme poverty and deprivation. From these indicators, one may reasonably guess that most of the people live in considerable poverty and misery even in the most powerful and one of the richest capitalist countries of the world.

7.2.3 Religion and Neoclassical Economics: The Two Instruments of Mass Hypnosis

To obfuscate the real reason for people's misery and poverty, the giant capitalists promote religion and a specific school of economics called the neoclassical economics. Religion says that all our sufferings are on account of our misdeeds either in this incarnation or in past incarnations, and if we in the present incarnation lead a hardworking, honest, peaceful and pious life dedicated to God, we shall enjoy eternal bliss in heaven after our death or a luxurious and comfortable life in our next incarnation. Global capitalists and the political parties under their control, accrordingly, fund and promote religion and religious institutions to bring the masses in the fold of religion.

Neoclassical economics says that a capitalist economy has a mechanism that automatically brings about full employment of all the workers and full

utilization of productive capacities of all the firms. Hence, there is no reason to worry about unemployment or productive capacities remaining unutilized. Such problems may arise, but, according to neoclassical economics, they will get corrected within a reasonable period of time. It also argues that if the government intervenes to remove these problems, it either will be completely ineffective or do harm by slowing down the automatic corrective mechanism. This consoles the unemployed workers with the hope that their period of unemployment will soon be over. An illusion to that effect is also created in the following manner. In capitalist societies, workers work in insecure employment, without any job security. Employers can fire and hire whenever they want. As a result, there is a high degree of mobility from the pool of employed workers to that of unemployed workers and back so that a worker goes through alternating phases of employment and unemployment all through his working life. In other words, in a capitalist society, instead of a specific large section of the labour force being unemployed chronically, the unemployment is shared by all so that a worker on the average may not remain unemployed for long. This creates an illusory impression on a worker on the average that the market automatically takes care of unemployment vindicating neoclassical economics. In consequence, the lack of adequate access to food, clothing, shelter and health care, instead of affecting a given section of workers chronically, is shared by all the workers. Neoclassical economics also says that if a capitalist economy is left to itself, it will not only employ all the workers and utilize fully the productive capacities of the firms but also bring about an optimal allocation of resources, that is, it will produce all the different goods and services in optimum quantities and distribute them among individuals in an optimum manner. In sum, neoclassical economics recommends the policy of free market or laissez-faire under which the government should allow a capitalist economy to function on its own. The real motivation of this policy prescription is to create a theoretical ground on the basis of which the governments in capitalist countries can follow the free market policy so that the giant capitalist get a free hand in managing and running capitalist economies in their own interest. As regards the proposition of the neoclassical economics that a capitalist economy left to itself brings about an optimal allocation of resources, the following point should be noted. In reality, if allocation of resources is left to market forces, resources will get allocated in accordance with the purchasing powers of the people, that is, most of the produced goods and services will be bagged by the rich or, to put it differently, most of the productive resources of the society will be utilized to

cater to the needs of the rich, who constitute a miniscule section of the population, leaving very little for the poor.

In the capitalist countries, incomes of the giant capitalists or incomes of the rich are taxed at the minimum possible rate. In India, for example, the marginal income tax rate (or, simply, the income tax rate) has gone up by 30 per cent from an annual income of Rs. 2.5 lakh to an annual income of Rs. 10 lakh. Thus, the income tax rate has gone up on the average at the rate of 4 per cent for every additional annual income of Rs. 1 lakh between the annual income of Rs. 2.5 lakh and the annual income of Rs. 10 lakh. Surprisingly, the tax rate stopped increasing from the annual income of Rs. 10 lakh onward. This is all the more disconcerting in view of, as we have already noted, the extreme inequality in the distribution of income and wealth that characterizes Indian economy. Neoclassical economics develops theories justifying this kind of extremely unjust income tax structure. The most influential work in this area was made by Laffer (see Wanniski (1978) in this context).

We described above how the giant capitalists mount speculative attacks on asset markets of different countries to rob the workers of a part of their savings and destroy their bargaining strength to grab the remaining part of their savings and labour at minimum possible prices and compete out the small and medium producers. Neoclassical economics develops theories to portray this kind of extremely violent predatory behaviour of the global financial institutions under the control of the global capitalists as quite harmless and shorn of any ill motive and likens it to that of a herd of sheep (see, e.g., Banerjee (1992)). Clearly, global capitalists fund and promote neoclassical economics and its practitioners.

