

# **Some Aspects of Corruption and Crime in India: A Macro-Theoretic Study**

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**By**

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## **Certified that the Thesis entitled**

**Some Aspects of Corruption and Crime in India: A Macro-Theoretic Study** submitted by me for the award of the Degree of Doctor of Philosophy in Arts at Jadavpur University is based upon my work carried out under the Supervision of Dr. Ambar Nath Ghosh, Professor, Department of Economics, Jadavpur University. And that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere / elsewhere.

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**Dedicated to my parents**

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# Chapter 1

## Introduction

### 1.1 Introduction

**The objective of this Ph.D. thesis** is to examine theoretically the macroeconomic implications of some aspects of corruption and crime in India. It has three core chapters: Chapters 2, 3 and 4. Chapter 2 examines how corruption manifested in the form of tax evasion is likely to affect the growth rate and the rate of inflation in India. It also examines how tax evasion affects the well-beings of the rich and the poor. Chapter 3 focuses on the recent increase in the incidence of bank frauds in India and the measures that have been adopted to contain them. Finally, Chapter 4 inquires into the origin of organized crime in India and how it helps the big businessmen to expand their business empires at the expense of the small producers. In what follows, we will introduce each of these three chapters.

### 1.2 Chapter 2: Corruption and Growth in a Country like India

The objective of this chapter is to examine how corruption manifested in the form of tax evasion affects growth and inflation and the well-beings of the rich and the poor in India in macro-theoretic frameworks suitable for India. In this endeavour, to put our study in the sharpest possible relief, we have first abstracted from foreign trade, and, then, brought it in.

We have first developed an aggregated model for a closed economy that belongs to the tradition set by Keynes (1936) and Kalecki (1954). In the model, aggregate planned demand for produced goods and services determines aggregate output or real GDP and prices are set on the basis of the average variable cost of production. In the specification of the aggregate demand function, we have incorporated the relevant salient features of the Indian economy.

We have, then, extended the framework developed above to consider a disaggregated set up where the economy is composed of an unorganized sector and an organized sector. The latter is made up of the public sector, the non-government corporations and other large private enterprises. The former consists of the small producers. The giant businessmen who control the corporate sector are called the capitalists. The capitalists, their entourage of large businessmen who own and control the large unincorporated enterprises and the high-skilled workers employed in the organized sector constitute the class of the rich. The small producers constitute the unorganized sector. The low-skilled workers engaged in the organized sector and the small producers constitute the class of the poor. In this framework, we examine how tax evasion affects the two sectors and the two classes of people noted above. Finally, we have extended this framework to the case of an open economy.

Several studies have empirically derived the result that corruption is detrimental to economic growth (Mauro, 1995 and Svensson, 2005). However, no theoretical work has been carried out to examine the relationship between corruption and growth. This paper seeks to fill up this gap by examining the relationship between one important and common aspect of corruption,

namely, tax evasion and growth theoretically within a theoretical framework for both closed and open economies. Another reason for undertaking the theoretical work is the following. Many economists have pointed out that the inherent difficulties of collecting good empirical data regarding corruption have made them undertake an analytical and speculative approach (Bardhan, 1997). This has also induced us into our theoretical work. Ghosh and Ghosh (2019, Chapter 8) has also studied in a macro-theoretic framework the likely impact of tax evasion on the growth rate of real GDP in India. We have substantially extended their work. We have incorporated into our framework the significant role that government consumption expenditure plays in increasing the quantity and improving the quality of the infrastructure services in India. This assumption makes tax evasion produce considerable impact even if we abstract from foreign trade. Given the assumptions of Ghosh and Ghosh (2019), tax evasion will not produce any impact on the real GDP or the price level in a closed economy. We have also extended our framework to study how tax evasion affects the rich and the poor and the organized sector and the unorganized sector in India.

### **1.2.1 The Impact of Tax Evasion in an Aggregated Framework**

In the first model that we have developed, the economy is considered as a whole. We have also abstracted from foreign trade to first examine the effect of tax evasion in the simplest possible framework. Incorporation of foreign trade is unlikely to change the results qualitatively. The major result that this model has yielded is the following:

**Proposition 2.1:** In India, it is highly likely that following an increase in the rate of tax evasion, there will take place a cumulative contraction in real GDP and a cumulative increase in the price level. Thus, the rate of growth of real GDP is highly likely to be a decreasing function and the rate of inflation an increasing function of the rate of growth in the rate of tax evasion.

### **1.2.2 The Impact of Tax Evasion on the Rich and the Poor**

To study the impact of tax evasion on the rich and the poor, we consider a disaggregated set up where the economy is composed of an unorganized sector and an organized sector. The latter is made up of the public sector, the non-government corporations and other large private enterprises. The small producers constitute the former. The people engaged in production in the organized sector are divided into two classes: the rich and the low skilled workers. The former consists of the capitalists (who are just a few in numbers and control the corporate sector), the capitalists' entourage of large businessmen running the large unincorporated private businesses and the high-skilled workers. The low skilled workers and the small producers constitute the class of the poor. Our study yields the following result:

**Proposition 2.2:** An increase in the rate of tax evasion will lead to a cumulative fall in government consumption and the output of the unorganized sector leading to substantial impoverishment of the poor. There are also strong reasons to believe that the capitalists will raise their consumption and investment so that the resources released from the production of the output of the unorganized sector and government consumption gets utilized for their own benefit.

We have also extended the model stated above to incorporate foreign trade. The result remains qualitatively the same despite this extension.

### **1.3 Chapter 3: Economics of Bank Frauds in India**

Chapter 3 examines in macro-theoretic frameworks that, we hope, capture all the relevant salient features of India, the short run implications of bank frauds in India. We summarize here the study carried out in Chapter 3.

#### **1.3.1 Introduction**

At the present, bank frauds have become a matter of grave concern. There has taken place a sharp increase in the incidents of bank frauds even if we ignore the frauds involving thousands of crores of rupees perpetrated by Vijay Mallya and Nirav Modi on the public sector banks. Data that have been released recently suggest that bank frauds are quite pervasive in the banking sector in India and these frauds take place principally in the PSBs. The cases of bank frauds, as reported by The Annual Report 2018-19 of the RBI (2018-19, pp.122-123), rose steeply by 15 percent in 2018-19. There took place a 73 percent rise in the defrauded amount of money from Rs.382608.7 million to Rs.645094.3 million. The PSBs lost more than ninety percent of the defrauded amount and larger than half of this defrauded amount was related to the loans given by the banks. The large borrowers were responsible for more than eighty-five percent of the non-performing assets (NPAs) of the banks (RBI (2018)).

Thus, it seems reasonable to assume that bank frauds were principally perpetrated by the large borrowers. It is quite sensible to argue that only the richest of the rich and the most powerful of the people can perpetrate bank frauds and get away with them. Therefore, bank frauds on such a wide scale principally by large borrowers strongly suggest corruption on the part of the high-level bank officials and government officials in power. The defrauded part of the advances instead of creating the targeted assets was used illegally for other purposes. They might have been utilized to purchase (i) domestic assets such as land or (ii) foreign produced goods such as precious metals, gems, jewelry or (iii) foreign physical assets or foreign financial assets. One of the major objectives of this chapter is to examine how corruption driven illegal diversion of bank advances to purchase goods and assets noted in (ii) and (iii) is likely to affect the macroeconomic performance of India.

PSBs were afflicted with the problem of non-performing assets for long due principally to the recession that started in 2011-12(refer to Tables 3.1 and 3.2 in Chapter 3). The corruption driven bank fraud also seems to have started since then. However, the real magnitude of the problem came to light only in 2015-16. Chandrasekhar and Ghosh (2018) points out that the RBI gave some leeway to banks in classifying assets. This allowed banks to conceal at least in part actual and potential non-performing assets (NPAs). However, the RBI changed its stance in 2015. It suddenly tightened the definition of bad loans and non-performing assets and asked the banks to reveal their NPAs. As a result, in the latter half of 2015, the proportion of NPAs in the total loans extended by the PSBs increased steeply. To resolve this problem, the RBI resorted to

Prompt Corrective Action (PCA) against some of the PSBs. In consequence, their ability to lend declined significantly. In June 2017, Government of India (GoI) placed in the parliament Financial Regulation and Deposit Insurance (FRDI) Bill, which proposed to empower troubled banks to use depositors' money to remain solvent. All these measures on the part of the RBI and GoI made the bank customers scared and their faith in the PSBs was badly shaken. Another major objective of this chapter is to examine the macroeconomic implications of this kind of measures in India.

Theoretical literature on macroeconomic implications of bank fraud is virtually non-existent in Indian context. To the best of our knowledge, Ghosh and Ghosh (2019, Chapter 8) is a pioneering work in this area. We have extended their work in several directions. Hence, this work fills up an important gap in the literature.

To accomplish the objectives noted above, we will develop models that, we hope, capture all the relevant salient features of India.

### **1.3.2 The Model**

The open economy model we use here is a modified version of the one developed in Ghosh and Ghosh (2019, Chapter 8). Following the tradition set by Keynes (1936) and Kalecki (1954), we assume that aggregate output of goods and services or GDP is determined by aggregate final demand for goods and services and prices are set by applying a mark-up to the average variable cost of production.

We assume here that demand for banks' new loans comes from the investors only. They finance their entire investment with new bank loans. Some of the investors are also bank frauds. We have also pointed out above with data that the large borrowers are principally responsible for bank frauds. They secure loans from the public sector banks (PSBs) to make some specific investments. However, instead of making the stated investments, they use it illegally in the cases we consider here to purchase foreign physical or financial assets. The modus operandi of these fraud investors may be the following. The frauds give donations to highly placed government officials and overstate their planned investment. They use the loans secured to finance the overstated part of their investment to buy illegally domestic or foreign assets. These loans are never repaid. The government officials receiving the donations make sure that the PSBs accept the excuses of the defaulters for not being able to repay the loans and write-off the loans. Let us illustrate this point with an example. Suppose an investor plans to set up an enterprise worth Rs.20,000 crore. However, he overstates its value by Rs.20,000 crore and secures a loan of Rs.40,000 crore from a PSB and pledges the enterprise as the collateral. Given the donations given to the government officials, the PSB turns a blind eye to this overstatement of the value of the enterprise. After running the enterprise for a few years, the borrower declares it bankrupt. Usually, it seems, these fraud investors take these loans in times of boom and declare their enterprises bankrupt when recession starts. At least that is what seems to have happened in India in the period we consider here. The bank takes possession of the enterprise and the obligation of the borrower ends there. The bank sells off the enterprise and writes off

the rest of the loan. All this happens smoothly because of the donation. This is corroborated by the following quote from Chandrasekhar and Ghosh (2018): “Evidences regarding recovery of NPAs of PSBs also suggest that the problem of corruption is quite widespread. NPAs are reduced in three ways: actual recoveries, upgradation or conversion of NPAs into paying assets through restructuring and compromises or write offs. Share of write offs in PSBs rose from an already high 41 percent in 2014-15 to 46 percent in 2015-16. In 10 cases of resolution under the Insolvency and Bankruptcy Code (IBC) reported in the Economic Survey 2017-18, the claims of financial creditors were met in full only in one (Prowess International), where the claim was quite small. For the rest, the extent of recovery varied from 6 percent to 58 percent, with only two recovering more than 50 percent.” Note that the corporate investors started defaulting on their loans with the beginning of recession from 2011-12 and the ratio of the stock of NPAs of the PSBs to their total loans started to rise (refer to Table 3.1 in Chapter 3). The loans the corporate investors started defaulting on were taken during the period of boom 2003-04 – 2010-11.

Our model yields the following result:

**Proposition 3.1:** If by giving donations to the government officials it becomes possible for the capitalists to divert illegally a part of the new PSB loans from the creation of the assets for which the loans are taken to the purchase of foreign assets, it will lead to an expansion of GDP and employment in the short run.

However, if we incorporate into the model presented above the relevant salient features of India, the result noted above will get reversed. The relevant salient features of India are the following: India requires large amounts of imported goods for the purpose of both production and investment. The reason may be explained as follows. India is hopelessly dependent on the Western European countries and the USA for all its knowledge and technology. The books and journals and the high-tech machines and software that the teachers and researchers use in India come from these countries. Similarly, all the high-tech machines and software used in any production or distribution facility in India are sourced from these countries. Moreover, the technologies India use have made India’s production highly intensive in the use of imported intermediate inputs. Even though India is a price taker in the world market, its exchange rate varies a great deal. An increase in the exchange rate raises the average variable cost of production and, thereby, the domestic price level substantially. An increase in the exchange rate also makes imported capital goods costlier. This, given expectations, lowers investment. Hence, the domestic price level is made an increasing function of the exchange rate and investment is made a decreasing function of the exchange rate. The domestic price is also made a decreasing function of the domestic real GDP. The reason is the same as that in the previous chapter. A fall in the real GDP lowers government’s tax revenue and, thereby, government’s consumption expenditure. A fall in government’s consumption expenditure for reasons explained in Chapter 2 raises the price level. Since India uses only imported knowledge and technology, close substitutes of almost all the goods and services India produces are available everywhere else. Accordingly, it is reasonable to assume that India’s net export is highly price elastic. However, its exchange rate elasticity is likely to be insignificant since an increase in

the exchange rate raises the domestic price substantially and, thereby, leaves the real exchange rate more or less unaffected. Accordingly, we have made the real exchange rate an increasing function of the real GDP only.

We have made the nominal exchange rate a decreasing function of the real GDP and an increasing function of donations for the following reasons. An increase in the real GDP produces two opposite effects on net export. On the one hand, the fall in the price level that an increase in real GDP induces leads to a large increase in net export. On the other hand, the increase in capitalists' and government's incomes raise their demand for imported consumption goods lowering net export. Given the likely very high price elasticity of net export, we consider it reasonable to assume that the expansionary impact on net export dominates the dampening effect and the nominal exchange rate falls. An increase in donations raises PSB frauds and, thereby, illegal demand for foreign assets creating a BOP deficit. Hence, the nominal exchange rate rises.

Given these assumptions, our analysis yields the following proposition:

**Proposition 3.2:** Unlike what happens in the standard case, if the fraction of PSB loan illegally used to purchase foreign assets increases, in all likelihood there will take place a large and cumulative decline in domestic real GDP in India bringing about a sharp fall in the growth rate from the previous period to the given period. This will cause immense suffering to the workers and small and medium producers.

### 1.3.3 Bank Frauds, Tightening of Norms Defining Nonperforming Assets and PSBs

Nonperforming Assets (NPA) started rising at a fast rate in the PSBs since 2011-12 (see Tables 3.1 and 3.2 in Chapter 3). However, RBI & GOI through measures such as restructuring of loans etc. kept NPAs hidden until 2015. In 2015, suddenly the RBI tightened norms for defining non-performing assets and forced the PSBs to disclose all their NPAs. As a result, the stock of NPAs in the PSBs jumped up substantially (see Table 3.1 in Chapter 3). Fear of the PSBs becoming insolvent began to haunt people. We have examined the impact the scenario just noted is likely to produce on the growth rate and the business and equity price of the PSBs.

Our analysis yields the following proposition:

**Proposition 3.3:** If being bribed by the capitalists, the government officials through the RBI force the public sector banks to disclose all the non-performing assets which they were initially allowed to hide, there will take place a very large and cumulative contraction in real GDP causing immense suffering to the workers and small and medium producers.

The very large fall in the real GDP will lead to a further sharp increase in *the stock of non-performing assets of the PSBs*. This will induce the workers to transfer their savings from the PSBs to the private banks and other assets. This will reduce PSBs' deposits, profit and equity prices drastically. This will give the government an excuse to sell off the PSBs at throwaway prices to the capitalists. The fall in the real GDP will hurt the private banks also. It will, however, be compensated to a large extent, if not fully or more than fully, by the transfer of

deposits from the PSBs to the private banks. Even if the capitalists lose due to the fall in the real GDP, their loss is only temporary for very large long-term gains that the acquisition of the PSBs will engender.

### **1.3.4 Conclusion**

After carefully studying the available evidences, we argue in this chapter that the capitalists, who own and control India's corporate sector, devised a strategy to monopolise the banking sector, which is now dominated by the PSBs. They paid hefty donations to highly placed government officials and borrowed heavily in times of booms (covering the period 2003-04 – 2010-11) from the PSBs to set up specific production units. However, they overstated substantially the values of the specific firms to be set up and, thereby, borrowed much more than what was needed to set up the targeted firms. They illegally diverted the excess PSB loans from the creation of the targeted firms to the purchase of other domestic and foreign assets. We have shown here that, if a part of the PSB loans instead of being used to build the targeted firm is used to purchase foreign assets, there will take place a large contraction in GDP drastically reducing India's growth rate. This will heap immense suffering on the workers and small and medium producers. We assume that the donations make this illegal diversion of PSB loans possible.

The capitalists ran the firms set up with PSB loans for some years. Then, when the recession set in since 2011-12, declared their firms, which were pledged as collateral to the PSBs, bankrupt giving the excuse of recession. The PSBs took over the bankrupt firms. However, by selling them, they could recover only a small part of their dues. They had to write off the rest of the dues. To produce a dramatic effect on the public, the capitalists gave donations to the government officials to make the RBI adopt the following strategy. It initially allowed the PSBs to hide a large part of their nonperforming assets (NPAs) and when the hidden NPAs assumed a substantial volume, tightened the norms for defining NPAs and forced the PSBs to suddenly declare their NPAs. As the NPAs of PSBs increased steeply, the RBI adopted punitive measures against them and made such comments and observations that the people became very much apprehensive about losing their savings parked with the PSBs. Our analysis in this chapter shows that in such a scenario, there will be a cumulative contraction in real GDP, PSBs' business will contract sharply and their profit and equity prices will plummet precipitously. This will give the government an excuse to sell off the PSBs to the capitalists at throw away prices on grounds of efficiency.

The increase in the NPAs in the PSBs cannot be attributed to their inefficiency relative to that of the Indian private banks. The reason may be briefly stated as follows: Data given in Tables 3.1 and 3.2 in Chapter 3 reveal that, with the beginning of recession from 2011-12, the ratio of the stock of NPAs of the PSBs to their total loans started to rise, even though domestic private banks remained free of this problem. This calls for an explanation. The recession caught Indian firms, PSBs and Indian private banks completely unawares. No national or international forecasting agencies such as the RBI or IMF made any prediction about the impending recession. The recession, as should normally be the case, led to an increase in the loan default



rate. However, surprisingly, the increase in the default rate was confined to the PSB loans in the main. This cannot be explained on grounds of efficiency. Neither the PSBs nor the Indian private banks could predict the recession. They were equally inefficient in this respect. Since these two types of banks could not predict the recession, it was not possible for them to predict what form it would take, that is, how it would affect different sectors and firms of the economy. Therefore, it is not possible to attribute Indian private banks' success in withstanding the onslaught of recession to their efficiency relative to that of the PSBs. One should also note in this context that most of the banks and financial institutes of the US, which were all private, were either bankrupt or on the verge of bankruptcy following the collapse of the house price bubble in 2007. Moreover, in recent years, bank frauds are rising at an alarming rate and these frauds are, again, confined principally to the PSBs. Finally, the large increase in the stock of nonperforming assets of the PSBs is principally due to loan defaults by large or corporate borrowers. All this suggests that the plight of the PSBs is due to a conspiracy hatched by the capitalists to discredit them and, thereby, to take them over at throwaway prices.

#### **1.4 Chapter 4: Macroeconomics of Corruption and Crime in India**

The objective of this chapter is to explore the macroeconomic implications of the link between corruption and crime using a macro-theoretic model that we hope captures the salient features of developing countries like India. There is a vast literature on the interlinkage between corruption and crime starting with the pioneering work of Becker (1968) and Becker and Stigler (1974) and followed by such studies as Besley and MacLaren (1993), Mookherjee and Png (1992), Bowles and Garoupa (1997), Chang et al. (2000), Kugler et al. (2003), among others. The principal objective of these partial equilibrium microeconomic studies is to suggest ways of curbing these illegal activities. There also exist a large number of studies that have explored the impact of corruption linked crime on growth. For a comprehensive survey of the literature, one may go through Powell, Manish and Nair (2010). The principal result of this literature is that the impact of corruption linked crime on growth is ambiguous and empirical works also find no relationship between the two. These studies are neoclassical and couched within the framework of endogenous growth. Astarita et al. (2018) extends the post-Keynesian framework to examine the macroeconomic effect of organized crime. The present study undertaken in this chapter, however, is based on a very different presumption regarding how the capitalist world works. It presumes that the capitalist world is completely under the control of the capitalists. It develops arguments to vindicate this presumption. It argues that almost all the developing countries like India were former colonies of Western Europe and the USA and they are at the present completely dependent on the Western Europe and the USA for knowledge and technology. Accordingly, their production and investment are highly import intensive, while their ability to export is extremely limited, since it is not possible to compete in the world market with imported knowledge and technology. Therefore, these countries cannot get themselves going. The capitalists of the Western Europe and the USA, who by our assumption control the capitalist world, get these countries going by placing export orders with them and by buying their financial assets on a large scale (for evidential support of this line of thought in case of India, one can go through Ghosh and Ghosh (2016), Chapter 8). The capitalists, therefore, have these developing countries like India completely under their control. In many

of these developing countries including India, the small producers produce a significant part of the GDP. This chapter argues that the capitalists who wield State Power and own the political parties appoint criminals to extort money and land from the small producers so that the corporate sector can grow at the expense of the small producers. In what follows, we will explain why we have made the above-mentioned claims.