No wonder, religion and neoclassical economics are ubiquitous in capitalist economies today. Neoclassical economics is the only kind of economics that we find in the syllabuses of all universities, colleges and schools today in capitalist countries. Students today in the capitalist countries hardly hear of Marxian economics.

7.3 The Way Out of Capitalist Exploitation and Moving Towards Establishing Socialism

The objective of every civilized society should be to develop and utilize the human resources of the country to the fullest possible extent. To achieve this goal, every individual should be provided with a socially gainful job that best suits his ability and every individual should have access to quality basic food,

clothing, shelter, health care and education in adequate quantities. To achieve this in minimum time, obviously, all the productive resources including all the workers in the labour force should be employed to produce the goods and services mentioned above. This implies that leakages of scarce productive resources into the production of luxury items of consumption and investment should be stopped completely. To accomplish this, the government should tax away all the surplus income of the rich, impose ban on production of luxury goods and directly take part in the production and distribution of the essential goods to make sure that all the workers of the labour force and all the non-labour resources get fully utilized to produce the desired bundle of goods and the produced bundle of goods gets distributed among the individuals in the desired manner.

In contrast, if the neoclassical prescription of laissez-faire is followed, most of the resources will get utilized to cater to the needs of the rich constituting a miniscule section of the population leaving very little for the rest of the population. There will also emerge a large and growing pool of unemployed workers eroding rapidly the bargaining strength of the workers. Obviously, this violates all norms of a civilized society.

From the above it follows that to form a civilized society one has to put a stop to commodification of state power. Political parties have to be given an opportunity to represent the masses. To achieve it, all sorts of private funding of political parties should be declared illegal and the government should create infrastructure and facilities so that all political parties get equal opportunities for making their policies and views known to people free of cost. The masses have to be made aware of the real reasons for their misery and plight so that they get united and spontaneously make demand for the political reform noted above. This political reform is the necessary first step for achieving true political equality, which will abolish economic inequality and establish a civilized society.

7.4 The State of the Erstwhile Colonial Countries like India

We explained in Chap. 3, while presenting the theories of imperialism of Hobson, Lenin and Luxemburg, that capitalism was expansionist right from its birth. The giant capitalists of West Europe and the US, using their hold over state powers, colonized the whole world by the time World War I had begun. To increase profit, it was necessary to increase sales or the market size and establish monopoly rights over sales in the market.

Competition restricts the market size and lowers profit margin. Catering to larger markets requires larger production, which in turn needs larger supplies of raw materials and labour. By conquering a country and making it a colony, the conqueror can establish monopoly rights over sales of his products and purchase of raw materials and labour in the colony by destroying indigenous competition and disallowing entry of foreign competitors. Acquiring monopoly rights over sales and purchases, the conqueror can sell his products at the highest possible prices and purchase inputs at the lowest possible prices in the colony. This is the reason why the giant capitalists, through their hold over state powers, went on an imperialist spree and colonized almost the whole of the rest of the world. However, the giant capitalists were a divided lot; they were divided in accordance with their nationalities. They fought with one another two world wars for larger shares of the colonies. These world wars weakened the giant capitalists considerably. After World War I, Emperor Tsar of Russia became so weak that the Bolsheviks (communists) overthrew him and took over power establishing the first socialist state in the world on Marxist-Leninist lines. The socialist state born in Russia, as we have explained in Chap. 6, eventually grew into a much larger state, the state of the Soviet Union. Economic development of the Soviet Union was spectacular. After World War II, which the Soviet Union helped the Allied powers to win defeating Germany, it emerged as a superpower in the sphere of not only military but also knowledge, science and technology. The stupendous economic success of the Soviet Union and its rise as a superpower strengthened and inspired workers' movements and socialist parties and forces all across the world. Thus, after World War II, socialism became a viable alternative to capitalism and posed a grave threat to the capitalist powers. Threatened with extinction, the giant capitalists shed their differences and got united to destroy the Soviet Union. World War II also devastated the major capitalist countries. The giant capitalists, therefore, set themselves to two major tasks after World War II: those of reconstructing their countries and destroying the Soviet Union. They had to utilize all their resources for accomplishing these two tasks so much so that they had no more resources left for containing the rising nationalist movements in their colonies and, thereby, retaining their hold over them. Hence, they granted them independence. However, before giving the colonies independence, the giant capitalists devised strategies to weaken the colonies considerably so that they could exercise control over the colonies indirectly. In case of India, they followed divide and rule policy,

funded and promoted communal parties and forces to weaken nationalist movements and finally, before granting independence, divided the country into India and Pakistan (see in this connection Dutt (1970), Khan Durrani (1944) and Stewart (1951), among others). After gaining independence, Pakistan sided with the capitalist powers, while India allied with the Soviet Union. India adopted Soviet model of planned economic development and sought to develop India economically through Five-Year Plans and set socialism as the goal to achieve.

The Indian version of the Soviet model of planned economic development that India adopted is known as Nehru-Mahalanobis Strategy. It had two major objectives. One major objective was achieving self-reliance, which meant eliminating dependence on imports by developing the capability of producing all the different goods and services India needed. The strategy emphasized on developing basic and heavy industries, which were highly import intensive. The objective of self-reliance makes eminent sense because it is necessary for a country like India to remain independent. Let us explain. First, note that imports have to be financed with exports. Since a country like India does not produce anything indispensable and exclusive and since close substitutes of the goods a country like India produces are available everywhere else at the same or lower prices, its bargaining strength in the world market is nil. How much it can export, therefore, depends crucially on foreign countries' whims. Under such circumstances, to export on the required scale, it may have to act in accordance with the dictates of the importing countries and, thereby, may have to compromise its autonomy and independence.

The other major objective of the Nehru-Mahalanobis Strategy was to provide the masses with quality food, clothing and shelter in adequate quantities at affordable prices and create a universal education and health care system so that everyone gets access to health care and education on the scale one needed or wanted them free of cost. Clearly, this should be the objective of economic policies in every civilized society.

The Nehru-Mahalanobis Strategy imposed stringent restrictions on the economic activities of individuals and firms such as production, consumption, investment, export, import and so forth. The purpose was to make sure that all the resources get utilized to produce only those goods and services that were necessary to realize the goals mentioned above.

India, however, could not sustain the Nehru-Mahalanobis Strategy for long. She had to give it up in 1991. We identify two major reasons for this failure. First, the choice of the strategy was wrong. India did not choose a strategy, which it could implement using its own resources. For example,

a strategy centred on the development of agriculture, village and cottage industries fortified with intense R&D efforts to improve their productivities using resources available indigenously might have been a feasible strategy; instead, Nehru-Mahalanobis Strategy emphasized on the development of heavy and basic industries, which were highly import intensive. Since India's export potential was very low, it had to depend upon foreign assistance for implementing the strategy right from the very beginning. Therefore, the rate at which the strategy could be implemented depended on the rate of inflow of foreign assistance, which came in a large measure from the advanced capitalist countries under the control of the global capitalists. Hence, the global capitalists controlled the rate of implementation of the strategy right from the very beginning. Second, the strategy did not put any emphasis on creating an independent and original base of knowledge and technology. A country can never devise ways and means of eliminating its dependence on imports without achieving the capability of developing its own independent and original knowledge and technology. Imported knowledge and technology are never state-of-the-art, nor are they designed to make the importing country self-reliant. A country dependent on imported knowledge and technology can never be self-reliant or internationally competitive. Socialist countries such as the Soviet Union and China, as we have pointed out in Chap. 6, invested heavily in developing their own knowledge and technology. This is how they tried to achieve independence in the sphere of knowledge and technology right from their very birth and they achieved independence in this sector.