We focus here first on capitalist countries. Western European countries and the USA are the leading capitalist countries in the world. The single most important feature of a capitalist country is the following. The entire production of almost all the goods and services takes place in such a country in just a few very big firms. A handful of businessmen, whom we refer to as the capitalists, run these firms. The capitalists have in their command most of the natural resources of the country. To produce goods and services, they employ workers with wages. The rest of the people, who constitute more than ninety-nine percent of the population, work for the capitalists for their survival. This extremely unjust concentration of wealth in just a few hands makes the lives of both the capitalists and the masses highly uncertain. The survival of a worker depends on whether he gets employment and how much wage income he gets. The capitalists on the other hand have to subjugate the masses to retain their hold over their astounding wealth and business empire. If they fail to rule over the masses, the latter will simply remove them and take possession of their wealth and businesses. The capitalists adopt different means to prevail over the masses. The first and foremost is the following. Since infighting makes them weak and vulnerable, they become united and take over the State Power. In what follows, we recount how they do it.

Capitalist countries have democracies. In a democracy, two or three or more political parties compete for State Power. The adult citizens of the country choose which party will rule over them by casting votes in a General Election, which is held every four or five years. Every adult citizen has the power to cast just one vote whatever be his economic condition. The State Power gets into the hands of that political party that gets the largest number of votes in a General Election. The chosen party enjoys the State Power until the next General Election. Since more than ninety-nine percent of the votes are in the command of the masses, every political party should work for them. To do so, they have to take away the wealth of the capitalists and give it to the masses. They should take over the businesses of the capitalists and run them so that every job seeker gets a job and a good standard of living. Democracy, therefore, is incompatible with the capitalists and capitalism. How do, then, the capitalists and capitalism thrive in a democracy? We give the answer below.

To form a political party, millions of dedicated workers of varying skills have to be employed covering the whole country. Almost unlimited access to all kinds of media is needed too. A richer party can easily outcompete and obliterate a poorer party using better and larger number of brains and muscles. Therefore, only the richest of the people in a country can form and run political parties. Obviously, only the capitalists in a capitalist country have the resources to form and run political parties and they do so to usurp State Power. Using it, they subjugate the masses. (For details of this view, one may go through Ghosh and Ghosh (2019<sup>a</sup>, 2019<sup>b</sup>).

Let us now focus on India. We have already pointed out that India requires imports from the capitalist countries on a large scale to sustain its production and investment. To make imports,

it requires currencies of those countries. However, it produces its goods and services with purchased knowledge and technology, which are always dated and second rate. Therefore, India cannot sell its products to these countries outcompeting other countries. It is the capitalists of the capitalist countries, whom we refer to as the Western capitalists, run India by purchasing Indian goods and Indian bonds and stocks. Since they do not have any access to original knowledge and technology, the Indian capitalists are no match for the Western capitalists. The only explanation for their survival is that they are employees of the Western capitalists and run the Western capitalists' businesses in India. Thus, Indian political parties are also owned and run by the Western capitalists. This is the hypothesis we put forward here and our analysis is based on this hypothesis. (For a historical account in support of this hypothesis, one can go through Ghosh & Ghosh (2019<sup>b</sup>, Chapter 1 and Chapter 7).

Given the hypothesis stated above, the criminals in a capitalist country cannot operate unless they work for the capitalists and enjoy the patronage of the capitalists through the political parties. This is the case because the criminals are no match against the State Power. The objective of this chapter, as we have pointed out above, is to show how the criminals extort money from the small producers so that the business empire of the capitalists can grow at the expense of the small producers.

To accomplish our goal, we have constructed a model, where, in consonance with the discussion made above, the capitalists' control fully the prices, production and demand. This is contradictory to the position of mainstream macroeconomics, where impersonal market forces determine all the macroeconomic variables.

#### **1.4.1 The Model**

Given the basic hypothesis of this study, democracy is a farce and this makes a capitalist society fundamentally corrupt. It follows that the organized crime in a capitalist country can come into existence and thrive only under the patronage of the capitalists. To capture the impact of exploitation of the small producers through criminal extortion, we divide the Indian economy into two segments: the unorganized sector and the organized sector. The small producers constitute the former. The latter, as we have already pointed out, is made up of the public sector, the non-government corporations and other large private enterprises. The organized sector is fully under the control of the capitalists. It meets the consumption demand of the rich. The capitalists, the owners of the large enterprises (other than corporations) and the high-skilled workers in the enterprises and the political parties constitute the class of the rich. The organized sector also meets the investment demand of the capitalists. It also supplies the small producers with intermediate inputs. The capitalists maximize profit by maximizing their command over the output of the organized sector. For this purpose, they raise their investment level at such a level that there takes place full utilization of productive capacity in the organized sector in every given period. The capitalists seek to maximize investment because through investment they make the production process more automatic and set up facilities for producing new luxury consumption goods and deadlier weapons. Automation in production helps the capitalists create unemployment on a large scale. This robs the workers of all their bargaining strength and enables the capitalists to reduce their remuneration to the lowest possible level. The new items of luxury make the capitalists' standard of living better. Better weapons increase

capitalists' control over the masses. Hence, there is no limit to their investment demand. The capitalists determine the prices of their products. They produce the output not only with high-skilled workers but also with low-skilled ones. Henceforth, for the purpose of this model, by capitalists we will mean not only the capitalists but also the high-skilled workers and the large non-capitalist businessmen. The term workers will only mean the low-skilled workers.

Let us now consider the unorganized sector. It consists of small enterprises both rural and urban. Agriculture constitutes a significant part of this sector. Small farmers still own eighty-five percent of land in Indian agriculture (NAABARD (2021)). The unorganized sector produces food and other mass consumption goods in the main. Small producers are poor and they need loans to buy intermediate inputs from the organized sector. However, as they can offer only small amount of collateral, they secure only small amount of loan. In our model, the amount of loan the small producers are able to secure and the prices of the intermediate inputs are two of the most important determinants of the output of the small producers. The producers in this sector produce their output only with family labour by assumption. The capitalists, who seek to take away the businesses and land of the small producers appoint criminals to extort money and other assets from them in various ways.

The small producers do not have the resources to sell their market supply directly to the consumers. They, therefore, sell their market supply to the traders who are enormously mighty financially relative to the small producers. Hence, the traders buy the market supply of small producers at the lowest possible price.

The small producers secure their loans at the beginning of the period under consideration. At the time of securing the loans, the small producers are uncertain about how much loan they will be able to pay back along with interest since they are uncertain about many factors such as the prices at which they will be able to buy the intermediate inputs and sell their market supply, the natural factors, the amount of money the criminals will extort etc. They take the loans on the basis of their expectations. These expectations go awry for some and they default on their loans. The small producers who default on their loans lose the land pledged as collateral. Moreover, an increase in the default rate induces the lenders to reduce their supply of loans to the small producers.

Our study yields the following major result:

If the capitalists using their political parties and State Power ensure that the small producers have to seek the aid of the middle men to secure loans in return for a part of the loan as commission, or if the capitalists appoint criminals to extort money from the small producers at the time of the sale of their market supply or if the criminals loot the land of the small producers, there will take place a cumulative fall in the amount of the output of the small producers and a cumulative decline in the amount of land in the possession of the small producers. As a result, the misery and destitution of the small producers and the low skilled workers of the organized sector will increase immensely. The capitalists will use the resources released from the production of the output of the unorganized sector to raise their investment.

## 1.4.2 Conclusion

This study is based on the hypothesis that the capitalists in the capitalist countries and their satellites like India own the political parties and wield the State Power. It follows from this hypothesis that the criminals who commit crimes and get away with them are employees of the capitalists. In other words, the sector of organized crime is an enterprise of the capitalists. In India, quite a large part of the GDP is produced by the small producers. This study shows how the capitalists by using the criminals can make the output of the small producers shrink and grab their land.

This the capitalists do using legal means as well. We will explore it in our future work.

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## Chapter 2

# Corruption, Macroeconomic Performance and Poverty in India

### Abstract

The objective of the study undertaken in this chapter is to examine how corruption manifested in the form of tax evasion affect growth, inflation and the well-being of the rich and the poor in India in suitable macro-theoretic frameworks. For this purpose, it develops models on the tradition set by Keynes and Kalecki incorporating hopefully all the relevant salient features of India. It derives the result that an increase in the rate of tax evasion will bring about a cumulative decline in real GDP and a cumulative increase in the price level. In other words, the study reveals that in India the rate of growth of real GDP is a decreasing function and the rate of inflation is an increasing function of, among others, the rate of growth of the rate of tax evasion. It also shows that tax evasion will benefit the rich and increase the poverty and destitution of the masses manifold.

## 2.1 Introduction

The objective of this chapter is to examine how corruption manifested in the form of tax evasion affects growth and inflation and the well-beings of the rich and the poor in India in macro-theoretic frameworks suitable for India. In this endeavour, to put our study in the sharpest possible relief, we have first abstracted from foreign trade, and, then, brought it in.

We have first developed an aggregated model for a closed economy that belongs to the tradition set by Keynes (1936) and Kalecki (1954). In the model, aggregate planned demand for produced goods and services determines aggregate output or real GDP and prices are set on the basis of the average variable cost of production. In the specification of the aggregate demand function, we have incorporated the relevant salient features of the Indian economy.

We have, then, extended the framework developed above to consider a disaggregated set up where the economy is composed of an unorganized sector and an organized sector. The latter is made up of the public sector, the non-government corporations and other large private enterprises and the former consists of the small producers. The giant businessmen who control the corporate sector are called the capitalists. The capitalists, their entourage of large businessmen who own and control the large unincorporated enterprises and the high-skilled workers employed in the organized sector constitute the class of the rich. The small producers constitute the unorganized sector. The low-skilled workers engaged in the organized sector and the small producers constitute the class of the poor. In this framework, we examine how tax evasion affects the two sectors and the two classes of people noted above. Finally, we have extended this framework to the case of an open economy.

Several studies have empirically derived the result that corruption is detrimental to economic growth (Mauro, 1995 and Svensson, 2005). However, no theoretical work has been carried out to examine the relationship between corruption and growth. This chapter seeks to fill up this gap by examining the relationship between tax evasion, a common and important form of corruption, and growth theoretically within a theoretical framework for both closed and open economies. Another reason for undertaking the theoretical work is the following. Many economists have pointed out that the inherent difficulties of collecting good empirical data regarding corruption have made them undertake an analytical and speculative approach (Bardhan, 1997). This has also induced us into our theoretical work. Ghosh and Ghosh (2019<sup>a</sup>, Chapter 8) has also studied in a macro-theoretic framework the likely impact of tax evasion on the growth rate of real GDP in India. We have substantially extended their work. We have incorporated into our framework the significant role that government consumption expenditure plays in increasing the quantity and improving the quality of the infrastructure services in India. This assumption makes tax evasion produce considerable impact even if we abstract from foreign trade. Given the assumptions of Ghosh and Ghosh (2019<sup>a</sup>), tax evasion will not produce any impact on the real GDP or the price level in a closed economy. We have also extended our framework to study how tax evasion affects the rich and the poor and the organized sector and the unorganized sector in India.



## 2.2 Impact of Corruption: The Case of a Closed Economy

We seek to explain how tax evasion affects a country like India. However, for simplicity, we first disregard transactions with the rest of the world and consider a closed economy. The model for a closed economy is presented below. As we have already stated, the model that we have developed here belongs to the tradition set by Keynes (1936) and Kalecki (1954). Hence, aggregate planned demand for produced goods and services determines aggregate output or real GDP and prices are set on the basis of the average variable cost of production. Given these assumptions, the equilibrium condition of the goods market is given by the following equation:

$$Y = C[(1 - t(1 - \theta))Y] + I(r, G) + G; 0 < C' < 1, \frac{\partial I}{\partial r} (\equiv I_r) < 0, \frac{\partial I}{\partial G} (\equiv I_G) > 0 \quad (2.1)$$

Let us explain (2.1). Real GDP is denoted by  $Y$ . Aggregate planned demand for produced goods and services is given by the RHS. The first term on the RHS of (2.1) gives the aggregate planned consumption demand of the people. In this first term,  $t$  denotes the tax rate so that  $tY$  is the total tax revenue and  $\theta$  is the rate of tax evasion so that  $\theta tY$  is the total amount of tax revenue evaded by people by paying bribes. Accordingly, the total amount of tax revenue collected by the government is  $t(1 - \theta)Y$  and the total real disposable income of the people is taken to be equal to  $(1 - t(1 - \theta))Y$  for simplicity and without any loss of generality. Note that the payment of bribes is made by one section of individuals to another so that it leaves the aggregate real disposable income of the people unaffected. Aggregate planned real consumption demand of the people is taken to be an increasing function of their real disposable income. The second term is the investment function, where  $I$ ,  $r$  and  $G$  denote aggregate planned real investment demand, interest rate and real government consumption expenditure respectively.

An increase in government consumption expenditure improves law and order and infrastructure services (such as road conditions, traffic congestion, drainage, flood control, speed of disposal of cases in judiciary etc.). All these factors reduce cost of production giving a boost to investment and lowering the price level. So, we have made investment a decreasing function of the interest rate and an increasing function of  $G$ .

In India, the RBI seeks to regulate the interest rate and keeps it at a target level through policies such as the Liquidity Adjustment Facility (LAF), open market operations, marginal cost of fund-based lending rates (MCLR) etc. Hence, we regard interest rate, denoted  $r$ , as a policy variable of the RBI. Thus,

$$r = \bar{r} \quad (2.2)$$

where  $\bar{r}$  is the target level of the interest rate.

Under the New Economic Policy (NEP), Government of India adheres strictly to a fiscal deficit target. Hence, government's consumption expenditure, instead of being autonomous, becomes an increasing function of the government's total tax revenue net of subsidies and transfers. For simplicity, we make  $G$  equal to the total tax revenue collected by the government. Thus,

$$G = t(1 - \theta)Y \quad (2.3)$$

Substituting (2.2) and (2.3) into (2.1), we get

$$Y = C[(1 - t(1 - \theta))Y] + I(\bar{r}, t(1 - \theta)Y) + t(1 - \theta)Y; 0 < C' < 1, \frac{\partial I}{\partial r} (\equiv I_r) < 0, \frac{\partial I}{\partial G} (\equiv I_G) > 0 \quad (2.4)$$

Note that we can solve (2.4) for Y, as it is the only endogenous variable.

Now, we will discuss about the inflation rate. For this, we have to first state how price is formed. Following Kalecki (1954), we assume that the producers set the price by applying a mark-up to the average variable cost of production. One determinant of the average variable cost is the wage rate, which we assume to be fixed in the short run. The other determinant, as we have already explained, is G. An increase in G, for example, enables the producers to produce any given level of output by employing less labour. Since, the average variable cost of production is taken to be a decreasing function of G, we make P a decreasing function of G also. Thus,

$$P = P(G); P_G < 0 \quad (2.5)$$

Putting the value of G (given by (2.3)) in equation (2.5), we get

$$P = P[t(1 - \theta)Y] \quad (2.6)$$

Our model is given by the two key equations (2.4) and (2.6). They can be solved for the two endogenous variables Y and P. We are now in a position to examine the impact of an exogenous increase in  $\theta$ . We do this in the next section.

### 2.2.1 The Effect of an Increase in $\theta$

To examine the impact of a given increase in  $\theta$  on Y and P, we take total differential of (2.4) and (2.6) treating all variables other than Y, P and  $\theta$  as fixed and, then, solving for dY and dP, we get

$$dY = - \frac{(1 + I_G - C')tY d\theta}{1 - [C'\{1 - t(1 - \theta)\} + I_G t(1 - \theta) + t(1 - \theta)]} \quad (2.7)$$

and

$$dP = -P_G tY d\theta + P_G t(1 - \theta) dY \quad (2.8)$$

Let us explain (2.7) and (2.8). Following a given increase in  $\theta$  by  $d\theta$ , at the initial equilibrium Y, tax revenue falls by  $-tYd\theta$  lowering government planned consumption demand and aggregate planned investment demand by  $-tYd\theta$  and  $-I_G tYd\theta$ , respectively, and raising aggregate planned personal consumption demand by  $C' tYd\theta$ . As a result, aggregate planned demand for produced goods falls by  $-(1 + I_G - C')tY d\theta$ . Hence, the producers lower Y in the first round by  $dY_1 = -(1 + I_G - C')tY d\theta$ . The fall in the government consumption expenditure leads to a deterioration in the quality of infrastructure services raising the average variable cost of production. Hence, P rises in the first round by  $dP_1 = -P_G tY d\theta$ . The fall in Y

reduces consumption demand, tax revenue, government's consumption expenditure and investment demand by  $C'\{1 - t(1 - \theta)\}dY_1, t(1 - \theta)dY_1, t(1 - \theta)dY_1$  and  $I_G t(1 - \theta)dY_1$ , respectively. Therefore, aggregate demand for Y goes down by  $[C'\{1 - t(1 - \theta)\} + I_G t(1 - \theta) + t(1 - \theta)]dY_1 \equiv \alpha dY_1$  inducing the producers to lower Y in the second round by  $dY_2 = \alpha dY_1$ . The decline in the government's consumption expenditure in the second round raises P by  $dP_2 = P_G t(1 - \theta)dY_1$ . The fall in Y in the second round will again lower aggregate planned demand for Y by  $\alpha dY_2$  inducing the producers to lower Y in the third round by  $dY_3 = \alpha dY_2 = \alpha^2 dY_1$ . Similarly, P in the third round will increase by  $dP_3 = P_G t(1 - \theta)dY_2$ . These changes are convergent and will eventually come to an end and the economy will be in a new equilibrium (note that we assume  $\alpha$  to be less than unity for reasons of stability). Thus, the total fall in Y and the increase in P that take place from the initial equilibrium to the new one are given by

$$dY = dY_1 + \alpha dY_1 + \alpha^2 dY_1 + \dots = \frac{dY_1}{1 - \alpha} = - \frac{(1 + I_G - C')tY d\theta}{1 - [C'\{1 - t(1 - \theta)\} + I_G t(1 - \theta) + t(1 - \theta)]} \quad (2.9)$$

and

$$dP = P_G tY d\theta + P_G t(1 - \theta)dY_1 + P_G t(1 - \theta)dY_2 + \dots = -P_G tY d\theta + P_G t(1 - \theta)dY \quad (2.10)$$

(2.9) and (2.10) tally with and explain (2.7) and (2.8). Thus, an increase in the rate of tax evasion leads to a cumulative contraction in Y and a cumulative increase in P.

Even though it is not explicitly stated in most of the text books, Keynesian theory or the model on Keynes-Kalecki line presented here seek to explain short period (annual or quarterly, for example) growth rate and inflation rate. Let us explain. The model determines Y and P in a given short period. In this given short period, P and Y of the previous period are known. Therefore, the model determines the rate of growth in Y and the rate of inflation in P from the previous short period to the given short period. An increase in  $\theta$  in our model, therefore, lowers the growth rate of Y and raises the rate of inflation from the previous period to the given period. This means that, other factors remaining the same, the higher the growth rate of the rate of tax evasion over time, the lower is the rate of growth of real GDP and the higher is the rate of inflation over time. The above discussion yields the following proposition:

**Proposition 2.1:** Abstracting from foreign trade, we find that, following an exogenous increase in the rate of tax evasion, there takes place a cumulative contraction in real GDP and a cumulative increase in the price level. Therefore, other factors remaining the same, the growth rate of real GDP is a decreasing function and the rate of inflation is an increasing function of the rate of growth of the rate of tax evasion.

### 2.3 The Impact of Tax Evasion on the Rich and the Poor

To study the impact of tax evasion on the rich and the poor, we consider a disaggregated set up where the economy is composed of an unorganized sector and an organized sector. The latter

is made up of the public sector, the non-government corporations and other large private enterprises, while the former consists of the small producers. We describe the two sectors below:

### The Organized Sector

The output of the organized sector is denoted by  $Y$ . People engaged in the production of  $Y$  are divided into two classes: the rich and the low skilled workers. The former consists of the capitalists (who are just a few in numbers and control the corporate sector), the capitalists' entourage of large businessmen running the large unincorporated private businesses and the high-skilled workers. The low skilled workers and the small producers constitute the class of the poor. To produce one unit of  $Y$ , a fixed  $w$  amount of money income has to be paid to the low skilled workers. Therefore, denoting the total wage income of the low skilled workers in the organized sector in terms of  $Y$  by  $W$ , we get

$$W = \left(\frac{w}{P_Y}\right)Y \quad (2.11)$$

The output of the organized sector is used for purposes of consumption by the rich and the government. It is also demanded for purposes of investment by the capitalists and their entourage of large businessmen. The small producers require it as an intermediate input in their production. To simplify algebra and without any loss of generality, we assume that the rich in the organized sector pay a lump sum as tax. It is fixed in terms of  $Y$  and they evade a fixed  $\theta$  fraction of it. The total tax revenue in terms of  $Y$  collected from the organized sector denoted  $T_Y$  is

$$T_Y = T(1 - \theta) \quad (2.12)$$

Note that it is only the rich and the powerful who can evade taxes by paying bribes or giving donations and get away with it.