The question that, therefore, emerges is why India made the two errors noted above? The only explanatory hypothesis that we can suggest is the following. The global capitalists never wanted India to be self-reliant and independent. They threatened India with war through Pakistan and, thereby, forced India to make the above-mentioned two errors. The Indian leadership at that time, in our view, did not want the development process to be disrupted by war. Hence, they did not want to take any risk despite the support extended by the Soviet Union. Perhaps they wanted India to attain certain level of development and gather some economic and military strength before risking embarking on an independent development path. However, India never got that opportunity. By the end of the seventies, India more or less developed the capability of producing all the industrial goods that it needed. Until the end of the seventies, India never borrowed externally from commercial sources to expedite its development process. It only sought and accepted foreign aid. However, from

the beginning of the eighties, it threw all caution to the wind and started borrowing from abroad heavily from commercial sources and relaxed the restrictions on imports considerably. India did so with the explicit purpose of modernizing its existing industrial facilities. It was argued that the existing facilities were not cost efficient, and modernization was absolutely essential to be internationally competitive. Thus, all through the eighties, India imported heavily, ran very large current account deficits and financed them by borrowing from external commercial sources. As a result, its stock of external debt and the amount of external debt-service charges started growing rapidly. In 1990, the Gulf War broke out. It brought about a steep hike in oil prices, which led to a very large increase in India's current account deficit. Right at this point of time, foreign lenders suddenly realized that it was no longer prudent to lend to India. They stopped extending loans to India. This put India in dire straits. India was not in a position to meet its current account deficit. Hence, it had to seek IMF's assistance. IMF obliged. However, in return, it made India give up its Nehru-Mahalanobis Strategy and adopt in its place New Economic Policy (NEP). Thus, India surrendered its policy making autonomy to the IMF, an agency that the global capitalists control through their hold over the state powers of the major capitalist countries.

India's external borrowing spree in the eighties was suicidal and, therefore, constitutes a grave puzzle. Let us explain. India's leadership in the eighties definitely knew that it was never possible to achieve international competitiveness using imported technology, which is never state of the art. By the time the process of modernization is complete, a new set of technologies will come up rendering the facilities built up obsolete or inefficient. A country can achieve international competitiveness or eliminate dependence on imports if and only if it develops the capability of producing its own knowledge and technology. Indian leadership, therefore, knew that modernization through technology import would not add to India's export potential or export earning but bring about a high rate of increase in import bill and external debt-service charges driving India into an external debt trap. It would become completely dependent on the supply of foreign loans on the required scale and, thereby, surrender itself completely to the foreign lenders. Why, then, did the Indian leadership embark on the external commercial borrowing on such a huge scale in the eighties? The only hypothesis that we can suggest is the following: the Soviet Union became considerably weak in the eighties and surrendered to the global capitalists by giving up socialism and embracing capitalism in 1985.

In the eighties, therefore, the Soviet Union was not in a position to give any protection to India. Taking advantage of this situation, the global capitalists through a group of non-resident Sikhs launched a strong separatist Khalistan movement in Punjab (see in this connection Pruthi (2004) and Van Dyke (2009), among others). This very strong and violent movement at the very heart of India, in our view, unnerved the Indian leadership. To save themselves and to save the country, they had to follow the dictates of the global capitalists and had India engaged in external commercial borrowing on an unsustainable scale knowing fully its implications.

7.5 India Under the New Economic Policy (NEP)

The NEP consists in dismantling all the regulations imposed by the previous regime on economic agents' economic activities such as production, investment, consumption, prices, distribution, export and import so that market forces get a free hand in utilizing and allocating the productive resources of the economy. By allowing market forces a free play in utilizing and allocating productive resources of the economy, the NEP seeks to achieve two major goals. First, it gives the global capitalists a free hand in running and managing the economy. Second, it makes sure that the major part of India's productive resources gets utilized to cater to the needs of a miniscule section of the rich. While the first point is quite self-evident, the second point needs to be explained. As we have already pointed out, India is a highly unequal country. To recall, according to the India Inequality Report 2018 published by Oxfam India (2018), only 1 per cent of Indians own 73 per cent of India's total wealth. This estimate has been made on the basis of declared assets only. If undeclared assets were taken into account, the inequality would have been much more extreme. The inequality in the distribution of wealth reflects the inequality in the distribution of income. Thus, only 1 per cent of Indians own around 80 per cent of India's wealth and have in their command about 80 per cent of India's income. If allocation of resources is left to market forces, people with purchasing power will bag most of the resources leaving very little for the poor. Thus, the NEP makes sure that most of India's productive resources get utilized to produce goods and services that meet the needs of just 1 per cent of Indians leaving the rest of the population completely impoverished.