$Y$  by assumption is determined by its demand. Therefore, the equilibrium condition of the organized sector is given by

$$Y = c_c \cdot \left[ \left(1 - \frac{w}{P_Y}\right)Y - T(1 - \theta) \right] + I(\bar{r}, \left[ \left(1 - \frac{w}{P_Y}\right)Y - T(1 - \theta) \right], G) + G + aX; \pi \equiv \left[ \left(1 - \frac{w}{P_Y}\right)Y - T(1 - \theta) \right] \quad (2.13)$$

In (2.13),  $c_c$  denotes the fixed marginal and average propensity to consume of the rich. The income of the rich in terms of  $Y$  is  $Y$  net of the total wage income paid to the low skilled workers in terms of  $Y$  and the total tax the rich pay in terms of  $Y$ . Investment ( $I$ ) is made a decreasing function of  $r$ , which, as we have pointed out in the previous section, the RBI keeps at the target level  $\bar{r}$ . We have also made it an increasing function of the income of the rich in terms of  $Y$  denoted  $\pi$ . The larger the income of the rich, the stronger are the animal spirits of

the investors and, therefore, the larger is the investment. For reasons explained earlier, it is also made an increasing function of  $G$ . The output of the unorganized sector is denoted by  $X$ . To produce one unit of  $X$ , the small producers require  $a$  amount of the intermediate input from the organized sector. Hence,  $aX$  is the small producers' demand for  $Y$ .

The Government of India, as we have already pointed out, normally adheres to a strict fiscal deficit target. We assume for simplicity that the fiscal deficit target is zero so that  $G$ , which is the only kind of government expenditure considered here, equals government's tax revenue. The government collects taxes not only from the rich but also from the unorganized sector. We assume that the small producers do not have the resources to directly sell their produce to the consumers. Instead, they sell their produce to the traders at a fixed price  $\bar{P}$  and it is fixed in terms of  $Y$ . Let us explain. We assume for simplicity that the small producers produce their output only with family labour. Hence, the average variable cost of their production is given by  $(P_Y a)$ . The traders fix the price at which they buy the small producers' supply to them by applying a fixed mark-up to it, which is set at the minimum possible level for reasons that we will explain in detail later. Therefore,  $\bar{P}$  is the fixed mark-up times  $a$ . Hence, it is fixed in terms of  $Y$ . The small producers keep a fixed fraction  $k$  of their output for self-consumption and sell off the rest to the traders. We assume that the government collects taxes by way of indirect taxes from the small producers. To keep matters simple, we assume that the government imposes taxes on the traders' purchase from the small producers at the rate  $\tau$  so that the total tax collected from the unorganized sector is  $\bar{P}\tau(1 - k)X$  in terms of  $Y$ . We also ignore the taxes that the traders pay as they sell the small producers' produce to the final buyers for simplicity and without any loss of generality. The total tax revenue collected by the government denoted  $A$  is given by

$$A = T(1 - \theta) + \bar{P}\tau(1 - k)X \quad (2.14)$$

Given our assumptions regarding the fiscal deficit target and government expenditure, the following equation must be satisfied:

$$G = T(1 - \theta) + \bar{P}\tau(1 - k)X \quad (2.15)$$

We have already pointed out that an increase in  $G$  increases the quantity and quality of government services and the services provided by the government supplied infrastructure. It reduces the average variable cost of production and, thereby the price level. (Note that the reduction in the labour requirement of production in private and public sector enterprises made possible by the increase in  $G$  is compensated for by the increase in employment in the government administration and defence so that the aggregate wage income of the low skilled workers corresponding to any given  $Y$  or wage income of the low skilled workers per unit of  $Y$ , denoted  $w$ , is assumed to remain unchanged in the face of variations in  $G$  - see (2.11) and (2.13). The rationale of the assumption may be illustrated with the following examples. If the government employs more labour to maintain internal law and order, it may enable the private producers to employ less labour for their own security. Similarly, if the government employs more labour to improve traffic management and repair of roads, the private producers may be able to carry out any given transportation job using less labour. Again, if the government

employs more labour to make disposal of the cases in judiciary faster, the private producers may be able to handle a given number of law suits with less labour.) We assume that both the money wage rate and the labour requirement of production in the organized sector remain fixed in the short run. From this assumption it follows that

$$P_Y = P(G) = P(T(1 - \theta) + \bar{P}\tau(1 - k)X) \equiv R(X, \theta); \frac{dP}{dG} \equiv P_G < 0, R_X < 0, R_\theta > 0 \quad (2.16)$$

### The Unorganized Sector

Small producers constitute the unorganized sector. Small producers compete with the large producers in every sector in India: food, clothing, shelter, education, health care, finance, trade, hotel and restaurants, servicing and repairing, entertainment etc. However, the single largest component of the unorganized sector is agriculture. According to NAABARD (2021), 85 percent of the arable land in India is still in the possession of the small farmers. The small producers produce their output by assumption with the land and capital they own using their family labour and intermediate inputs bought from the organized sector. Power, fuel, transport and, in case of agriculture, seeds, fertilizer and pesticide are some of the most important of such intermediate inputs. The government provides the unorganized sector producers with infrastructure facilities such as roads, power distribution facility, irrigation, drainage, flood control facilities etc. A cut in government's consumption expenditure lowers the quality and quantity of the services provided by government's infrastructure facilities leading to a decline in the productivity of the other inputs used by the small producers. Given this backdrop, a ceteris paribus increase in the rate of tax evasion leads directly to a cut in the government's consumption expenditure, given the fiscal deficit target of the government. The small producers are small because they have in their command only a given small amount of productive resources. They have very little collateral to offer. Hence their access to loans is extremely limited (see in this context ((Mohan (2006), Golait (2007), Government of India(2014<sup>a</sup>)). Under these conditions, the decline in government's consumption expenditure and the consequent decline in the quality and quantity of the services provided by the public infrastructure facilities lowers the productivity of the given limited stock of inputs in the command of the small producers. Prices of the intermediate inputs bought from the organized sector also increase. Both these factors reduce the output of the unorganized sector. The government collects indirect taxes from the unorganized sector. A decline in the output of the unorganized sector lowers government's tax collection further. Thus, there takes place a cumulative decline in the output of the unorganized sector causing considerable suffering to the poor. In India, the government administers the prices of power, fuel, rail transport etc. (A reduction in the tax collection may also induce the government to raise the prices of these inputs to fulfil the fiscal deficit target. Such a measure will also produce the same kind of effect on the unorganized sector's output. However, we have not examined the implications of such a policy here.) We have sought to capture the scenario chalked out above formally as follows.

The small producers produce X with the land and capital they own along with their own family labour and intermediate inputs bought from the organized sector. They produce their own capital. The government provides them with infrastructure services and inputs such as power, drainage, roads, water etc. X constitutes principally the basic necessities of life and capital

goods such as food, clothing, utensils, implements, animals, shelter etc. A fixed part  $k$  of  $X$  is kept for self-consumption by the small producers and the rest is, as we have said already, sold to the traders. The traders are enormously mighty financially relative to the small producers, who are numerous. Most of their products are perishable and they do not have storage facility. Hence, they have to sell off their products as soon as possible after production. Hence, the traders apply the minimum possible mark-up to the average variable cost of production of the small producers to set the price at which they buy the small producers' produce. The demand for  $X$  in the market comes only from the low skilled workers of the unorganized sector who spend their entire income on it. (We assume for simplicity that the traders only consume  $X$ . However, since they are well-to-do and  $X$  consists of necessary goods, their demand for  $X$  is fixed. Accordingly, we ignore their demand for  $X$ ). Again, for simplicity, we do not bring in the loan market and assume for simplicity that the small producers have a fixed sum of money  $S$  for purchasing intermediate inputs from the organized sector. The output of  $X$  is constrained by the amount of the intermediate inputs the small producers are able to buy.

We will now focus on how  $X$  is determined. We have already pointed out that the output of  $X$  is constrained by the amount of intermediate inputs the small producers are able to buy from the organized sector. Since one unit of intermediate input can produce  $\left(\frac{1}{a}\right)$  amount of  $X$ , the output of  $X$  is given by

$$X = \frac{1}{a} \cdot \left(\frac{S}{P_Y}\right) \tag{2.17}$$

### Determination of X

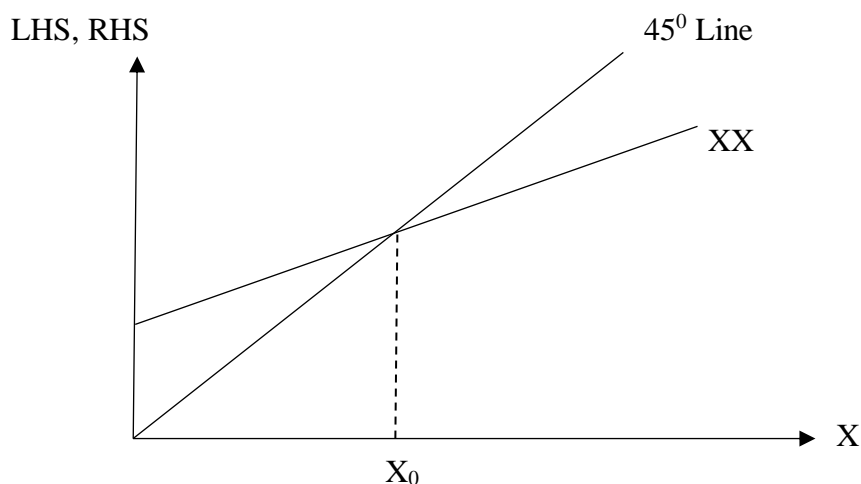


Figure 2.1

Note that the productivity of the intermediate inputs must depend crucially on the quality and quantity of the infrastructure services and inputs provided by the government. Since both  $a$  and  $P_Y$  are decreasing functions of  $G$ , using (2.16), we get

$$aP_Y = a(X, \theta) \cdot R(X, \theta) \equiv B(X, \theta); B_X < 0, B_\theta > 0 \quad (2.18)$$

Substituting (2.18) into (2.17), we rewrite it as follows:

$$X = \frac{S}{B(X, \theta)} \quad (2.19)$$

We can solve (2.19) for X under the assumption that  $\frac{S}{B(0, \theta)} = \bar{X} > 0$  and  $0 < \left(-\frac{S}{B^2} \cdot B_X\right) \equiv x < 1$ . The solution of (2.19) is shown in Figure 1, where we have measured X on the horizontal axis and the LHS and RHS of (2.19) on the vertical axis. The 45° line represents the LHS and the positively sloped line XX with a positive vertical intercept represents the RHS. The equilibrium X corresponds to the point of intersection of the two lines. Following a ceteris paribus given increase in  $\theta$ , the amount of X the producers are able to produce corresponding to any given X decreases. Therefore, the XX-line shifts downward lowering the equilibrium X. Thus, solving (2.19), we get

$$X = X(\theta); X_\theta < 0 \quad (2.20)$$

The sign of the derivative of (20) can be easily derived mathematically.

The small producers save the revenue they earn in the form of currency.

Substituting (2.15), (2.16), (2.20) into (2.13) and using (2.16) and (2.17), we rewrite (2.13) as follows:

$$Y = c_c \cdot \left[ \left(1 - \frac{w}{R(X(\theta), \theta)}\right) Y - T(1 - \theta) \right] + I \left( \bar{r}, \left[ \left(1 - \frac{w}{R(X(\theta), \theta)}\right) Y - T(1 - \theta) \right], [T(1 - \theta) + \bar{P}\tau(1 - k)X(\theta)] \right) + [T(1 - \theta) + \bar{P}\tau(1 - k)X(\theta)] + \frac{S}{R(X(\theta), \theta)} \quad (2.21)$$

The equilibrium condition of the unorganized sector may be written as follows:

$$\frac{wY}{P_X} = (1 - k)X(\theta) \quad (2.22)$$

Our model is given by three key equations, (2.19), (2.21) and (2.22). We can solve them for the three endogenous variables: X, Y and  $P_X$ . (2.19) and (2.21) yield the equilibrium values of X and Y, respectively. Substituting the equilibrium value of Y in (2.22), we get the equilibrium value of  $P_X$ . It is now possible to examine the impact of a given increase in  $\theta$ .

Using standard methods, from (2.19) we get

$$dX = -\left(\frac{b}{1-x}\right) d\theta; b \equiv \frac{S}{B^2} B_\theta \quad (2.23)$$

Similarly, (2.22) gives



$$dY = \frac{E_\theta d\theta}{1 - E_Y} \quad (2.24)$$

In (2.24),

$$E_\theta \equiv (c_c + I_\pi) \cdot \left[ T + \frac{w}{R^2} (R_\theta + R_X X_\theta) \right] - [I_G \cdot (T + \bar{P}\tau(1 - k)(-X_\theta)) + (T + \bar{P}\tau(1 - k)(-X_\theta)) + \left\{ \frac{S}{R^2} (R_\theta + R_X X_\theta) \right\}] \quad (2.24i)$$

And

$$0 < E_Y \equiv (c_c + I_\pi) \cdot \left[ \left( 1 - \frac{w}{R(Y, X, \theta)} \right) \right] < 1 \quad (2.24ii)$$

Let us now explain (2.24). A given increase in the rate of tax evasion by  $d\theta$  produces two opposite effects on the aggregate planned demand for  $Y$  at the initial equilibrium value of  $Y$ . On the one hand, the disposable income of the rich rises. There also takes place a fall in the tax revenue (on account of the increase in  $\theta$  and the fall in  $X$  that it causes) and  $G$  raising  $P_Y$  and lowering, thereby, the wage income of the low skilled workers in terms of  $Y$ . The fall in wage income raises the income of the rich in terms of  $Y$  further. As a result, the consumption and investment demand of the rich increase by  $(c_c + I_\pi) \cdot \left[ T + \frac{w}{R^2} (R_\theta + R_X X_\theta) \right] d\theta$ . Let us explain here how the fall in  $X$  takes place. The increase in the rate of tax evasion leads to a fall in  $G$ , which raises both  $a$  and  $P_Y$ . The latter reduces the amount of intermediate inputs the small producers are able to buy and the former indicates a fall in the productivity of the intermediate inputs. Hence,  $X$  falls in the first round by  $dX_1 = -\frac{S}{B^2} B_\theta d\theta \equiv -bd\theta < 0$  (see (2.19)). This lowers tax revenue and, thereby,  $G$  further. The fall in  $G$  again raises both  $a$  and  $P_Y$  and lowers  $X$  in the second round by  $dX_2 = xdX_1$  (see (2.19)). Similarly, in the third round,  $X$  falls further by  $dX_3 = xdX_2 = x^2 dX_1$ . These changes are convergent and the economy will eventually come to a new equilibrium. The total decline in  $X$  may be computed as follows:  $dX = -bd\theta - xbd\theta - x^2 d\theta - \dots = \frac{-bd\theta}{1-x} \equiv X_\theta d\theta$ . The fall in  $X$  will also lower the intermediate input demand for  $Y$  of the small producers by the amount  $\left\{ \frac{S}{R^2} (R_\theta + R_X X_\theta) \right\} d\theta$  or by  $aX_\theta d\theta$ . Let us now focus on  $I$ . The tax evasion and the cumulative increase in  $P_Y$ , which lowers wage income in terms of  $Y$ , raises, as we have already pointed out, the income of the rich giving a boost to investment. But, the cumulative fall in  $G$  tends to lower it. However, in our view,  $I$  will rise to such an extent that aggregate planned demand for  $Y$  at the initial equilibrium  $Y$  will remain unaffected. Let us explain. We focus here first on capitalist countries and their satellites like India. Western European countries and the USA are the leading capitalist countries in the world. The single most important feature of a capitalist country is the following. The entire production of almost all the goods and services takes place in such a country in just a few very big firms. A handful of businessmen, whom we refer to as the capitalists, run these firms. The capitalists have in their command most of the natural resources of the country. To produce goods and services, they employ workers with wages. The rest of the people, who constitute more than

ninety-nine percent of the population, work for the capitalists for their survival. This extremely unjust concentration of wealth in just a few hands makes the lives of both the capitalists and the masses highly uncertain. The survival of a worker depends on whether he gets employment and how much wage income he gets. The capitalists on the other hand have to subjugate the masses to retain their hold over their astounding wealth and business empire. If they fail to rule over the masses, the latter will simply remove them and take possession of their wealth and businesses. The capitalists adopt different means to achieve their goal. The first and foremost is the following. Since infighting makes them weak and vulnerable, they become united and take over the State Power. (We have described in detail how they do it in Chapter 4). The capitalist of the Western European countries and the USA, whom we call the Western capitalists, have India completely under their control. (We have explained in detail in Chapter 4 why this is so). These capitalists must know that an increase in the rate of tax evasion will lower demand of the small producers for  $Y$ . Hence, they are likely to raise their investment demand substantially to offset the reduction in the small producers' demand. This will give the capitalists an opportunity of grabbing a larger part of aggregate output of the organized sector for purposes of investment so that more automation gets incorporated in production and better varieties of existing luxury goods and new luxury goods get produced to cater to the needs of the rich. In fact, it is highly plausible that the capitalists will always keep their investment at such a level that the productive capacity of the organized sector is fully utilized (for more detailed discussion of this line of thought and evidential support one may go through Ghosh and Ghosh(2019<sup>b</sup>), Chapters 7 and 5). Capitalists seek to maximize profit means they want to maximize their command over the aggregate output of produced goods and services. Profit in terms of money is of little significance. If this line of thought is true, which we believe to be the case, the fall in demand for  $Y$  due the contraction in  $X$  and the fall in  $G$  specified above will be fully compensated for by the increase in the capitalists' consumption and investment demand. Hence,  $Y$  will remain unaffected. However, as we have shown above, there will be a cumulative fall in  $X$ . It follows from (2.22) that, if  $Y$  remains the same and  $X$  falls,  $P_X$  will rise and both the low skilled workers and the small producers will be impoverished. Thus, the cumulative fall in  $X$  will lead to a substantial fall in the consumption level of the poor and cause them tremendous suffering. (In case  $Y$  falls, the rich will suffer too). The above discussion yields the following proposition:

**Proposition 2.2:** An increase in the rate of tax evasion will lead to a cumulative fall in the output of the unorganized sector leading to substantial impoverishment of the poor. There are also strong reasons to believe that the capitalists will raise their consumption and investment so that the resources released from the production of the output of the unorganized sector and the government sector gets utilized for their own benefit.

## 2.4 Impact of Corruption on the Rich and the Poor: Incorporation of Foreign Trade

We will now incorporate in the model developed above trade with foreigners. For simplicity, we will assume that the output of the unorganized sector is not demanded by foreigners. However, to produce 1 unit of  $X$ , the small producers require  $z$  amount of imported intermediate

inputs (such as fertilizer, diesel, pesticide etc.) and do not require any domestic intermediate input. There is foreign trade in the organized sector.

To get aggregate planned demand for Y, we have to add net export to the sum of C, I and G. One determinant of net export is the real exchange rate given by  $\frac{P_Y^* e}{P_Y}$ , where  $P_Y^*$  is the price of foreign substitutes of Y in foreign currency and e is the nominal exchange rate. The real exchange rate, therefore, gives the price of foreign substitutes of Y in terms of Y. If the real exchange rate in terms of Y rises, both the foreigners and domestic economic agents will substitute Y for its foreign substitutes raising export, lowering import and, thereby raising net export. It should also be an increasing function of the foreign real GDP denoted  $Y^*$ . A ceteris paribus increase in  $Y^*$  induces foreigners to raise their demand for both Y and its foreign substitutes raising net export. Finally, C, I and G represent domestic residents' demand for both Y and its foreign substitutes and an increase in any of them usually means an increase in demand for both types of goods. Hence, net export is a decreasing function of C, I and G. Even though I in India is highly import intensive, for simplifying our algebra we will assume its import intensity to be nil. It will not affect any of our results qualitatively. Given these observations, the equilibrium condition for the organized sector, where Y is determined by aggregate planned demand for Y, may be written as follows (see (2.13)):

$$\bar{Y} = c_c \cdot \left[ \left(1 - \frac{w}{P_Y}\right) \bar{Y} - T(1 - \theta) \right] + I + G + NX \left( \frac{P_Y^* e}{P_Y}, Y^*, c_c \cdot \left[ \left(1 - \frac{w}{P_Y}\right) \bar{Y} - T(1 - \theta) \right], G \right);$$

$$0 < c_c < 1 \quad (2.25)$$

Let us explain (2.25). (2.25) differs from (2.13) in the following ways. First, we have incorporated the net export function in (2.25). Second, following on the arguments developed in the previous section, we have made I a variable which is fully under the control of the capitalists and they keep I at such a level that Y is at its full capacity level, which we denote by  $\bar{Y}$ . Finally, we have assumed that the small producers do not require Y.

The value of G is still given by (2.15). Production of Y is highly import intensive in India. Let us explain why. India requires large amounts of imported goods for the purpose of both production and investment. The reason may be explained as follows. India is hopelessly dependent on the Western European countries and the USA for all its knowledge and technology. The books and journals and the high-tech machines and software that the teachers and researchers use in India come from these countries. Similarly, all the high-tech machines and software used in any production or distribution facility in India are sourced from these countries. Moreover, the technologies India use have made India's production highly intensive in the use of imported intermediate inputs. Therefore, value of imported intermediate inputs constitutes an important component of the average variable cost of production. Accordingly, P besides being a decreasing function of G also becomes an increasing function of e. Let us explain. Since India is a small open economy, it has to take the prices of foreign goods in foreign currency as given. Accordingly, an increase in the nominal exchange rate makes foreign goods costlier in domestic currency raising the average variable cost of production. (For a more detailed explanation and supporting evidences, one may go through Ghosh and Ghosh (2016), Chapter 8.) We, therefore, modify (2.16) as follows:

$$P_Y = P(G, e) = P(T(1 - \theta) + \bar{P}\tau(1 - k)X, e) \equiv R(X, \theta, e); \frac{\partial P}{\partial G} \equiv P_G < 0, P_e > 0, R_X < 0, R_\theta > 0, R_e > 0 \quad (2.26)$$

If one studies the behaviour of the exchange rate in India, one will find that it varies a great deal even in a short period of time. (For details on the behaviour of the exchange rate in India, one can go through Ghosh and Ghosh (2016), Chapter 8). Hence, the exchange rate is flexible in India. Therefore, abstracting from the cross-border capital flows for simplicity and using (2.26), the BOP equilibrium condition may be written as follows:

$$NX \left( \frac{P_Y^* e}{R(X, \theta, e)}, Y^*, c_c \cdot \left[ \left( 1 - \frac{w}{R(X, \theta, e)} \right) \bar{Y} - T(1 - \theta) \right], G \right) - zX = 0 \quad (2.27)$$

Focus on the real exchange rate. A ceteris paribus increase in  $e$  produces little impact on the real exchange rate, as it raises the denominator also substantially, since production in India is highly import intensive. Therefore, denoting the real exchange rate by  $p$ , we will make it a function only of  $X$  and  $\theta$ , given  $P_Y^*$ . Thus, we have

$$p = p(X, \theta); p_X > 0, p_\theta < 0 \quad (2.28)$$

By assumption, the output of  $X$  is constrained by the amount of money at the disposal of the small producers to buy imported inputs whose price in foreign currency is denoted by  $P^*$ . It is given. Therefore,  $X$  is given by the following equation:

$$X = \frac{1}{z} \cdot \left( \frac{S}{P^* e} \right) \quad (2.29)$$

### Determination of the Exchange Rate

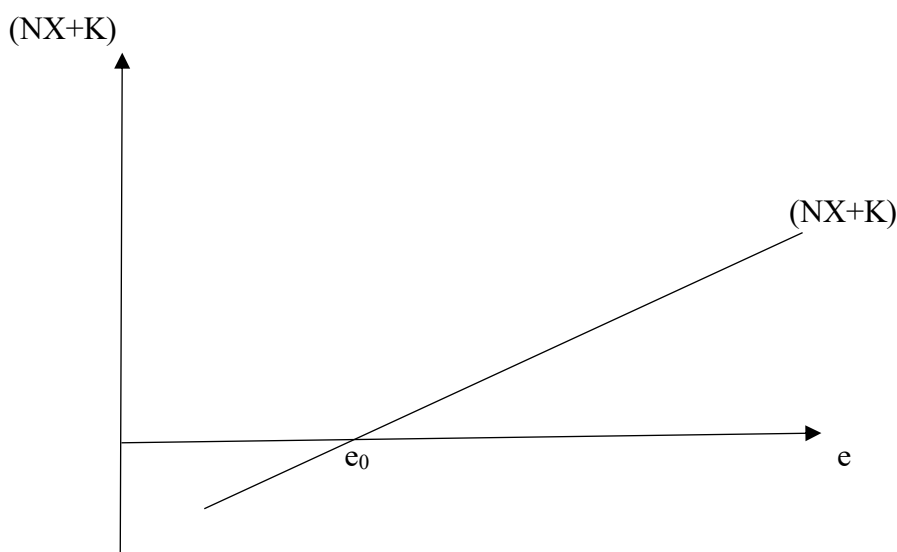


Figure 2.2

Note that  $G$  is still given by (2.15).

Incorporating (2.15), (2.28) and (2.29) into (2.27), we rewrite it as follows:

$$NX \left( p \left( \frac{1}{z} \cdot \left( \frac{S}{P^*e} \right), \theta \right), Y^*, c_c \cdot \left[ \left( 1 - \frac{w}{R \left( \frac{1}{z} \cdot \left( \frac{S}{P^*e} \right), \theta, e \right) \right) \bar{Y} - T(1 - \theta) \right], \left[ T(1 - \theta) + \bar{P}\tau(1 - k) \frac{1}{z} \cdot \left( \frac{S}{P^*e} \right) \right] \right) - \left( \frac{S}{P^*e} \right) \equiv NX(e, \theta) = 0 \quad (2.30)$$

We can solve (2.30) for  $e$  as a function of, among others,  $\theta$ , which is given by

$$e = e(\theta) \quad (2.31)$$

The solution of (2.30) is shown in Figure 2.2. On the vertical axis, we measure  $NX+K$ . On the horizontal axis, we measure  $e$ . The  $NX+K$  schedule, which shows how much  $NX+K$  is at any given  $e$ , is positively sloped for the following reasons. A given increase in  $e$  lowers  $X$ . This reduces government's tax revenue and  $G$ . The decline in  $G$  lowers import and, thereby, raises net export. However, there is also an opposite effect. The fall  $G$  raises  $P_Y$ . It lowers net export for two reasons. First, the increase in  $P_Y$  makes domestic goods dearer inducing domestic economic agents and foreigners to substitute foreign goods for Indian goods. Since India produces its goods and services with imported technology, close substitutes of all its products are available everywhere else. Hence, net export is likely to be highly price elastic. Thus, even a slight increase in  $P_Y$  is likely to substantially reduce net export. The increase in  $P_Y$  also redistributes income from the low skilled workers to the rich. This raises consumption demand for import of the rich lowering net export. For stability, however, the net export has to increase following a rise in  $e$ . From the above discussion it follows that the increase in net export per unit rise in  $e$  is likely to be quite small. This implies that the slope of the  $NX+K$  schedule is very small. The equilibrium value of  $e$ , denoted  $e_0$ , is given by the point at which the  $NX+K$  schedule cuts the horizontal axis.

Using the model presented above, we will inquire into how the exchange rate is likely to be affected following a given rise in the rate of tax evasion. It will raise the consumption demand for import of the rich lowering net export. It will also reduce tax revenue and, thereby,  $G$ . The latter will raise  $P_Y$ . The increase in  $P_Y$ , for reasons we have already explained, will reduce net export substantially. Even though the fall in  $G$  raises net export, it is highly likely that, in the net, net export will fall by a large amount corresponding to any given  $e$ . Thus, in Figure 2.2, the  $NX$  schedule will shift downward by a very large amount bringing about a large increase in  $e$ .

Mathematical derivation of the result involves the following steps. We take total differential of (2.30) and, then, solve it. This yields the following value of  $de$ :

$$de = \frac{-NX_\theta d\theta}{NX_e} > 0 \quad (2.32)$$

We have already explained above that  $(-NX_\theta)$  is likely to be quite large while  $NX_e$  is likely to be very small. Therefore,  $\left( \frac{de}{d\theta} \right) \equiv e_\theta$  is likely to be positive and very large.

Derivation of the value of  $de$  clears the deck for finding out the likely impact of an increase in the rate of tax evasion on  $X$ . Substituting (2.31) into (2.29), we rewrite it as follows:

$$X = \frac{1}{z} \cdot \left( \frac{S}{P^* e(\theta)} \right) \equiv X(\theta) \quad (2.33)$$

From (2.33), we get

$$dX = -\frac{S}{zP^*e^2} e_\theta d\theta \quad (2.34)$$

Since  $e_\theta$  is likely to be very large and positive,  $dX$  is likely to be negative and its absolute value is likely to be very large. In other words, following a given increase in the rate of tax evasion,  $e$  is likely to increase substantially. This will make the imported intermediate inputs costlier by a large amount making  $X$  fall by a large amount.

Let us now examine how a given increase in the rate of tax evasion is likely to affect the consumption of the rich and investment. Substituting (2.26), (2.30), (2.31) and (2.33) into (2.25), we rewrite it as follows:

$$\bar{Y} = c_c \cdot \left[ \left( 1 - \frac{w}{R(X(\theta), \theta, e(\theta))} \right) \bar{Y} - T(1 - \theta) \right] + I + [T(1 - \theta) + \tau \bar{P}(1 - k)X(\theta)]; \quad 0 < c_c < 1 \quad (2.35)$$

From (2.35), we get

$$C_R + I = \bar{Y} - [T(1 - \theta) + \tau \bar{P}(1 - k)X(\theta)] \quad (2.36)$$

In (2.36),  $C_R$  denotes the consumption of the rich. Taking total differential of (2.36), we get

$$d[C_R + I] = Td\theta + \tau \bar{P}(1 - k)[-X_\theta]d\theta \quad (2.37)$$

We have already argued that  $[-X_\theta]$  is like to be positive and very large. Therefore, following an increase in the rate of tax evasion,  $G$  and  $X$  will fall by large amounts enabling the rich to raise their consumption and investment commensurately.

Let us explain the above result briefly. Following an increase in the rate of tax evasion, as we have already discussed, there is likely to emerge a large BOP deficit. This will send the exchange rate soaring. The increase in the exchange rate will restore BOP equilibrium by lowering  $X$  and  $G$ . This will enable the rich to raise their consumption and investment to such an extent that  $Y$  remains at its full capacity level.

This yields the following proposition:

**Proposition 2.3:** An increase in the rate of tax evasion even in the case of an open economy is highly likely to bring about a substantial fall in  $X$  impoverishing the poor immensely and enabling the rich to increase their consumption and investment.

## 2.5 Conclusion

The objective of this chapter is to examine how an increase in the rate of tax evasion is likely to affect the rich and the poor in India in a macro-theoretic framework, which, hopefully, captures the relevant salient features of the Indian economy. It shows that, an increase in the rate of tax evasion is highly likely to bring about a substantial fall in the output of the mass

consumption goods produced by the small producers. This will hurt the poor immensely. The decline in the small producers' output will lower government's tax revenue and consumption expenditure. The rich will, however, utilize the resources released from the production of the small producers and government consumption to raise their own consumption and investment.

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**Table 2.1**

**Sectoral Shares in Work Force (2004-05)**

	Organised Sector	Unorganized sector
Percentage of Workforce Employed 2004-05	<b>6</b>	<b>94</b>

**Source: NSSO 61<sup>st</sup> Round**

**Table 2.2**

**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**



**Table 2.3****Labour Force, Work force and Unemployment (in million)**

	1993-94	1999-00	2004-05	1999-00 to 2004-05 Point to point annualised 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	1993-94		2003-04		2010-2011	
	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**

## Chapter 3

### Economics of Bank Frauds in India

#### Abstract

Bank frauds have become a matter of grave concern of late in India. These frauds are confined mainly to the public sector banks (PSBs). The frauds illegally diverted a large part of the PSB loans from the creation of the targeted assets to the purchase of other domestic or foreign assets. This chapter using a macro-theoretic model suitable for India shows that if the illegally diverted part of the PSB loans is used to purchase foreign assets, the GDP will contract substantially causing immense misery to the workers and the small and medium producers. This chapter also considers another issue. The stock of nonperforming assets (NPAs) as a fraction of bank advances started rising in the PSBs since the beginning of recession from 2011-12. However, Indian private banks did not face this problem. Initially, the RBI allowed the PSBs to hide a large part of these NPAs. However, when these hidden NPAs assumed a substantial value, the RBI tightened the norms for defining NPAs and forced the PSBs to disclose all their NPAs. As a result, PSBs' NPAs increased sharply in 2015. The RBI adopted punitive measures against the PSBs, raised the bogey of PSBs becoming insolvent and made the people apprehensive of losing all their savings parked with the PSBs. In this scenario, our study in this chapter shows, there will take place a large contraction in GDP; PSBs' business, profit and equity prices will fall significantly giving the government an excuse to sell them off to the capitalists at throwaway prices. Carefully scrutinizing all evidences, our study concludes that in all likelihood, the scenario delineated above is a conspiracy hatched by the capitalists to monopolize the banking sector giving hefty donations to the government officials.

### 3.1 Introduction

At the present, bank frauds have become a matter of grave concern. There has taken place a sharp increase in the incidents of bank frauds even if we ignore the frauds involving thousands of crores of rupees perpetrated by Vijay Mallya and Nirav Modi on the public sector banks. Data that have been released recently suggest that bank frauds are quite pervasive in the banking sector in India and these frauds take place principally in the PSBs. The cases of bank frauds, as reported by The Annual Report 2018-19 of the RBI (2018-19, pp.122-123), rose steeply by 15 percent in 2018-19. There took place a 73 percent rise in the defrauded amount of money from Rs.382608.7 million to Rs.645094.3 million. The PSBs lost more than ninety percent of the defrauded amount and larger than half of this defrauded amount was related to the loans given by the banks. The large borrowers were responsible for more than eighty-five percent of the non-performing assets (NPAs) of the banks (RBI (2018)).

Thus, it seems reasonable to assume that bank frauds were principally perpetrated by the large borrowers. It is quite sensible to argue that only the richest of the rich and the most powerful of the people can perpetrate bank frauds and get away with them. Therefore, bank frauds on such a wide scale principally by large borrowers strongly suggest corruption on the part of the high-level bank officials and government officials in power. The defrauded part of the advances instead of creating the targeted assets was used illegally for other purposes. They might have been utilized to purchase (i) domestic assets such as land or (ii) foreign produced goods such as precious metals, gems, jewellery etc. or (iii) foreign non-reproducible assets such as land or financial assets. One of the major objectives of this chapter is to examine how corruption driven illegal diversion of bank loans to purchase goods and assets noted in (ii) and (iii) is likely to affect the macroeconomic performance of India.

This chapter has another objective. It may be delineated as follows. PSBs were afflicted with the problem of non-performing assets for long due principally to the recession that started in 2011-12 (see Tables 3.1 and 3.2). The corruption driven bank fraud also seems to have started since then. However, the real magnitude of the problem came to light only in 2015-16. Chandrasekhar and Ghosh (2018) points out that the RBI gave some leeway to the banks in classifying assets. This allowed banks to conceal at least in part actual and potential non-performing assets (NPAs). However, the RBI changed its stance in 2015. It suddenly tightened the definition of bad loans and non-performing assets and asked the banks to reveal their NPAs. As a result, in the latter half of 2015, the proportion of NPAs in the total loans extended by the PSBs increased steeply. To resolve this problem, the RBI resorted to Prompt Corrective Action (PCA) against some of the PSBs. In consequence, their ability to lend declined significantly. In June 2017, Government of India (GoI) approved Financial Regulation and Deposit Insurance (FRDI) Bill, which proposed to empower the troubled banks to use depositors' money to remain solvent. All these measures on the part of the RBI and GoI made the bank customers scared and their faith in the PSBs was badly shaken. Another major objective of this chapter is to examine the macroeconomic implications of this kind of measures in India.

Theoretical literature on macroeconomic implications of bank fraud is virtually non-existent in Indian context. To the best of our knowledge, the pioneering work in this area was undertaken

in Ghosh and Ghosh (2019). We have extended their work in several directions here. Hence, this work fills up an important gap in the literature.

To accomplish the objectives noted above, we will develop models that, we hope, capture all the relevant salient features of India.

### 3.2 The Model

As we have pointed out above, bank frauds are rising at an alarming rate especially in public sector banks (PSBs) in India in recent years. From evidences it seems that these frauds are taking place in connivance with corrupt officials in high places. Data reveal that these frauds are concentrated principally in bank loans. This means that a part of the loans instead of being utilized for the creation of the targeted asset is diverted to other uses. The diverted part of the loan may be used to buy foreign physical assets such as gold, gems and jewellery etc. or for the purchase of foreign financial assets. In this section, we will develop a macro model suitable for India to examine the macroeconomic implications of these phenomena.

The model we use here is a modified version of the one developed in Ghosh and Ghosh (2019). The economy considered in the model is composed of a real sector and a financial sector. The real sector consists of the market for produced goods and services. The model is based the work of Keynes (1936) and Kalecki (1954). Accordingly, aggregate demand determines output and producers set the prices by adding a margin to the average variable cost of production. Therefore, the equilibrium condition of the real sector is given by

$$Y = c_w(1-t) \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) + c_c(1-t) \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + I(\bar{r}) + tY + NX \left( \frac{P^*e}{P}, c_c \cdot (1-t) \left\{ Y - \frac{wLY}{P} - \frac{Br_0}{P} \right\}, I(\bar{r}), G \right) \quad (3.1)$$

In (3.1),  $Y$  denotes real GDP. Workers and capitalists produce  $Y$  using a fixed stock of capital. The former and the latter spend fixed fractions  $c_w$  and  $c_c$ , respectively, of their respective incomes on consumption.  $t$  denotes the tax rate that applies to incomes of both the workers and the capitalists. To produce one unit of  $Y$ , a fixed  $l$  amount of labour is required.  $w$  is the fixed money wage rate and  $P$  denotes the domestic price level. We assume here that the workers put all their savings in bank deposits and  $B$  denotes workers' bank deposits outstanding at the beginning of the given period. Since workers made these deposits in the past,  $r_0$ , which is some average of the past interest rates, is the given interest rate applicable to  $B$ . Total interest income earned by the workers in the given period under consideration is  $Br_0$ . The excess of  $Y$  over wage and interest incomes of workers is, therefore, capitalists' income. Investment is assumed to be a decreasing function of the interest rate denoted  $r$ . The RBI through its monetary policy regulates the interest rate and seeks to keep it at a target level. Hence, we regard the interest rate to be a policy variable of the RBI and take it as given at  $\bar{r}$ . Given the stringent restriction Government of India puts on fiscal deficit, we assume the fiscal deficit to be zero. Hence, government consumption,  $G$ , is taken to be equal to the total tax revenue  $tY$ . Net export is denoted by  $NX$ . Denoting the nominal exchange rate and the price of foreign goods in foreign currency by  $e$  and  $P^*$ , respectively, we write the real exchange rate as  $\frac{P^*e}{P}$ . We assume that  $NX$

increases with a rise the real exchange rate. Aggregate consumption demand represents demand for both domestic and foreign consumption goods. This is true of both  $G$  and  $I$ . However, import intensity of workers' consumption demand is likely to be relatively insignificant. Therefore, we have made net export a decreasing function of capitalists' consumption,  $G$  and  $I$ .

India is a small open economy. Hence,  $P^*$  and  $Y^*$  are given to India. We also assume following Kalecki (1954) that  $P$  is set by applying a mark-up to the average variable cost of production, which in the present case consists only of unit wage cost. We assume that  $w$  and  $l$  are both fixed in the short run. Hence,  $P$  is also fixed. The data on exchange rate given in Table 3.3 show that the exchange rate varies quite widely even in short periods. This indicates that India has more or less a flexible exchange rate regime. We further assume that the net capital inflow is autonomous and it is exogenously given at  $\bar{K}$ . From the above it follows that the BOP is in equilibrium when the following condition is satisfied:

$$NX\left(\frac{P^*e}{P}, c_c \cdot (1-t) \left\{Y - \frac{wLY}{P} - \frac{Br_0}{P}\right\}, I(\bar{r}), G\right) + \bar{K} = NX\left(\frac{P^*e}{P}, c_c \cdot (1-t) \left\{Y - \frac{wLY}{P} - \frac{Br_0}{P}\right\}, I(\bar{r}), tY\right) + \bar{K} = 0 \quad (3.2)$$

### The Financial Sector

Let us now focus on the financial sector. We assume that it consists only of the central bank and the commercial banks. We will henceforth refer to the latter as simply banks. In India, banks are of two types: public sector banks (PSBs) and private banks. PSBs have branches even in the remotest areas and ordinary people have access to them. We assume here that only workers hold their savings with the PSBs and the capitalists hold their saving in the form of deposits of the private banks. We consider here a given economy in a given period and the total amount of new loans the PSBs plan to supply in the given period is given by the following equation:

$$L^{sg} = (1 - \rho) \left( (1 - c_w) \cdot (1 - t) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \quad (3.3)$$

In (3.3),  $L^{sg}$  denotes supply of new loans of PSBs,  $\rho$  denotes the cash-reserve ratio of the PSBs, which we assume to be fixed for simplicity. The coefficient of  $(1 - \rho)$  in the expression on the RHS of (3.3) is the workers' saving. The planned supply of new loans of private sector banks denoted  $L^{sp}$  is given by the following equation:

$$L^{sp} = (1 - \rho) \left( (1 - c_c) \cdot (1 - t) \cdot \left( Y - \left[ \frac{wLY}{P} + \frac{Br_0}{P} \right] \right) \right) \quad (3.4)$$

In (3.4) the cash-reserve ratio of the private banks is taken to be fixed and equal to that of the PSBs for simplicity. Note that the capitalists are likely to use a part of their saving to finance their investment directly. Similarly, the workers may also hold a part of their saving with the private banks. However, we disregard these here for simplicity. Even if we had incorporated these points, all our results would have remained unaffected.