The NEP deepens India's dependence on foreign investment manifold and, thereby, delivers India completely and helplessly in the hands of the foreign investors (global capitalists). Let us explain. We have already pointed to the extreme inequality in the distribution of income and wealth

Table 7.4 Income tax slabs for individuals and Hindu undivided family of less than 60 years of age for the financial year 2018–19

Income tax slab	*Tax rate*	*Health and education Cess*
Income up to Rs. 2,50,000	No tax	
Income from Rs. 2,50,000–Rs. 5,00,000	5%	4% of total tax
Income from Rs. 5,00,000–Rs. 10,0000	20%	4% of total tax
Income more than Rs. 10,0000	30%	4% of total tax

Surcharge: 10% of total income tax for income from Rs. 50 lakh to Rs. 1 crore
Surcharge: 15% of total income tax for income more than Rs. 1 crore

Source: Income Tax Department, Government of India

in India. The NEP has reduced drastically income tax rates on the rich. Now, the income tax rate is capped at 30 per cent (see Table 7.4). From an annual income of Rs. 2.5 lakh to that of Rs. 10 lakh, the income tax rate has increased by 30 per cent, that is, it has increased on the average at the rate of 4 per cent for every additional annual income of Rs. 1 lakh. Shockingly, the increase in the tax rate has stopped at the annual income of Rs. 10 lakh. It has not increased any further. Thus, the incomes of the richest 1 per cent of Indians who have in their command most of India's GDP are taxed at the minimum possible rate. These richest Indians spend their income on luxury goods which are either imported or produced domestically with imported technology and imported inputs. Thus, the extreme inequality in the distribution of income and wealth coupled with the extremely unjust income tax structure make India's consumption, production and investment very highly import intensive. On the other hand, India's dependence on imported technology and knowledge makes India's export potential very low. Therefore, even to sustain a modest level of production, India requires foreign investment on a large scale. This makes India hopelessly dependent on foreign investors and India has to abide by their dictates at every step. India, thus, has become a colony of the global capitalists again.

The NEP has also very significantly reduced the government's command over resources. Let us explain. India's highly unjust income tax structure taxes the incomes of the rich, who have in their command the major part of India's aggregate income, at the lowest possible rate. Moreover, the rich through their hold over the government evade taxes on a large scale so much so that around 70 per cent of India's direct tax collection comes from the salaried people (Government of India 2018). Hence, India's direct tax

collection under the NEP is quite poor. Major part of India's tax revenue comes from indirect taxes, which are highly regressive and unjust. The scope for raising indirect tax collection is also quite limited. This is because hikes in indirect tax rates raise domestic prices, which very substantially reduce export and raise import, since close substitutes of Indian products are available everywhere. The resulting large balance of payments (BOP) deficit sends the exchange rate soaring reinforcing domestic inflation and, thereby, creating considerable instability. The NEP has also put stringent restrictions on government's fiscal deficit, which means government borrowing. All the factors mentioned above have significantly undermined the government's ability to invest in agriculture, R&D, education, health care, finance and public distribution system much to the misery of the common people. The government has to depend upon the private sector to produce all the goods and services and the private sector produces only for the well-heeled people. Thus, the NEP has substantially impaired the government's ability to meet the basic needs of the poor and to invest in education and R&D to develop an indigenous base of knowledge and technology.

7.6 The Way Out

From the above discussion, it follows that the NEP has achieved the following feats. It has made sure that India remains completely dependent on the bounties of the global capitalists so that India remains fully under their control. It has also created a setup such that most of India's productive resources get utilized to meet the needs of the richest 1 per cent of the Indians leaving very little for the rest of the people. Thus, the goals the NEP has achieved are just the opposite of those set by the Nehru-Mahalanobis Programme. The question that emerges is how to get out of this extremely unjust and dependent state. To gain independence and to create a just society, India should strive to achieve the following. First, it has to be self-reliant by eliminating its dependence on imports. Second, it has to make sure that all its productive resources get used to develop the mass consumption good sector and the knowledge and the technology sector at the fastest possible speed. This is necessary to provide every citizen with quality food, clothing, shelter, health care and education on an adequate scale. Investment in the knowledge and technology sector is necessary to devise ways and means of developing the mass consumption good sector on the required scale at the fastest possible speed using only indigenous knowledge, technology and resources. To achieve the goals set out above, all the surplus income of the rich have to be taxed away so that

import, production and consumption of non-essential goods and services fall to the minimum possible level. The resources thus released should be utilized to develop the mass consumption good sector and the knowledge and technology sector at the fastest possible speed. The government will have to take part in the development process directly as planner, producer and investor to make sure that all the available resources get fully utilized in an optimum manner in the desired development programme.