Demand for banks' new loans comes from the investors only. They finance their entire investment with new bank loans. Some of the investors are also bank frauds. We also pointed

out that the large borrowers are principally responsible for bank frauds. They secure loans from the PSBs to make some specific investment. However, instead of making the stated investment, they use it illegally in the cases we consider here to purchase foreign physical or financial assets. The modus operandi of these fraud investors may be the following. The frauds give donations to highly placed government officials and overstate their planned investment. They use the loans secured to finance the overstated part of their investment to buy illegally domestic or foreign assets. These loans are never repaid. The government officials receiving the donations make sure that the PSBs accept the excuses of the defaulters for not being able to repay the loans and write-off the loans. Let us illustrate this point with an example. Suppose an investor plans to set up an enterprise worth Rs.20,000 crore. However, he overstates its value by Rs.20,000 crore and secures a loan of Rs.40,000 crore from a PSB and pledges the enterprise as the collateral. Given the donations given to the government officials, the PSB turns a blind eye to this overstatement of the value of the enterprise. After running the enterprise for a few years, the borrower declares it bankrupt. Usually, it seems, these fraud investors take these loans in times of boom and declare their enterprises bankrupt when recession starts. At least that is what seems to have happened in India in the period we consider here. The bank takes possession of the enterprise and the obligation of the borrower ends there. The bank sells off the enterprise and writes off the rest of the loan. All this happens smoothly because of the donations. This is corroborated by the following quote from Chandrasekhar and Ghosh (2018): “Evidences regarding recovery of NPAs of PSBs also suggest that the problem of corruption is quite widespread. NPAs are reduced in three ways: actual recoveries, upgradation or conversion of NPAs into paying assets through restructuring and compromises and, finally, write offs. Share of write offs in PSBs rose from an already high 41 percent in 2014-15 to 46 percent in 2015-16. In 10 cases of resolution under Insolvency and Bankruptcy Code (IBC) reported in Economic Survey 2017-18, the claims of financial creditors were met in full only in one (Prowess International), where the claim was quite small. For the rest, the extent of recovery varied from 6 percent to 58 percent, with only two recovering more than 50 percent.” It is remarkable that the recession started from 2011-12 and the large (corporate) borrowers also started defaulting on their loans since then (refer to Tables 3.1 and 3.2). The corporate borrowers started defaulting on loans that they took during the period of boom 2003-04 – 2010-11. We assume that the frauds plan to fraudulently secure a given amount  $A$  from the PSBs. Thus, their demand for bank loans is given by  $A$ .

Hence, demand for new bank loans denoted  $L^D$  is given by

$$L^D = I(\bar{r}) + A \tag{3.5}$$

The RBI seeks to keep  $r$  at  $\bar{r}$ . It achieves its goal in the following manner. In case there emerges an excess demand for new bank loans at  $\bar{r}$ , the RBI lends to banks so that the banks can meet this excess demand at  $\bar{r}$ . Similarly, if there emerges an excess supply of new bank loans, the RBI borrows this excess supply of new loans at  $\bar{r}$ . Therefore, we can write the equilibrium condition of the financial sector as follows:

$$I(\bar{r}) + A = (1 - \rho) \left( (1 - c_c) \cdot (1 - t) \cdot \left( Y - \left[ \frac{wLY}{P} + \frac{Br_0}{P} \right] \right) \right) + (1 - \rho) \left( (1 - c_w) \cdot (1 - t) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + b \quad (3.6)$$

In (3.6),  $b$  denotes banks' borrowing from the RBI. It may be positive or negative depending on whether there is excess demand for or excess supply of bank loans at  $\bar{r}$ . We make  $A$  an increasing function of  $D$ , which denotes the donations given to the government officials. They can use  $A(D)$  for three purposes: purchasing domestic assets, purchasing imported produced physical assets such as precious metals, gems, jewelry, houses etc. and for purchasing foreign non-reproducible physical assets such as land or financial assets. We consider the implications of the latter two cases here. In the first of these two cases,  $A(D)$  is a part of  $C$  or  $I$  and a part of import of produced goods and services. In the second of these two cases, it is a part only of capital outflow and not of any component of final demand for  $Y$ . In what follows, we will refer to the first case and the second case as Case 1 and Case 2, respectively. The BOP equilibrium condition in these two cases may be written as follows:

$$NX \left( \frac{P^*e}{P}, c_c \cdot (1 - t) \left\{ Y - \frac{wLY}{P} - \frac{Br_0}{P} \right\}, I(\bar{r}), tY \right) + \bar{K} - A(D) = 0 \quad (3.7)$$

The goods market equilibrium condition in Case 1 and Case 2 are written as follows:

Case 1-

$$Y = c_w(1 - t) \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) + c_c(1 - t) \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + A(D) + I(\bar{r}) + tY + NX \left( \frac{P^*e}{P}, c_c \cdot (1 - t) \left\{ Y - \frac{wLY}{P} - \frac{Br_0}{P} \right\}, I(\bar{r}), G \right) - A(D) \quad (3.8)$$

Case 2-

$$Y = c_w(1 - t) \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) + c_c(1 - t) \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + I(\bar{r}) + tY + NX \left( \frac{P^*e}{P}, c_c \cdot (1 - t) \left\{ Y - \frac{wLY}{P} - \frac{Br_0}{P} \right\}, I(\bar{r}), G \right) \quad (3.9)$$

Substituting (3.7) into (3.8) and (3.9), we get the following equation:

$$Y = c_w(1 - t) \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) + c_c(1 - t) \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + A(D) + I(\bar{r}) + tY - \bar{K} \quad (3.10)$$

Note that even though  $A(D)$  is not used for purposes of financing the planned investment  $I(\bar{r})$ , the whole of the planned investment  $I(\bar{r})$  is fully met through adjustments in  $b$ .

We can solve (3.10) for the equilibrium value of  $Y$  in both Case 1 and Case 2, respectively. We are now in a position to examine the impact of an autonomous increase in  $D$  in these two cases:

From (3.10), one can easily derive the following value of  $dY$ :

$$dY = \frac{A'}{1 - \left[ \left\{ c_w \cdot \frac{wL}{P} + c_c \cdot \left( 1 - \frac{wLY}{P} \right) \right\} (1 - t) + t \right]} dD \quad (3.11)$$

Let us explain (3.11) in both Case 1 and Case 2. In Case 1, following an autonomous increase in  $D$  by  $dD$ , both capitalists' consumption or investment and import of produced goods and

services increase by  $A/dD$ . Hence, aggregate planned demand for domestic goods remains unaffected at the initial equilibrium  $Y$  and  $e$ . However, the BOP deficit that is created at the initial equilibrium  $(Y, e)$  sends the exchange rate soaring. The rise in the exchange rate removes the BOP deficit by raising net export by  $A/dD$ . This creates an excess demand for  $Y$  of  $A/dD$  at the initial equilibrium  $Y$ . Producers, therefore, increase  $Y$  to meet this excess demand. Per unit increase in  $Y$ , aggregate demand for  $Y$  goes up by  $\left[ \left\{ c_w \cdot \frac{wl}{P} + c_c \cdot \left( 1 - \frac{wlY}{P} \right) \right\} (1-t) + t \right]$ . Therefore, excess demand for  $Y$  falls by  $1 - \left[ \left\{ c_w \cdot \frac{wl}{P} + c_c \cdot \left( 1 - \frac{wlY}{P} \right) \right\} (1-t) + t \right]$  per unit increase in  $Y$ . Hence, to remove the excess demand of  $A/dD$ ,  $Y$  has to rise by the amount given by the expression on the RHS of (3.11).

In Case 2, following the diversion of the loan, aggregate demand for  $Y$  remains unaffected at the initial equilibrium  $(Y, e)$ , but the net inflow of capital falls by  $A/dD$  creating a BOP deficit of the same amount. Exchange rate will, therefore, rise and restore BOP equilibrium by raising net export by  $A/dD$ . Hence, at the initial equilibrium  $Y$ , there will emerge an excess demand for  $Y$  of  $A/dD$ . The rest of the explanation is the same as that of Case 1.

The above analysis yields the following proposition:

**Proposition 3.1:** If by giving donations to government officials it becomes possible for the capitalists to divert illegally a part of the new PSB loans from the creation of the assets for which the loans are taken to the purchase of foreign goods or assets, it will lead to an expansion of GDP and employment in the short run.

The result reported above will, however, be reversed if we incorporate into (3.7), (3.8) and (3.9) all the relevant salient features of the Indian economy. Note first that India's production is highly import intensive. Imported intermediate inputs such as petroleum and petroleum products, fertilizer, components and chemicals constitute essential ingredients of India's production. The production sector in India is an oligopoly as production of most of the goods and services are carried out by just a few producers. It is, therefore, reasonable to assume a la Kalecki (1954) that the producers set the prices of their products by applying a mark-up to the average variable cost of production. The two components of the average variable cost of production are the unit wage cost and the unit intermediate input cost. The former may reasonably be regarded as fixed in the short run. Let us now focus on the latter. India is a small open economy. It is, therefore, a price taker in the world market. Thus, even though the unit imported intermediate input cost of production is fixed in foreign currency, it is highly variable in terms of domestic currency because of the variability of the exchange rate. Hence, in India  $P$  is an increasing function of  $e$ . We further assume that, given everything else,  $P$  is a decreasing function of  $Y$ . The reason may be stated as follows: When  $Y$  falls, as we pointed out in the previous chapter, tax revenue and, therefore,  $G$  falls and this leads to a deterioration in the quantity and quality of the infrastructure services provided by the government. This raises the average variable cost of production of the private producers inducing them to lower their price. Hence,

$$P = P(e, Y); \quad \frac{\partial P}{\partial e} > 0 \text{ and } \frac{\partial P}{\partial Y} < 0 \quad (3.12)$$



India requires large amounts of imported goods for the purpose of both production and investment. The reason may be explained as follows. India is hopelessly dependent on the Western European countries and the USA for all its knowledge and technology. The books and journals and the high-tech machines and software that the teachers and researchers use in India come from these countries. Similarly, all the high-tech machines and software used in any production or distribution facility in India are sourced from these countries. Since foreign capital goods become dearer following a ceteris paribus increase in the nominal exchange rate, investment becomes costlier. The increase in the cost of investment induces the investors to lower investment demand. We, therefore, make investment a decreasing function of  $e$ . We rewrite the investment function as follows:

$$I = I(\bar{r}, e); \frac{\partial I}{\partial e} < 0 \quad (3.13)$$

Using (3.12), the real exchange rate is to be written as  $\frac{P^*e}{P(e,Y)}$ . An increase in  $e$  raises  $P$  substantially and, thereby, produces insignificant impact on the real exchange rate. We will, therefore, regard the real exchange rate to be independent of  $e$  and an increasing function of  $Y$ , given the exogenous variables. Denoting the real exchange rate by  $p$ , we have

$$p = p(Y); \quad \frac{dp}{dY} > 0 \quad (3.14)$$

One important feature of India's net export should be considered here. We have already noted that India does not have any knowledge or technology of its own. Obviously, it is not possible to compete in the world market with imported knowledge and technology, which are never state of the art. Close substitutes of almost all the goods and services that India can produce are available everywhere else. Hence, India's net export is likely to be highly price elastic even though it is insensitive to exchange rate changes.

Substituting (3.13) and (3.14) into (3.7), (3.8) and (3.9), we rewrite them as follows:

$$NX \left( p(Y), c_c \cdot (1-t) \left\{ Y - \frac{wLY}{P(e,Y)} - \frac{Br_0}{P(e,Y)} \right\}, I(\bar{r}, e), tY \right) + \bar{K} - A(D) = 0 \quad (3.15)$$

$$Y = c_w(1-t) \left( \frac{wLY}{P(e,Y)} + \frac{Br_0}{P(e,Y)} \right) + c_c(1-t) \left( Y - \left( \frac{wLY}{P(e,Y)} + \frac{Br_0}{P(e,Y)} \right) \right) + A(D) + I(\bar{r}, e) + tY + NX \left( p(Y), c_c \cdot (1-t) \left\{ Y - \frac{wLY}{P(e,Y)} - \frac{Br_0}{P(e,Y)} \right\}, I(\bar{r}, e), tY \right) - A(D) \quad (3.16)$$

$$Y = c_w(1-t) \left( \frac{wLY}{P(e)} + \frac{Br_0}{P(e)} \right) + c_c(1-t) \left( Y - \left( \frac{wLY}{P(e)} + \frac{Br_0}{P(e)} \right) \right) + I(\bar{r}, e) + tY + NX \left( p(P^*), c_c \cdot (1-t) \left\{ Y - \frac{wLY}{P(e)} - \frac{Br_0}{P(e)} \right\}, I(\bar{r}, e), tY \right) \quad (3.17)$$

Substituting (3.15) into (3.16) and (3.17), we get the same equation. We write it as follows:

$$Y = c_w(1-t) \left( \frac{wLY}{P(e,Y)} + \frac{Br_0}{P(e,Y)} \right) + c_c(1-t) \left( Y - \left( \frac{wLY}{P(e,Y)} + \frac{Br_0}{P(e,Y)} \right) \right) + I(\bar{r}, e) + tY + A(D) - \bar{K} \quad (3.18)$$

We can solve (3.15) and (3.18) for the equilibrium values of  $Y$  and  $e$ . We are now in a position to examine the impact of a given increase in  $D$  on  $Y$  and  $e$ .

Let us first focus on (3.15). We can solve it for  $e$  as a function of  $Y$  and  $D$ , given the other exogenous variables. This is written as follows.

$$e = e(Y, D); \quad \frac{\partial e}{\partial Y} < 0 \text{ and } \frac{\partial e}{\partial D} > 0 \quad (3.19)$$

Using (3.15), we mathematically deduce the signs of the partial derivatives of (3.19):

$$e_Y \left( \equiv \frac{de}{dY} \right) = - \left\{ \frac{[NX_p p_Y + (-NX_c) c_c \left( \frac{wLY + Br_0}{P^2} \right) (-P_Y)] - [(-NX_c c_c)(1-t) \left( 1 - \frac{wL}{P} \right) + (-NX_G)t]}{NX_I I_e - [(-NX_c) c_c (1-t) \frac{wLY}{P^2} P_Y]} \right\} < 0 \quad (3.20)$$

Let us explain the sign of (3.20). First, focus on the numerator of the expression within second brackets on the RHS of (3.20). Incomes of both the government and capitalists rise per unit increase in  $Y$ . Therefore, their demand for imported consumption goods increases. This reduces net export. The second term within third brackets gives the absolute value of this decline in net export. Per unit rise in  $Y$ ,  $P$  goes down and this raises net export substantially. This happens because, as explained in Chapter 2, India's net export is likely to be highly price elastic. The fall in  $P$  produces another effect on net export as well. It raises capitalists' income at the expense of the workers. This reduces import and raises net export, thereby. The first term within third brackets gives the total increase in net export due to the two reasons mentioned above. Since India's net export is likely to be highly price elastic, it may be reasonable to assume that the first term is much larger than the second term and the numerator is positive. The denominator, which gives the amount of increase in net export per unit increase in  $e$ , has to be positive for reasons of stability. Accordingly, it may stand to reason to postulate that  $e_Y$  is negative.

Using the standard methods, we get from (3.15) the following:

$$e_D \left( \equiv \frac{de}{dD} \right) = \frac{A' dD}{NX_I I_e - [(-NX_c) c_c (1-t) \frac{wLY}{P^2} P_e]} > 0 \quad (3.21)$$

Let us explain (3.21). Following a given increase in  $D$  by  $dD$ , a larger amount of the PSB loan is diverted to purchase foreign goods or assets creating a BOP deficit at the initial equilibrium  $(Y, e)$ . The amount of this BOP deficit is given by the numerator of the expression on the RHS of (3.20). Hence,  $e$  rises to remove it. The denominator gives the amount of fall in the BOP deficit per unit increase in  $e$ . This explains (3.20).

Substituting (3.19) into (3.12), we write it as follows:

$$P = P(e(Y, D), Y) \equiv \bar{P}(Y, D); \quad \frac{\partial \bar{P}}{\partial Y} < 0 \text{ and } \frac{\partial \bar{P}}{\partial D} > 0 \quad (3.22)$$

The signs of the partial derivatives of (3.22) follow straightway from the signs of the partial derivatives of (3.12) and (3.19).

Using the model described above, we can find out how the real GDP is affected by an exogenous increase in the amount of donations. For this purpose, upon substituting (3.19) and (3.22) into (3.18), we rewrite it as follows:

$$Y = c_w(1-t) \left( \frac{wLY}{\bar{P}(Y,D)} + \frac{Br_0}{\bar{P}(Y,D)} \right) + c_c(1-t) \left( Y - \left( \frac{wLY}{\bar{P}(Y,D)} + \frac{Br_0}{\bar{P}(Y,D)} \right) \right) + I(\bar{r}, e(Y, D)) + tY + A(D) - \bar{K} \quad (3.23)$$

Using standard methods, we get from (3.23) the following value of  $dY$ :

$$dY = \frac{\left\{ -[(c_w - c_c)(1-t) \frac{wLY + Br_0}{P^2} \bar{P}_D + (-I_e)e_D] + A' \right\} dD}{1 - \left[ C(1-t) + t + [(c_w - c_c)(1-t) \frac{wLY + Br_0}{P^2} (-\bar{P}_Y) + (-I_e)e_Y] \right]} < 0 \quad (3.24)$$

where  $C \equiv c_w \frac{wl}{P} + c_c \left( 1 - \frac{wl}{P} \right)$ . Let us now explain the sign of (3.24). From (3.21) it follows that

$$(-I_e)e_D > (-I_e) \frac{A'}{(-NX_I)(-I_e)} > A' \quad \text{since} \quad 0 < (-NX_I) < 1 \quad (3.25)$$

From (3.25) it is clear that the numerator of the expression on the RHS of (3.24) is negative. The denominator has to be positive for reasons of stability. This explains the sign of (3.24).

Let us explain this process of contraction. First, consider the case where the capitalists use a part of the loan taken from the PSBs for purchasing foreign produced goods. Following an increase in  $D$ , the capitalists spend an additional  $A' dD$  on foreign produced goods. This, at the initial equilibrium  $(Y, e)$ , leaves aggregate demand for domestic goods unaffected but creates a balance of payments deficit of  $A' dD$ . Hence, exchange rate will rise to raise net export by  $A' dD$ . Per unit increase in  $e$ ,  $NX$  rises by  $(-NX_I)(-I_e) - (-NX_C)c_c(1-t) \left( \frac{wLY + Br_0}{P^2} \right) P_e$ .

Therefore, to raise net export by 1 unit,  $e$  has to increase by  $\frac{1}{(-NX_I)(-I_e) - (-NX_C)c_c(1-t) \left( \frac{wLY + Br_0}{P^2} \right)}$ .

This will lower  $I$  by  $\frac{1}{(-NX_I)(-I_e) - (-NX_C)c_c(1-t) \left( \frac{wLY + Br_0}{P^2} \right)} (-I_e) > \frac{1}{(-NX_I)(-I_e)} \cdot (-I_e) = \frac{1}{(-NX_I)} >$

1. From this it follows that, when  $e$  rises by  $\frac{A' dD}{(-NX_I)(-I_e) - (-NX_C)c_c(1-t) \left( \frac{wLY + Br_0}{P^2} \right)}$  and raises net

export by  $A' dD$ ,  $I$  falls by a larger amount. Moreover, the increase in  $P$  brought about by the increase in  $e$  redistributes income in favour of the capitalists at the expense of the workers reducing aggregate consumption demand by  $(c_w - c_c)(1-t) \frac{wLY + Br_0}{P^2} \cdot P_e \frac{A' dD}{(-NX_I)(-I_e) - (-NX_C)c_c(1-t) \left( \frac{wLY + Br_0}{P^2} \right)}$ . Thus, at the initial equilibrium  $Y$ , net export

remains the same as before. Initially,  $C$  or  $I$  increased by  $A' dD$ , but the rise in  $e$  brought about a larger fall in  $C$  plus  $I$ . From the above it follows that the absolute value of the numerator on the RHS of (3.24) gives the excess supply of produced goods and services that appears at the initial equilibrium  $Y$  following the given increase in  $D$ .

We denote it by  $N$ . Thus,  $Y$  in the first-round falls by  $dY_1 = N$ . This will reduce personal and public consumption demand by  $[C \cdot (1 - t) + t]dY_1$ , with  $e$  remaining unchanged. However, the fall in  $Y$  will, as we have already explained, create a BOP deficit and  $e$  will rise by  $e_Y dY_1$ . This will directly lower  $I$  by  $I_e e_Y dY_1$ . It will also raise  $P$  and, thereby, will lower aggregate personal consumption demand by  $(c_w - c_c)(1 - t) \frac{wLY + Br_0}{p^2} (-\bar{P}_Y) dY_1$ . Therefore, the fall in  $Y$  by  $dY_1$  in the first round lowers aggregate demand by  $\left[ C(1 - t) + t + \left[ (c_w - c_c)(1 - t) \frac{wLY + Br_0}{p^2} (-\bar{P}_Y) + (-I_e) e_Y \right] \right] dY_1 \equiv \alpha dY_1$ . Hence,  $Y$  in the second round will go down by  $dY_2 = \alpha dY_1$ . Similarly,  $Y$  in the third round will fall by  $dY_3 = \alpha dY_2 = \alpha^2 dY_1$ . This series is a convergent one, the decline in  $Y$  will eventually come to a stop, and the economy will reach a new equilibrium. Thus, the total fall in  $Y$  is given by

$$dY = -dY_1 - dY_2 - dY_3 - \dots = -\frac{1}{1-\alpha} dY_1 \quad (3.26)$$

One can easily check that (3.26) tallies with (3.24). This explains (3.24). The explanation of Case 2 where  $A/dD$  is spent on foreign financial assets can be done on lines chalked out above. The above analysis yields the following proposition:

**Proposition 3.2:** Unlike what happens in the standard case, if the fraction of PSB loan illegally used to purchase foreign produced goods or assets increases, in all likelihood there will take place a large and cumulative decline in the domestic real GDP in India bringing about a sharp fall in the growth rate from the previous period to the given period.

### 3.3 Bank Frauds, Tightening of Norms Defining Nonperforming Assets and the PSBs

Nonperforming Assets (NPAs), as we have pointed out above, started rising at a fast rate in the PSBs since 2011-12 (see Tables 3.1 and 3.2). However, the RBI and GOI through measures such as restructuring of loans etc. kept the NPAs hidden until 2015. In 2015, suddenly the RBI tightened norms for defining non-performing assets and forced the PSBs to disclose all their NPAs. As a result, the stock of NPAs in the PSBs jumped up substantially (see Table 3.1). Fear of PSBs becoming insolvent began to haunt people. The question that emerges is why the rise in the stock of non-performing assets and bank frauds were confined to the PSBs only. Why did the rise in the default rate induced by recession, which was unforeseen by all the national and international forecasting agencies such as the RBI, IMF etc., hurt only the PSBs? The increase in the default rate, if it were induced only by recession, should have hurt the domestic private banks as well. As we have already stated, evidences point to the fact that the large borrowers, whom we will refer to as the capitalists, are responsible in the main for the growth in the nonperforming assets of the PSBs. Therefore, the only plausible explanation of the growth in the stock of non-performing assets of the PSBs may be the following. The capitalists, as they own the private banks, do not default on loans taken from them. However, they give donations to the highly placed officials to default on loans taken from the PSBs and also to defraud the PSBs through strategies such as the one delineated in the previous section. Through these activities, they also seek to bring disrepute to the PSBs so that the government gets an

excuse to sell them off to the capitalists at throwaway prices. Using a model that we hope captures all the relevant salient features of India, we will seek to examine the implications of these loan defaults and frauds for the PSBs, private banks and the economy. To accomplish this purpose, we modify (3.3) and (3.4) as follows:

$$L^{sg} = (1 - \rho) \left(1 - \theta(N) - \bar{\theta}(N)\right) \left((1 - c_w) \cdot \left(\frac{wLY}{P} + \frac{Br_0}{P}\right)\right) \quad (3.27)$$

$$L^{sp} = (1 - \rho) \left[ (1 - c_c) \cdot \left(Y - \left(\frac{wLY}{P} + \frac{Br_0}{P}\right)\right) + \bar{\theta}(N) \left((1 - c_w) \cdot \left(\frac{wLY}{P} + \frac{Br_0}{P}\right)\right) \right] \quad (3.28)$$

In (3.27) and (3.28),  $\theta$  and  $\bar{\theta}$  denote respectively the fractions of savings workers plan to hold in the form of deposits of private banks and currency. We make them increasing functions of the stocks of nonperforming assets (confined to the PSBs in India), which we denote by  $N$ . Let us explain this point a little. As non-performing assets of PSBs rise and along with it the fear of the PSBs becoming insolvent begins to haunt, the well-to-do workers living in cities may shift a part of their savings to private banks. Note that workers are heterogeneous. Access and response to information may vary across workers. They may not be equally alarmed. As a result, it may be reasonable to assume that only a part of the PSB deposits of the well-to-do workers get shifted to the private banks with an increase in  $N$  and the larger the increase in  $N$  the greater is the fraction of PSB deposits that get shifted to private banks. For simplicity, here we have considered only the new deposits of the PSBs. This will not scuttle the generality of our results. The other workers may shift their savings from the PSBs to currency or to physical assets. The problem with the physical assets is that they are highly illiquid. It may be very difficult to sell them at the right price in times of need. Hence, with a rise in  $N$ , some of the workers may choose to hold a part of their savings in the form of currency. Of course, some of the workers may choose to hold a part of their savings in the form of physical assets also. However, to keep our analysis simple, we have not considered that case here. For reasons similar to the one delineated above, it may be reasonable to assume that the fraction of PSB deposits shifted to currency rises with an increase in the stock of nonperforming assets.

We have also ignored tax and government expenditure for simplicity.

We assume as before that demand for loans comes only from the investors and the whole of the investment is financed with credit. We distinguish between two types of investors here: the corporate investors and the others, whom we will refer to as the small and medium producers. We will denote the investment demands of the former and the latter by  $I^0$  and  $I^s$  respectively. These investment functions are written as follows:

$$I^0 = I^0(\bar{r}, e) \quad (3.29)$$

$$I^s = I^s(\bar{r}) \quad (3.30)$$

For simplicity, we have assumed that the small investors' investment is not import intensive and, therefore, made  $I^s$  a decreasing function of  $r$  alone. PSBs have their branches all across the country, while private banks' branches are concentrated principally in metropolitan cities. Private banks are owned by the capitalists and they cater principally to them. Hence, it may be

reasonable to assume that small and medium producers have access only to the PSBs. Neither the private banks nor the PSBs ration the corporate borrowers. The PSBs meet all the credit demand that comes from the corporate investors and uses the rest of their loanable fund for giving loans to the small and medium producers. If they lend to the small and medium producers, their expected income goes up. However, at the same time, in their perception, the amount of risk associated with lending rises too. Accordingly, depending on their tastes and preferences over return and risk, they decide what fraction of their loanable fund available for lending to the small and medium producers is to be lent out to them. We denote this fraction by  $\beta$ . In the PSBs' perception, the risk of lending to the small and medium producers rises with an increase in their stock of non-performing assets. Hence, we make  $\beta$  a decreasing function of the stock of nonperforming assets of banks, which we denote by  $N$ . Hence,

$$\beta = \beta(N); \beta' > 0 \quad (3.31)$$

The private banks use the whole of their planned loan supply to meet the credit demand of the corporate investors. The PSBs meet the remaining part of the credit demand of the corporate investors. They supply  $\beta$  fraction of the rest of their loanable fund to the small and medium producers. Denoting the supply of new loans to the small and medium producers by  $L^{SS}$ , we get

$$\begin{aligned} L^{SS} = \beta(N) \left[ (1 - \rho) \left( 1 - \theta(N) - \bar{\theta}(N) \right) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) - \left\{ I^0(\bar{r}, e) - (1 - \right. \right. \\ \left. \left. \rho) \left[ (1 - c_c) \cdot \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + \bar{\theta}(N) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \right] \right\} \right] = \beta(N) \left[ (1 - \rho) (1 - \right. \\ \left. \theta(N)) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) - \left\{ I^0(\bar{r}, e) - (1 - \rho) \left[ (1 - c_c) \cdot \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \right] \right\} \right] \end{aligned} \quad (3.32)$$

From (3.32) it follows that the aggregate investment demand of the small and medium producers that actually materializes (which we denote by  $I^{as}$ ) is given by

$$\begin{aligned} I^{as} = \beta(N) \left[ (1 - \rho) (1 - \theta(N)) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) - \left\{ I^0(\bar{r}, e) - (1 - \rho) \left[ (1 - \right. \right. \\ \left. \left. c_c) \cdot \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \right] \right\} \right] \end{aligned} \quad (3.33)$$

The hypothesis that we offer to explain the sudden substantial jump in the stock of nonperforming assets of the PSBs is the following: The capitalists want to expand their business empire in the banking sector dominated by the PSBs. They want to buy up the PSBs to monopolize the banking sector. The strategy they adopt may be the following. They give donations to the government officials so that the powers that be overlook their misdeeds and cooperate with their plans. With the onset of recession, the corporate borrowers begin to default on their loans taken from the PSBs on a very large scale giving the excuse of recession. The central bank initially allows the PSBs to hide quite a large part of their NPAs. Then, when the hidden NPAs assume a substantial value, the central bank, to produce a dramatic impact, suddenly forces the PSBs to declare all their NPAs so that it can adopt punitive measures against the PSBs and, thereby, scare the savers away from the PSBs. People, therefore, shift their savings from the PSBs to the private banks. Those who do not have access to private banks shift their savings from the PSBs to currency. As we have already mentioned, they may

also shift to domestic or foreign physical assets. However, for simplicity, we do not consider those cases here. Even if we had considered those cases, our results would have remained unaffected. From the above it follows that the stock of nonperforming assets of the PSBs rises on account of both recession (which makes many small and medium producers genuinely bankrupt) and donations given to government officials. We, therefore, make  $N$  an increasing function of both  $Y$  and  $D$ . Thus,

$$N = N(Y, D); N_Y < 0, N_D > 0 \quad (3.34)$$

Substituting (3.34) into (3.33) and adding  $I^0$  to it, we get the planned aggregate investment demand of the economy. Denoting it by  $I$ , we write it as follows:

$$\begin{aligned} I = I^0(\bar{r}, e) + \beta(N(Y, D)) & \left[ (1 - \rho) \left( 1 - \theta(N(Y, D)) \right) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) - \right. \\ & \left. \left\{ I^0(\bar{r}, e) - (1 - \rho) \left[ (1 - c_c) \cdot \left( Y - \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \right] \right\} \right] = (1 - \beta(N(Y, D))) I^0(\bar{r}, e) + \\ & \beta(N(Y, D)) \left[ (1 - \rho) \left( 1 - \theta(N(Y, D)) \right) \left( (1 - c_w) \cdot \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) + \left\{ (1 - \rho) \left[ (1 - c_c) \cdot \left( Y - \right. \right. \right. \right. \\ & \left. \left. \left. \left( \frac{wLY}{P} + \frac{Br_0}{P} \right) \right) \right] \right\} \right] \quad (3.35) \end{aligned}$$

Modifying (3.2) to accommodate the absence of government expenditure and taxes and zero import intensity of  $I^s$  and incorporating (3.12) and (3.14) into it, we write the BOP equilibrium condition in the present case as follows:

$$NX \left( p(Y), c_c \cdot \left\{ Y - \frac{wLY}{P(e, Y)} - \frac{Br_0}{P(e, Y)} \right\}, I^0(\bar{r}, e) \right) + \bar{K} = 0 \quad (3.36)$$

We can solve (3.36) for  $e$  as a function of  $Y$ , given the exogenous variables. We write it as follows:

$$e = e(Y) \quad (3.37)$$

Using standard methods, we derive from (3.36) the following:

$$\frac{de}{dY} = - \frac{NX_p(p_Y) + \left[ (-NX_c) c_c \frac{wLY + Br_0}{P^2} (-P_Y) \right] - \left[ (-NX_c) c_c \frac{wL}{P} \right]}{(-NX_{I^0})(-I_e^0) - (-NX_c) c_c \frac{wL + Br_0}{P^2}} < 0 \quad (3.38)$$

Let us explain (3.38). A ceteris paribus unit increase in  $Y$  produces two opposite effects on BOP. On the one hand,  $P$  falls. This raises real exchange rate and, thereby, brings about a very large increase in net export. This is given by  $NX_p(p_Y)$ . Again, the fall in  $P$  redistributes income from the capitalists to the workers. Hence, capitalists' consumption demand for imported consumption goods goes down raising net export. This is given by  $\left[ (-NX_c) c_c \frac{wLY + Br_0}{P^2} (-P_Y) \right]$ . On the other hand, capitalists' income and, therefore, their demand for imported consumption goods goes up lowering net export by  $\left[ (-NX_c) c_c \frac{wL}{P} \right]$ . We have already pointed out in Chapter 2 that net export in India is likely to be highly price elastic. Therefore, one may safely presume that the increase in net export is larger than its fall and in the net the change in net export is positive. Therefore, at the initial equilibrium exchange rate, BOP will be in surplus. The

numerator on the RHS of (3.38) gives the amount of this BOP surplus. To restore BOP equilibrium, the exchange rate goes down.

A unit decline in  $e$  produces two opposite effects on net export. It lowers net export by raising  $I^0$ . Per unit fall in  $e$  net export decreases by  $(-NX_{I^0})(-I_e^0)$ . On the other hand, the decrease in  $P$  that occurs per unit fall in  $e$  redistributes income from the capitalists to the workers reducing the latter's demand for imported consumption goods. This raises net export by  $(-NX_c)c_c \frac{wl+Br_0}{p^2}$ . In the net, net export falls by the denominator of the expression on the RHS of (3.38). It has to be positive, that is, a fall in  $e$  has to lower net export, for reasons of stability. This explains (3.38).

Substituting (3.37) into (3.12), we get

$$P = P(e(Y), Y) \equiv \bar{P}(Y); \quad \bar{P}' < 0 \quad (3.39)$$

The sign of the derivative of (3.39) follows straightway from (3.38) and (3.12).

Eliminating from (3.1) government expenditure and taxes and substituting into it (3.39) and the net export function of (3.36), we rewrite the goods market equilibrium condition in the present case as follows:

$$Y = c_w \cdot \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) + c_c \cdot \left( Y - \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) \right) + I^0(\bar{r}, e) + I^s(\bar{r}) + NX \left( p(Y), c_c \cdot \left\{ Y - \frac{wlY}{\bar{P}(Y)} - \frac{Br_0}{\bar{P}(Y)} \right\}, I^0(\bar{r}, e) \right) \quad (3.40)$$

Incorporating (3.35), (3.36), (3.37) and (3.39) into (3.35), we rewrite it as follows:

$$Y = c_w \cdot \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) + c_c \cdot \left( Y - \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) \right) + I^0(\bar{r}, e(Y)) + \beta(N(Y, D)) \left[ (1 - \rho) \left( 1 - \theta(N(Y, D)) \right) \left( (1 - c_w) \cdot \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) \right) - \left\{ I^0(\bar{r}, e(Y)) - (1 - \rho) \left[ (1 - c_c) \cdot \left( Y - \left( \frac{wlY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) \right) \right] \right\} \right] - \bar{K} \quad (3.41)$$

Using the model described above, we will find out how an increase in the amount of donations affects the real GDP. Using standard methods, we get from (3.36) the following value of  $dY$ :

$$dY = \frac{-[(-\beta_N)N_D L^{BS} + \beta \cdot (1 - \rho)\theta_N N_D S_W]}{1 - \gamma} dD < 0 \quad (3.42)$$

In (3.42),

$$\gamma \equiv \left[ C + \beta(1 - \rho) \left\{ (1 - \theta)(1 - c_w) \frac{wl}{p} + (1 - c_c) \left( 1 - \frac{wl}{p} \right) \right\} + \beta_N N_Y L^{BS} + \beta(1 - \rho)\theta_N (-N_Y) S_W + (1 - \beta)I_e^0 e_Y + (1 - \beta(1 - \rho))(c_w - c_c) \left\{ \frac{wlY + Br_0}{p^2} (-\bar{P}_Y) \right\} \right] \quad (3.43)$$



$$L^{BS} \equiv \left[ (1 - \rho) \left( 1 - \theta(N(Y, D)) \right) \left( (1 - c_w) \cdot \left( \frac{wLY}{P(e)} + \frac{Br_0}{P(e)} \right) - \left\{ I^0(\bar{r}, e(Y)) - (1 - \rho) \left[ (1 - c_c) \cdot \left( Y - \left( \frac{wLY}{P(e)} + \frac{Br_0}{P(e)} \right) \right] \right\} \right) \right] \quad (3.44)$$

$$S_w \equiv (1 - c_w) \cdot \left( \frac{wLY}{P(e)} + \frac{Br_0}{P(e)} \right) \quad (3.45)$$

Let us explain (3.42). Following an increase in  $D$  and the consequent rise in  $N$ ,  $\beta$  goes down and the fraction of saving held in the form of currency also rises. For both these reasons, at the initial equilibrium  $(Y, e)$ , the amount of loan given to the small and medium producers falls. Hence, their investment goes down. The numerator of the expression on the RHS of (3.42) gives the decline in investment demand of the small and medium producers at the initial equilibrium  $(Y, e)$ . We denote it by  $dI^{so}$ . Thus, in the first round,  $Y$  will fall by  $dY_1 = dI^{so}$ . This fall in  $Y$  will reduce both workers' and capitalists' incomes. Their consumption demand will, therefore, fall by  $C \cdot dY_1$ . Their saving will go down too. This will lower PSBs' lending to the small and medium producers. Hence, their investment demand will fall by  $(1 - \rho) \left\{ (1 - \theta)(1 - c_w) \frac{wl}{P} + (1 - c_c) \left( 1 - \frac{wl}{P} \right) \right\} dY_1$ . The fall in  $Y$  will raise the stock of nonperforming assets of banks. This will induce the banks to lower  $\beta$ . The savers will also hold a larger fraction of their saving in the form of currency. For both these reasons, banks' supply of new loans to the small and medium producers and, therefore, their investment will go down by  $[\beta_N N_Y L^{BS} + \beta(1 - \rho)\theta_N(-N_Y)S_w]dY_1$ . Thus, the fall in  $Y$ , with  $e$  remaining unchanged, will reduce aggregate demand for domestic goods by  $\left[ C + \beta(1 - \rho) \left\{ (1 - \theta)(1 - c_w) \frac{wl}{P} + (1 - c_c) \left( 1 - \frac{wl}{P} \right) \right\} + \beta_N N_Y L^{BS} + \beta(1 - \rho)\theta_N(-N_Y)S_w \right] dY_1 \equiv \mu dY_1$ . The fall in  $Y$  by  $dY_1$  will, for reasons we have already explained, create a BOP deficit and  $e$  will rise by  $-e_Y dY_1$ . This will lower corporate investment by  $I_e^0 e_Y dY_1$ . The fall in corporate investment will enable the PSBs to raise their lending to small and medium producers by  $\beta I_e^0 e_Y dY_1$ . Hence, aggregate investment will fall by  $(1 - \beta) I_e^0 e_Y dY_1$ . The fall in  $Y$  and the rise in  $e$  will also raise  $P$  bringing about a redistribution of income from the workers to the capitalists. This will produce two opposite effects on aggregate demand. On the one hand aggregate consumption demand will fall by  $(c_w - c_c) \frac{wLY + Br_0}{P^2} \bar{P}_Y dY$ . On the other hand, aggregate saving will increase by the same amount. This will raise PSBs' lending to small and medium producers and their investment demand will go up by  $\beta(1 - \rho)(c_w - c_c) \frac{wLY + Br_0}{P^2} (-\bar{P}_Y) dY_1$ . In the net, therefore, aggregate demand will fall by  $(c_w - c_c)(1 - \beta(1 - \rho)) \left\{ \frac{wLY + Br_0}{P^2} (-\bar{P}_Y) \right\} dY_1$  due to the rise in  $P$  by  $(-\bar{P}_Y) dY_1$ . Thus, aggregate demand for domestic goods will fall by  $\gamma dY_1$ . In the second round, therefore,  $Y$  will go down by  $dY_2 = \gamma dY_1$ . Similarly, in the third round,  $Y$  will fall by  $dY_3 = \gamma dY_2 = \gamma^2 dY_1$ . The series is a convergent one. Therefore, the fall in  $Y$  will come to a stop and the economy will reach a new equilibrium. Thus, the total decline in  $Y$  is given by

$$dY = dY_1 + \gamma dY_1 + \gamma^2 dY_1 + \dots \dots \dots = \frac{dY_1}{1 - \gamma} \quad (3.46)$$

This tallies with (3.42). The above analysis yields the following proposition:

**Proposition 3. 3:** If being bribed by the capitalists, the government officials through the RBI force the public sector banks to disclose all the non-performing assets which they were initially allowed to hide, there will take place a very large and cumulative contraction in GDP causing immense suffering to the workers and small and medium producers.