The development plan chalked out above is infeasible in India in the present scenario. All the political parties that matter are funded and run by the global capitalists. Note that the giant Indian capitalists are only faithful local representatives of the global capitalists. Otherwise, they would have been ruthlessly crushed out of competition. Most of the giant Indian capitalists have their origin during the period when India was under the British rule. The giant British capitalists colonized India fighting off other giant European capitalists with the sole purpose of establishing monopoly rights over purchase and sale in India. Obviously, they would not have tolerated emergence of any giant Indian capitalist. They did so only because the giant Indian capitalists were the creations of the giant British capitalists. The former were only representatives of the latter. The Indian giant capitalists ran the businesses of their British counterparts and the arrangement was cleverly disguised. This is the only plausible explanation of why the British giant capitalists who fought tooth and nail their other European counterparts in colonizing India allowed Indian giant capitalists to emerge.

The only solution, therefore, lies in giving the political parties an opportunity of truly representing the masses. They have to be taken away from the clutches of the global capitalists. For that, private funding of all political parties should be declared illegal by the government. Government should create infrastructure and facilities so that all political parties get equal opportunities for making their programmes, policies and views known to people free of cost. Of course, no government will do it of its own free will. To make the government do it, the masses should be made aware of the true cause of their plight. They should get united and force the government to bring about the political reform mentioned above. That is the necessary first step for getting the political equality granted under democracy to lead to economic equality and justice.

If there is a mass uprising forcing the Government of India to undertake the political reforms mentioned above and the masses are able to form their own political party and usurp state power, the global capitalists can mount attacks on India in two ways. First, they can try to destabilize the country by inciting separatist movements. Second, they can declare direct war

against India through its neighbours. The first line of attack is unlikely to work for the following reason. When the masses are with the government, it is not possible to launch and sustain terrorist attacks or separatist movements on the required scale. Regarding the second line of attack, one should note that a country these days needs a strong excuse to wage war against another country. It is not possible these days to find any strong excuse to attack a peaceful and peace-loving country where the masses are happy and contented. The political reforms mentioned above and imposition of taxes at high rates on incomes and wealth or on purchase and sale of non-essential items cannot constitute any valid reason for war.

References

Banerjee, A. V. (1992). A Simple Model of Herd Behaviour. *The Quarterly Journal of Economics, 107*(3), 797–817.

Dutt, R. P. (1970). *India Today* (2nd ed.). Calcutta: Manisha.

Government of India. (2018). *Union Budget 2018–19*. Ministry of Finance.

Khan Durrani, F. K. (1944). *The Meaning of Pakistan*. Lahore: S.H. Muhemmad Ashraf.

Oxfam India. (2018). India Inequality Report 2018. Retrieved from https://www.oxfamindia.org/sites/…/himanshu_inequality_Inequality_report_2018.pdf.

Picketty, T. (2014). *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.

Pruthi, R. (2004). *Sikhism and Indian Civilization*. India: Discovery Publishing House.

Reischauer, R. (2000, February). *A New Look at Homelessness in America*. Washington, DC: Urban Institute Publications.

Stewart, N. (1951). British Policy in Indian History. *Science & Society, 15*(1, Winter), 49–55.

Stiglitz, J. (2012). *The Price of Inequality*. New York: W.W. Norton and Company.

U.S. Department of Agriculture. (2018). Food Security in the US. Economic Research Service.

U.S. Department of Health and Human Services. (2016). 2015 National Health Care Quality and Disparities Report and 5th Anniversary Update on the National Quality Strategy, Agency for Health Care Research and Quality.

U.S. Department of Housing and Urban Development. (2018). Annual Homeless Report (AHAR) to Congress, Office of Community Planning & Development.

Van Dyke, V. (2009). The Khalistani Movement in Punjab, India and the Post-Militancy Era: Structural Change and New Political Compulsions. *Asian Survey, 49*(6, Nov./Dec.), 975–997.

Wanniski, J. (1978). *The Way the World Works*. Polyconomics.

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