### Impact on PSBs

Let us now examine what happens to the PSBs following the donation induced rise in  $N$ . Substituting (3.39) and (3.34) into (3.27), we rewrite it as follows:

$$L^{sg} = (1 - \rho) \left( 1 - \theta(N(Y, D)) - \bar{\theta}(N(Y, D)) \right) \left( (1 - c_w) \cdot \left( \frac{wLY}{\bar{P}(Y)} + \frac{Br_0}{\bar{P}(Y)} \right) \right) \quad (3.47)$$

Note that PSBs' profit and the price of their equities depend crucially on how much they are able to lend and their stock of nonperforming assets. Denoting PSBs' equity price by  $\epsilon$ , we get

$$\epsilon = \epsilon(L^{sg}, N); \quad \frac{\partial \epsilon}{\partial L^{sg}} > 0 \text{ and } \frac{\partial \epsilon}{\partial N} < 0 \quad (3.48)$$

In what follows, we will examine how  $L^{sg}$ ,  $N$  and  $\epsilon$  are affected following a given increase in  $D$ . Let us first focus on  $N$ . Taking total differential of (3.34) and substituting (3.42) into it, we get

$$dN = N_D dD + N_Y \left[ \frac{-[(-\beta_N)N_D L^{BS} + \beta \cdot (1-\rho)\theta_N N_D S_w]}{1-\alpha} \right] dD > 0 \quad (3.49)$$

From (3.49) it follows that both the increase in  $D$  and the very large fall in  $Y$  that it brings about will lead to a substantial increase in  $N$ .

Using standard methods, we get from (3.47) the following:

$$dL^{sg} = -(1 - \rho)S_w(\theta_N + \bar{\theta}_N) \left[ N_D dD + N_Y \left[ \frac{-[(-\beta_N)N_D L^{BS} + \beta \cdot (1-\rho)\theta_N N_D S_w]}{1-\alpha} \right] dD \right] - (1 - \rho)(1 - \theta - \bar{\theta}) \left( (1 - c_w) \cdot \left( \frac{wl}{\bar{P}(Y)} + \left( \frac{wl + Br_0}{P^2} \right) (-\bar{P}_Y) \right) \right) \left[ \frac{[(-\beta_N)N_D L^{BS} + \beta \cdot (1-\rho)\theta_N N_D S_w]}{1-\alpha} \right] dD < 0 \quad (3.50)$$

Let us explain (3.50). Following a given increase in  $D$  by  $dD$ , and the consequent substantial fall in  $Y$ ,  $L^{sg}$  falls for two reasons. First, the fraction of saving workers' hold in the form of currency and private banks' deposit rises by a large amount. Hence, PSBs' deposits fall drastically lowering  $L^{sg}$ . This is given by the first term on the RHS of (3.50). The decline in  $Y$  and the rise in  $P$  that it causes lowers workers' income and, thereby, their saving on a large scale. This also reduces  $L^{sg}$ . This is given by the second term on the RHS of (3.50).

Equations (3.48), (3.49) and (3.50) reveal that there will take place substantial decline in the equity prices of the PSBs following an increase in the amount of donations. This will enable the capitalists to buy up the PSBs at throwaway prices. We now summarize our finding below:

With the onset of a recession, the capitalists can adopt the following strategy for buying up the PSBs. By bribing the government officials, they can wilfully default on their PSB loans giving the excuse of recession and make the central bank allow the PSBs to hide a part of their non-performing assets and, when the hidden nonperforming assets assume a substantial volume, force the PSBs to declare their hidden non-performing assets. This will lead to a severe deepening of recession, the nonperforming assets of the PSBs will spiral and the PSBs' equity prices will crash. The government will, thereby, get an excuse to declare the PSBs inefficient and sell them off to the capitalists at throwaway prices. Even if the capitalists suffer losses due to the fall in  $Y$ , their losses are only temporary for very large long-term gains that the acquisition of the PSBs will engender.

### 3.4 Conclusion

After carefully studying the available evidences, we argue in this chapter that the capitalists, who own and control India's corporate sector, devised a strategy to monopolize the banking sector, which is now dominated by the PSBs. They paid hefty donations to highly placed government officials and borrowed heavily in times of booms (covering the period 2003-04 – 2010-11) from the PSBs to set up specific production units. However, they overstated substantially the values of the specific firms that were set up and, thereby, borrowed much more than what was needed to set up the targeted firms. They illegally diverted the excess PSB loans from the creation of the targeted firms to the purchase of other domestic and foreign assets. We have shown here that, if a part of the PSB loans instead of being used to build the targeted firm is used to purchase foreign assets, there will take place a large contraction in GDP drastically reducing India's growth rate. This will heap immense suffering on the workers and small and medium producers. We assume that donations given by the capitalists to the highly placed government officials make this illegal diversion of PSB loans possible.

The strategy, as we have argued, did not end with the illegal diversion of funds. The capitalists ran the firms set up with the PSB loans for some years. Then, when the recession set in since 2011-12, declared their firms, which were pledged as collateral to the PSBs, bankrupt giving the excuse of recession. The PSBs took over the bankrupt firms. However, by selling them, they could recover only a small part of their dues. They had to write off the rest of the dues. To produce a dramatic effect on the public, the capitalists gave donations to the government officials to make the RBI adopt the following strategy. It initially allowed the PSBs to hide a large part of their nonperforming assets (NPAs) and when the hidden NPAs assumed a substantial volume, tightened the norms for defining NPAs and forced the PSBs to suddenly declare their NPAs. As the NPAs of the PSBs increased steeply, the RBI adopted punitive measures against them and made such comments and observations that the people became very much apprehensive about losing their savings parked with the PSBs. Our analysis in this

chapter shows that in such a scenario, there will be a cumulative contraction in GDP, PSBs' business will contract sharply and their profit and equity prices will plummet precipitously. This will give the government an excuse to sell off the PSBs to the capitalists at throw away prices on grounds of efficiency.

The increase in NPAs in the PSBs cannot be attributed to their inefficiency relative to that of the Indian private banks. The reason may be briefly stated as follows: The recession started in India from 2011-12. The proportion of non-performing assets in the total loans given by the PSBs started increasing since then. However, domestic private banks remained free of this problem (refer to Tables 3.1 and 3.2). This calls for an explanation. The recession caught Indian firms, PSBs and Indian private banks completely unawares. No national or international forecasting agencies such as the RBI or IMF made any prediction about the impending recession. The recession, as should normally be the case, led to an increase in the loan default rate. However, surprisingly, the increase in the default rate was confined to the PSB loans in the main. This cannot be explained on grounds of efficiency. Neither the PSBs nor the Indian private banks could predict the recession. They were equally inefficient in this respect. Since these two types of banks could not predict the recession, it was not possible for them to predict what form it would take, that is, how it would affect different sectors and firms of the economy. Therefore, it is not possible to attribute Indian private banks' success in withstanding the onslaught of recession to their efficiency relative to those of the PSBs. One should also note in this context that most of the banks and financial institutes of the US, which were all private, were either bankrupt or on the verge of bankruptcy following the collapse of the house price bubble in 2007. Moreover, in recent years, bank frauds are rising at an alarming rate and these frauds are, again, confined principally to the PSBs. Finally, the large increase in the stock of nonperforming assets of the PSBs is principally due to loan defaults by large or corporate borrowers. All this suggests that the plight of the PSBs is due to a conspiracy hatched by the capitalists to discredit them and, thereby, to take them over at throw away prices.

### ***References***

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**Table 3.1****Non-Performing Asset in Absolute Terms and as Percentage of Total Advances in Four Bank-Groups**

Year	GNPA (as % of total advances)			
	Scheduled	Public	Private	Foreign
1996	15.7	17.8	2.6	4.3
1997	14.4	16.0	3.5	6.4
1998	14.7	15.9	6.2	7.6
1999	12.7	14.0	4.1	7.0
2000	11.4	12.4	5.1	6.8
2001	10.4	11.1	8.9	5.4
2002	8.8	9.4	7.6	5.3
2003	7.2	7.8	5.0	4.6
2004	5.2	5.4	3.6	2.8
2005	3.3	3.6	1.7	1.9
2006	2.5	2.7	1.9	1.8
2007	2.3	2.2	2.5	1.8
2008	2.3	2.0	3.1	3.8
2009	2.4	2.2	2.9	4.3
2010	2.5	2.4	2.7	2.5
2011	3.1	3.3	2.2	2.8
2012	3.2	3.6	1.8	3.1
2013	3.8	4.4	1.8	3.9
2014	4.3	5.0	2.1	3.2
2015	7.5	9.3	2.8	4.2

**Source: Database on Indian Economy, India**

**Table 3.2****Annual Growth Rate of GDP at Constant Prices**

Year	Growth Rate Of GDP At Factor Prices (Base Year 2004-05)	Growth Rate of GVA at Basic Prices Base Year 2011-12 New Series
1990-91	5.3	
1991-92	1.4	
1992-93	5.4	
1993-94	5.7	
1994-95	6.4	
1995-96	7.3	
1996-97	8.0	
1997-98	4.3	
1998-99	6.7	
1999-00	8.0	
2000-01	4.1	
2001-02	5.4	
2002-03	3.9	
2003-04	8.0	
2004-05	7.1	
2005-06	9.5	
2006-07	9.6	
2007-08	9.3	
2008-09	6.7	
2009-10	8.6	
2010-11	8.9	
2011-12	6.7	
2012-13	4.5	5.4
2013-14	4.8	6.1
2014-15		7.2
2015-16		7.9
2016-17		6.6

**Source: RBI**

**Table 3.3****Exchange Rate of the Indian Rupee vis-a-vis the US Dollar (Monthly average)**

Year/ Month	US \$ Average	Year/ Month	US \$ Average	Year/ Month	US \$ Average	Year/ Month	US \$ Average
2008		Oct	46.7211	Jul	44.4174	Apr	54.4971
Jan	39.3737	Nov	46.5673	Aug	45.2788	May	55.1156
Feb	39.7326	Dec	46.6288	Sep	47.6320	Jun	58.5059
Mar	40.3561	2010		Oct	49.2579	Jul	60.0412
Apr	40.0224	Jan	45.9598	Nov	50.8564	Aug	64.5517
May	42.1250	Feb	46.3279	Dec	52.6769	Sep	64.3885
June	42.8202	Mar	45.4965	2012		Oct	61.7563
Jul	42.8380	Apr	44.4995	Jan	51.3992	Nov	62.7221
Aug	42.9374	May	45.8115	Feb	49.1671	Dec	61.7793
Sep	45.5635	June	46.5670	Mar	50.3213	2014	
Oct	48.6555	Jul	46.8373	Apr	51.8029	Jan	62.1708
Nov	48.9994	Aug	46.5679	May	54.4735	Feb	62.3136
Dec	48.6345	Sep	46.0616	June	56.0302	Mar	61.0021
2009		Oct	46.7211	Jul	55.4948	Apr	60.3813
Jan	48.8338	Nov	46.5673	Aug	48.3350	May	59.3255
Feb	49.2611	Dec	46.6288	Sep	54.3353	June	59.7143
Mar	51.2287	2011		Oct	52.8917	Jul	60.0263
Apr	50.0619	Jan	45.3934	Nov	54.6845	Aug	60.9923
May	48.5330	Feb	45.4358	Dec	54.6439		
June	47.7714	Mar	44.9914	2013			
Jul	48.4783	Apr	44.3700	Jan	54.3084		
Aug	48.3350	May	44.9045	Feb	53.7265		
Sep	48.4389	June	44.8536	Mar	54.5754		

**Source: RBI**

## **Chapter 4**

# **Macroeconomics of Corruption and Crime in India**

### **Abstract**

The objective of this chapter is to explore the macroeconomic implications of the link between corruption and crime using a macro-theoretic model that we hope captures the salient features of developing countries like India. This study is based on the hypothesis that the capitalists in the capitalist countries and their satellites like India own the political parties and wield the State Power. It follows from this hypothesis that the criminals who commit crimes and get away with them are employees of the capitalists. In other words, the sector of organized crime is an enterprise of the capitalists. In India, quite a large part of the GDP is produced by the small producers. This study shows how the capitalists by using the criminals can make the output of the small producers shrink and grab their land.



## 4.1 Introduction

The objective of this chapter is to explore the macroeconomic implications of the link between corruption and crime using a macro-theoretic model that we hope captures the salient features of developing countries like India. There is a vast literature on the interlinkage between corruption and crime starting with the pioneering work of Becker (1968) and Becker and Stigler (1974) and followed by such studies as Besley and MacLaren (1993), Mookherjee and Png (1992), Bowles and Garoupa (1997), Chang et al. (2000), Kugler et al. (2003), among others. The principal objective of these partial equilibrium microeconomic studies is to suggest ways of curbing these illegal activities. There also exist a large number of studies that have explored the impact of corruption linked crime on growth. For a comprehensive survey of the literature, one may go through Powell, Manish and Nair (2010). The principal result of this literature is that the impact of corruption linked crime on growth is ambiguous and the empirical studies in the literature also find no relationship between the two. These studies are neoclassical and couched within the framework of endogenous growth. Astarita et al. (2018) extends the post-Keynesian framework to examine the macroeconomic effect of organized crime. This chapter, however, is based on a very different presumption regarding how the capitalist world works. It presumes that the capitalist world is completely under the control of the capitalists. It develops arguments to vindicate this presumption. It argues that almost all the developing countries like India were former colonies of the Western Europe and the USA and they are at the present completely dependent on the Western Europe and the USA for knowledge and technology. Accordingly, their production and investment are highly import intensive, while their ability to export is extremely limited, since it is not possible to compete in the world market with imported knowledge and technology. Therefore, these countries cannot get themselves going. The capitalists of the Western Europe and the USA, who by our assumption control the capitalist world, get these countries going by placing export orders with them and by buying their financial assets on a large scale (for evidential support of this line of thought in case of India, one can go through Ghosh and Ghosh (2016), Chapter 8). The capitalists, therefore, have these developing countries like India completely under their control. In many of these developing countries including India, the small producers produce a significant part of GDP (see Table 4.1, where the unorganized sector consists of the small producers). This chapter argues that the capitalists who wield State Power and own the political parties appoint criminals to extort money and land from the small producers so that the corporate sector can grow at the expense of the small producers.

Let us establish the claims made above with arguments. We focus here first on capitalist countries. Western European countries and the USA are the leading capitalist countries in the world. The single most important feature of a capitalist country is the following. The entire production of almost all the goods and services takes place in such a country in just a few very big firms. A handful of businessmen, whom we refer to as the capitalists, run these firms. The capitalists have in their command most of the natural resources of the country. To produce goods and services, they employ workers with wages. The rest of the people, who constitute more than ninety-nine percent of the population, work for the capitalists for their survival. This extremely unjust concentration of wealth in just a few hands makes the lives of both the capitalists and the masses highly uncertain. The survival of a worker depends on whether he

gets employment and how much wage income he gets. The capitalists on the other hand have to subjugate the masses to retain their hold over their astounding wealth and business empire. If they fail to rule over the masses, the latter will simply remove them and take possession of their wealth and businesses. The capitalists adopt different means to prevail over the masses. The first and foremost is the following. Since infighting makes them weak and vulnerable, they become united and take over the State Power. In what follows, we recount how they do it.

Capitalist countries have democracies. In a democracy, two or three or more political parties compete for State Power. The adult citizens of the country choose which party will rule over them by casting votes in a General Election, which is held every four or five years. Every adult citizen has the power to cast just one vote whatever be his economic condition. The State Power gets into the hands of that political party that gets the largest number of votes in a General Election. The chosen party enjoys the State Power until the next General Election. Since more than ninety-nine percent of the votes are in the command of the masses, every political party should work for them. To do so, they have to take away the wealth of the capitalists and give it to the masses. They should take over the businesses of the capitalists and run them so that every job seeker gets a job and a good standard of living. Democracy, therefore, is incompatible with the capitalists and capitalism. How do, then, the capitalists and capitalism thrive in a democracy? We give the answer below.

To form a political party, millions of dedicated workers of varying skills have to be employed covering the whole country. Almost unlimited access to all kinds of media is needed too. A richer party can easily outcompete and obliterate a poorer party using better and larger number of brains and muscles. Therefore, only the richest of the people in a country can form and run political parties. Obviously, only the capitalists in a capitalist country have the resources to form and run political parties and they do so to usurp State Power. Using it, they subjugate the masses. (For details of this view, one may go through Ghosh and Ghosh (2019<sup>a</sup>, 2019<sup>b</sup>).

Let us now focus on India. India requires large amounts of imported goods for the purpose of both production and investment. The reason may be explained as follows. India is hopelessly dependent on the Western European countries and the USA for all its knowledge and technology. The books and journals and the high-tech machines and software that the teachers and researchers use in India come from these countries. Similarly, all the high-tech machines and software used in any production or distribution facility in India are sourced from these countries. To make imports, it requires currencies of those countries. However, it produces its goods and services with purchased knowledge and technology, which are always dated and second rate. Therefore, India cannot sell its products to these countries outcompeting other countries. It is the capitalists of the capitalist countries, whom we refer to as the Western capitalists, run India by purchasing Indian goods and Indian bonds and stocks. Since they do not have any access to original knowledge and technology, the Indian capitalists are no match for the Western capitalists. The only explanation for their survival is that they are employees of the Western capitalists and run the Western capitalists' businesses in India. Thus, Indian political parties are also owned and run by the Western capitalists. This is the hypothesis we put forward here and our analysis is based on this hypothesis. (For a historical account in

support of this hypothesis, one can go through Ghosh & Ghosh (2019<sup>b</sup>, Chapter 5 and Chapter 7).

Given the hypothesis stated above, the criminals in a capitalist country, (who are no match for the State Power), cannot operate unless they work for the capitalists and enjoy the patronage of the capitalists through the political parties. The objective of this chapter, as we have pointed out above, is to show how the criminals extort money from the small producers so that the business empire of the capitalists can grow at the expense of the small producers.

## 4.2 The Model

To capture the impact of exploitation of the small producers through criminal extortion, we consider a disaggregated framework where the Indian economy is made up of two segments: the unorganized sector and the organized sector. The small producers constitute the former. The latter consists of the public sector, the non-government corporations and other large private enterprises. The organized sector is fully under the control of the capitalists. It meets the consumption demand of the rich. The capitalists, the owners of the large enterprises (other than corporations) and the high-skilled workers in the enterprises and the political parties constitute the class of the rich. The organized sector also meets the investment demand of the capitalists. It also supplies the small producers with intermediate inputs. The capitalists maximize profit by maximizing their command over the output of the organized sector. For this purpose, they raise their investment level at such a level that there takes place full utilization of productive capacity in the organized sector in every given period. The capitalists seek to maximize investment because through investment they make the production process more automatic and set up facilities for producing new luxury consumption goods and deadlier weapons. Automation in production helps the capitalists create unemployment on a large scale. This robs the workers of all their bargaining strength and the capitalists reduce their remuneration to the lowest possible level. The new items of luxury make the capitalists' standard of living better. Better weapons increase capitalists' control over the masses. Hence, there is no limit to their investment demand. The capitalists determine the prices of their products. They produce the output not only with high-skilled workers but also with low-skilled ones. Henceforth, for the purpose of this model, by capitalists we will mean not only the capitalists but also the high-skilled workers and the large non-capitalist businessmen. The term workers will only mean the low-skilled workers.

Let us now consider the unorganized sector. It consists of small enterprises both rural and urban. Agriculture constitutes a significant part of this sector. Small farmers still own eighty-five percent of land in Indian agriculture (NAABARD (2021)). The unorganized sector produces food and other mass consumption goods in the main. Small producers are poor and they need loans to buy intermediate inputs from the organized sector. However, as they can offer only small amount of collateral, they secure only small amount of loan. In our model, the amount of loan the small producers are able to secure and the prices of the intermediate inputs are two of the most important determinants of the output of the small producers. The producers in this sector produce their output only with family labour by assumption. The capitalists, who

seek to take away the businesses and land of the small producers appoint criminals to extort money and other assets from them in various ways. In what follows, we will specify the other features of the two sectors.

### The Organized Sector

Given the description given above of the organized sector, the equilibrium condition of the organized sector may be written as follows:

$$Y = c_c \cdot \left( Y - \frac{W}{P_Y} lY \right) + I + x^d \quad (4.1)$$

Let us now explain (4.1). On the LHS,  $Y$  denotes the output of the organized sector. Aggregate planned demand for the output of the organized sector is given by the RHS of (4.1).  $W$ ,  $l$  and  $P_Y$  denote the money wage rate, fixed labour requirement per unit of  $Y$  and the price of  $Y$ , respectively. Therefore,  $\frac{W}{P_Y} lY$  and  $\left( Y - \frac{W}{P_Y} lY \right)$  are the incomes of the workers and capitalists, respectively, in terms of  $Y$ . The capitalists spend a fixed  $c_c$  fraction of their income on consumption.  $I$  stands for investment demand for  $Y$ , while  $x^d$  represents small producers' demand for  $Y$ . For simplicity, we have abstracted from foreign trade. Nor have we brought in taxes or government's demand for  $Y$ .

We have already pointed out that the capitalists set the values of  $W$  and  $P_Y$  and they raise the level of  $I$  to such a level that  $Y$  is at its full capacity level in every given period. Denoting the full capacity level of  $Y$  in the given period under consideration by  $\bar{Y}$ , we rewrite the equilibrium condition as follows:

$$\bar{Y} = c_c \cdot \left( 1 - \frac{W}{P_Y} l \right) \bar{Y} + I + x^d \quad (4.2)$$

### The Unorganized Sector

We have already pointed out above that two of the most important determinants of the output of the unorganized sector are the amount of loan the small producers are able to secure and the price of the intermediate inputs they face. We denote the given amount of loan the small producers are able to secure by  $L_X$  and the output of the unorganized sector by  $X$ . We assume that the amount of  $X$  is determined, among others, by the amount of the essential intermediate inputs they are able to buy from the organized sector. One unit of these inputs produces  $(1/an)$  amount of  $X$ . Note that  $a$  is a fixed positive number and  $n$  is an indicator of the natural conditions. When natural factors are normal,  $n$  assumes the value 1. The better (worse) the natural factors relative to their normal condition, the less (greater) is the value of  $n$  relative to unity. Through  $n$ , we have sought to capture the fact that the productivity of the essential intermediate inputs crucially depends upon the natural conditions. The capitalists, who seek to take away the businesses and land of the small producers appoint criminals to extort money and other assets from them in various ways. One way they rob the small producers is by forcing the small producers to buy the essential intermediate inputs from them. They sell the small producers the essential intermediate inputs after adding a commission,  $t$ , to their price.

Therefore, the price of the essential intermediate inputs the small producers face is  $P_{YX}(1 + t)$ . Again, the capitalists using the political parties and the State Power make sure that the small producers have to seek the help of the middlemen to secure loans from the financial institutions. These middlemen take away  $g$  amount of money from  $L_X$ . Hence, the amount of  $X$  they are able to produce with the loan is given by  $\frac{L_X - g}{anP_{YX}(1+t)}$ . Thus,

$$X = \frac{L_X - g}{anP_{YX}(1+t)} \quad (4.3)$$

Since the unorganized sector produces the mass consumption goods such as food, clothing etc., we assume that the small producers keep  $\alpha$  fraction of their output for self-consumption and investment and supplies the rest to the market. We denote the small producers' supply to the market by  $X^S$ . Its value is given by

$$X^S = (1 - \alpha) \left[ \frac{L_X - g}{P_{YX}(1+t)} \frac{1}{an} \right] \quad (4.4)$$

Note that the small producers can produce some amount of output using traditional technology and inputs that they themselves produce. They can also have some money of their own. However, we have ignored them here for simplicity and without any loss of generality. The small producers do not have the resources to sell their market supply directly to the consumers. They, therefore, sell their market supply to the traders. The traders buy the market supply of the small producers at a price  $P^T$ , which we take as given for simplicity.

In the market for  $X$ , workers of the organized sector demand  $X$ . We postulate that these workers spend all their income on  $X$ , since they are poor. We assume for simplicity that the traders also consume only  $X$ . However, since  $X$  includes only necessary consumption goods, the traders' demand for  $X$ , as they are rich, is fixed. We, therefore, ignore their demand for  $X$ .

We denote the total amount of money extorted from the small producers by  $R$  in all the different ways delineated above. We assume that the capitalists have to employ  $L$  amount of labour at the wage rate  $W$  to make all the extortion noted above. These poor criminals also spend their entire income on  $X$ . The criminals extort  $h$  amount of money from the small producers at the time of the sale of their produce as well. We have denoted the commission on the prices of essential intermediate inputs sold by the criminals to the small producers by  $t$ . By selling these inputs, the criminals extort

$$T = \left[ \frac{L_X - g}{P_{YX}(1+t)} \right] P_{YX} t = \left( \frac{t}{1+t} \right) (L_X - g) \quad (4.5)$$

Thus,  $R$  is given by

$$R = h + g + T = h + g + \left( \frac{t}{1+t} \right) (L_X - g) \quad (4.6)$$

The equilibrium condition of the  $X$ -market is, therefore, given by

$$\frac{W(IY + L)}{P_X} = (1 - \alpha) \left[ \frac{L_X - g}{P_{YX}(1+t)} \frac{1}{an} \right] \quad (4.7)$$

We assume that  $P_X$  clears the X-market and it is normally much higher than  $P^T$  so that the traders make large profit. We assume for simplicity that the traders hold their saving in the form of currency. Since the capitalists get  $R$ , and  $x^d$  equals  $\frac{L_X - g}{P_{YX}(1+t)}$ , we rewrite (4.2) as follows:

$$\bar{Y} = c_c \cdot \left(1 - \frac{W}{P_Y} l\right) \bar{Y} + c_c \cdot \left(\frac{R}{P_Y} - \frac{W}{P_Y} L\right) + I + \frac{L_X - g}{P_{YX}(1+t)} \quad (4.8)$$

Using the revenue the small producers receive from their market supply, they service their debt. They save the remaining part of their revenue. However, the small producers are too poor to save much. Hence, for simplicity, we assume their saving to be nil.

## The Financial Sector

We assume that the capitalists keep all their savings as deposits in banks. Accordingly, the financial sector in our model comprises only the banks (commercial banks) and the RBI. They are a segment of the organized sector and their output constitutes a portion of the organized sector's output. Denoting the banks' supply of new loans by  $L^S$ , we get

$$L^S = (1 - \rho(\bar{r})) \cdot (1 - c_c) \cdot (P_Y \bar{Y} + R - Wl\bar{Y} - WL) \quad (4.9)$$

In (4.9),  $\rho$  denotes the cash-reserve ratio of the banks. It is a decreasing function of the market rate of interest,  $r$ , which the RBI keeps fixed at a target level  $\bar{r}$ . We have explained in Chapter 3 how the RBI does it. Demand for new bank loans come from both the capitalists and the small producers. Capitalists demand new bank loans for financing their investment. The banks meet the whole of this demand. The small producers demand new bank loans to purchase intermediate inputs from the organized sector. The banks ration them and give them only a given,  $L_X$  amount of loan. Using (4.6), we write the equilibrium condition of the financial sector as follows:

$$(1 - \rho(\bar{r})) \cdot [(1 - c_c) \cdot (P_Y \bar{Y} + R - Wl\bar{Y} - WL)] + b = (1 - \rho(\bar{r})) \cdot \left[ (1 - c_c) \cdot (P_Y \bar{Y} + [h + g + \left(\frac{t}{1+t}\right)(L_X - g)] - Wl\bar{Y} - WL) \right] + b = P_Y I + L_X \quad (4.10)$$

To comprehend the meaning of  $b$ , go through the explanation of (3.6) of Chapter 3.

We will now seek to identify the determinants of  $L_X$ . The financial sector reforms that have been carried out so far in India have made the banks profit driven commercial organizations. They have been given the freedom to set their interest rates and carry out their businesses the way they want. However, the capitalists through the government have imposed on them prudential lending norms that discourage the banks to lend to the risky borrowers. The riskiness of a borrower is assessed on the basis of his financial might. Accordingly, the small producers of the unorganized sector, who have very little financial might, are considered extremely risky borrowers by the banks. Hence,  $L_X$  is quite small and it depends on the prudential lending norms that the banks have to follow. Besides this, it also depends upon the default rate on loans of the small producers. The small producers pay off their debts from the revenue they earn from the sale of their produce. They default on their loans because of the various kinds of uncertainties associated with their production. These uncertainties are as follows. At the time

of taking the loan, they do not know what value  $n$  will assume. They also do not know how much money they will have to pay to the criminals at the time of harvest. They are uncertain about the prices of the essential intermediate inputs also. The amount of loan the lenders extend to the small producers depends also on the amount of collateral they are able to offer. The amount of collateral principally consists of the amount of land these small producers have, which is given in the short period. We denote this given amount of land of the small producers by  $q$ . In this chapter, we will focus only on  $q$  and the default rate of the small producers, which we denote by  $f$ . This default rate should be a decreasing function of the net revenue the small producers earn (denoted  $z$ ), as they repay their debt along with the interest charges from their net revenue at the end of the period. The net revenue of the small producers is given by (using (4.4) and (4.5))

$$z = P^T \cdot X^S - h = P^T \cdot (1 - \alpha) \left[ \frac{L_X - g}{P_{YX}(1+t)} \frac{1}{an} \right] - h \quad (4.11)$$

Accordingly,

$$f = f(z) = f \left( P^T \cdot (1 - \alpha) \left[ \frac{L_X - g}{P_{YX}(1+t)} \frac{1}{an} \right] - h \right); \frac{df}{dz} < 0 \quad (4.12)$$

Following an increase in  $L_X$  by  $dL_X$ ,  $z$  increases by  $P^T \cdot (1 - \alpha) \left[ \frac{1}{P_{YX}(1+t)} \cdot \frac{1}{an} \right] dL_X$  and the debt service charges of the small producers increase by  $(1 + r_x)dL_X$ , where  $r_x$  is the interest rate at which the small farmers secure loans. We assume that the former is larger than the latter so that an increase in  $L_X$  improves the small producers' economic condition. This is the boundary condition of this model because, otherwise, the small producers would not have taken any loan. The small producers secure the loans by pledging their land as collateral. We assume that the small producers who default on their loan lose their collateral. The lenders take them over. Since both the private and the public lenders work for the capitalists, through them the capitalists get hold of the land of the small producers.

The amount of land lost by the small producers denoted  $\mu$  is given by

$$\mu = \beta \cdot f; \beta > 0 \quad (4.13)$$

As we have pointed out already,  $L_X$  is determined principally by two factors: the amount of land in the possession of the small producers, which we have denoted by  $q$  and also on the default rate of the small producers, which, as follows from (4.11), is a decreasing function of  $z$ . Thus,

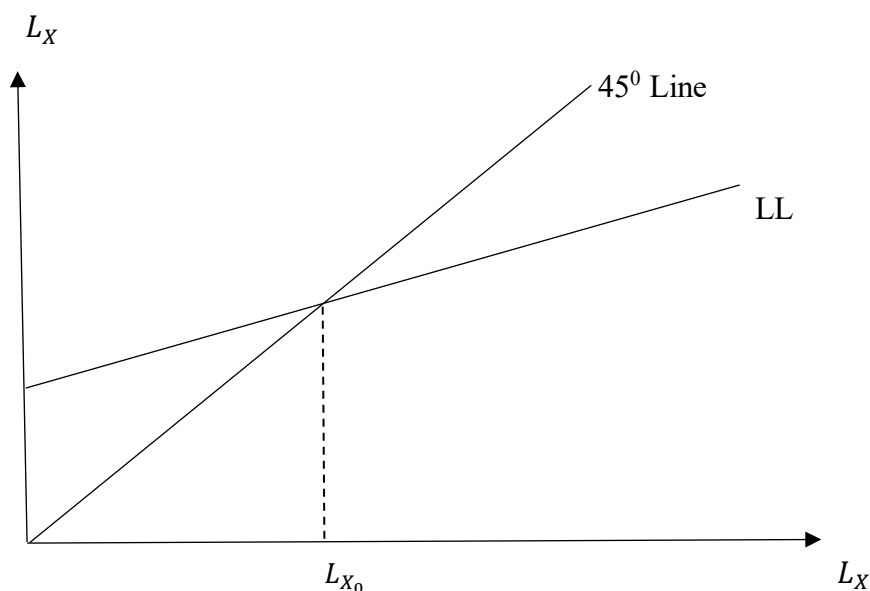
$$L_X = \bar{L} \left( P^T \cdot (1 - \alpha) \left[ \frac{L_X - g}{P_{YX}(1+t)} \frac{1}{an} \right] - h, q \right); \frac{\partial \bar{L}}{\partial z} > 0, \frac{\partial \bar{L}}{\partial q} > 0 \quad (4.14)$$

Note that in (4.14), just like  $g$ ,  $t$ , and  $h$ ,  $q$  is also given. For simplicity of exposition, we have not subtracted  $\beta \cdot f$  from  $q$ .

We have now finished describing our model. It consists of eight key equations, (4.3), (4.7), (4.8), (4.10), (4.11), (4.12), (4.13) and (4.14) in eight endogenous variables:  $X$ ,  $P_X$ ,  $I$ ,  $b$ ,  $z$ ,  $f$ ,  $\mu$  and  $L_X$ . We solve these equations as follows. First, we solve (4.14) for the equilibrium value of

$L_X$ . The  $L_X$  on the LHS of (4.14) is the  $L_X$  the lenders want to supply to the small producers. The  $L_X$  on the RHS of (4.14) gives the amount of  $L_X$  the small producers have secured. (4.14) will have a meaningful interior solution if the following two conditions are satisfied. First, when the small producers have secured no loan, the financial institutions are willing to provide them with a positive amount of loan, so that  $\bar{L} \left( P^T \cdot (1 - \alpha) \left[ \frac{0-g}{P_{YX}(1+t)} \frac{1}{an} \right] - h, q \right) > 0$ . Second, per unit increase in the amount of loan secured by the small producers, the increase in the lenders' planned supply of loans to the small producers increases by less than unity so that  $0 < \frac{\partial \bar{L}}{\partial z} \cdot \frac{\partial z}{\partial L_X} \equiv m < 1$ .

### Determination of $L_X$



**Figure 4.1**

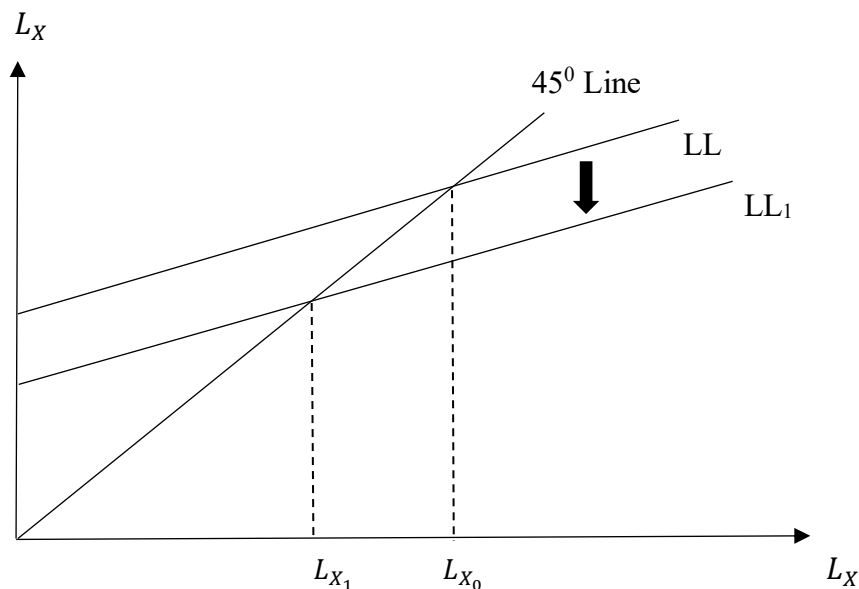
The solution of (4.14) is shown in Figure 4.1, where we have measured  $L_X$  on the horizontal axis and the LHS and the RHS of (4.14) on the vertical axis. We have, then, plotted the values of the LHS and RHS against  $L_X$ . If we plot the values of the LHS, which is  $L_X$ , against  $L_X$ , we get the  $45^\circ$  line. If we plot the values of the RHS against  $L_X$ , we get a positively sloped line with a positive vertical intercept. The positively sloped line labeled LL is flatter than the  $45^\circ$  line. The equilibrium  $L_X$ , labeled  $L_{X_0}$  in Figure 4.1, corresponds to the point of intersection of these two schedules. We can solve (4.11) and (4.12) for the equilibrium values of  $z$  and  $f$ , respectively, after substituting for  $L_X$  its equilibrium value. Again, we can solve (4.3), (4.7) and (4.8) for the equilibrium values of  $X$ ,  $P_X$  and  $I$ , respectively, after substituting for  $L_X$  its equilibrium value. Upon substituting the equilibrium values of  $L_X$  and  $I$  in (4.10), we can solve it for the equilibrium value of  $b$ . Finally, we solve (4.13) for  $\mu$  after substituting for  $f$  its equilibrium value. We are now in a position to examine the impact of the different types of criminal extortion from the small producers.



### 4.3 The Extortion of the Small Producers by the Middlemen in the Loan Market

The capitalists through the political parties create a scenario where the small producers have to seek the help of the middlemen to secure loans from the financial institutions. In return for their services, the small producers have to pay the middlemen  $g$  amount of money. We will examine here the impact of an increase in  $g$ . We will do this first diagrammatically using Figure 4.2, where the initial equilibrium  $L_X$  labeled  $L_{X_0}$  corresponds to the point of intersection of the LL and the  $45^\circ$  line.

**The Impact of an Increase in  $g$**



**Figure 4.2**

We will examine now how these two schedules are affected by an increase in  $g$ . The  $45^\circ$  line, which gives the value of  $L_X$  corresponding to any given  $L_X$ , obviously, remains unaffected. Let us now focus on the LL schedule. Following an increase in  $g$ , corresponding to any given  $L_X$ , the default rate rises inducing the lenders to reduce  $L_X$ . Therefore, the LL schedule shifts downward bringing about a fall in  $L_X$ .  $LL_1$  is the new LL schedule. The new equilibrium  $L_X$  is denoted by  $L_{X_1}$ . Following the fall in  $L_X$ , as follows from (4.3),  $X$  falls and  $X$  gives the consumption level of the poor. With a decline in  $X$ , therefore, poverty and misery of the people will increase.

We can derive the results mathematically as follows. Using standard methods, we get from (4.14) the following value of  $dL_X$ :

$$dL_X = \left[ \frac{\frac{\partial \bar{L}}{\partial z} P^T \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right)}{1-m} \right] dg = \left( -\frac{m}{(1-m)} \right) dg \quad (4.15)$$

Similarly, from (4.3), we get the following value of dX:

$$dX = \left[ \frac{1}{anP_{YX}(1+t)} \right] (dL_X - dg) \quad (4.16)$$

Again, from (4.8), we get the following value of dI:

$$dI = - \left[ \frac{1}{anP_{YX}(1+t)} \right] (dL_X - dg) \quad (4.17)$$

Similarly, from (4.12), we get the following value of df:

$$df = \left( \frac{df}{dz} \right) \cdot \left[ P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) (dL_X - dg) \right] \quad (4.18)$$

Finally, from (4.13) we get

$$d\mu = \beta df \quad (4.19)$$

In what follows, we will explain equations (4.14) – (4.18). Following an increase in  $g$  by  $dg$ , the amount of loan that the small producers can use for cultivation falls and as a result  $X$  goes down in the first round by  $dX_1 = -\frac{dg}{anP_{YX}(1+t)}$ . This enables the capitalists to raise  $I$  by  $dI_1 = \frac{dg}{P_{YX}(1+t)}$ . The fall in  $X$  leads to a fall in the revenue of the small producers by  $dz_1 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dg$  corresponding to the given initial equilibrium  $L_X$ . This raises their default rate at the end of Round 1 by  $df_1 = -\left( \frac{df}{dz} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dg$ . The lenders, accordingly, take away  $d\mu_1 = \beta \cdot df_1$  amount of land at the end of Round 1. At the beginning of Round 2, the lenders decide to reduce their lending to the small producers by  $dL_{X2} = -\frac{\partial \bar{L}}{\partial z} \cdot P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dg \equiv -mdg < 0$  because of the increase in the default rate at the end of Round 1. Hence,  $I$  increases and  $X$  falls in Round 2 by  $dI_2 = -\frac{dL_{X2}}{P_{YX}(1+t)}$  and  $dX_2 = \frac{dL_{X2}}{anP_{YX}(1+t)}$ , respectively. The fall in  $X$  in Round 2 leads to a decline in the revenue of the small producers by  $dz_2 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$  raising the default rate of the small producers at the end of Round 2 by  $df_2 = \left( \frac{df}{dz} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$ . Therefore, the small producers lose to their lenders  $d\mu_2 = \beta \cdot df_2$  amount of land. The increase in the default rate and the consequent loss of land at the end of Round 2 erodes the creditworthiness of the small producers and this induces the lenders to reduce the supply of loan at the beginning of Round 3 further by  $dL_{X3} = mdL_{X2} = -m^2 dg$ . This will raise  $I$  by  $dI_2 = -\frac{dL_{X3}}{P_{YX}(1+t)}$  and reduce  $X$  by  $dX_3 = \frac{dL_{X3}}{anP_{YX}(1+t)}$ , respectively. Accordingly, the revenue of the small producers will decline by  $dz_3 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X3}$  raising their default rate further by  $df_3 = \left( \frac{df}{dz} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X3}$  at the end of Round 3. The small producers will, therefore, lose  $d\mu_3 = \beta \cdot df_3$  amount of land.

The series described above is a convergent one, the fall in  $L_X$  will eventually stop and the economy will be in a new equilibrium. Thus, the total changes in  $L_X$ ,  $X$ ,  $I$  and  $\mu$  are given, respectively, as follows:

$$dL_X = -mdg - m^2dg - m^3dg - \dots = -\left(\frac{m}{1-m}\right)dg < 0 \quad (4.20)$$

$$dX = -\frac{dg}{anP_{YX}(1+t)} + \frac{1}{anP_{YX}(1+t)} [dL_{X2} + dL_{X3} + \dots] = \frac{1}{anP_{YX}(1+t)} (dL_X - dg) \quad (4.21)$$

$$dI = \frac{dg}{P_{YX}(1+t)} - \frac{1}{P_{YX}(1+t)} [dL_{X2} + dL_{X3} + \dots] = \frac{1}{P_{YX}(1+t)} (dg - dL_X) > 0 \quad (4.22)$$

$$df = -\left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dg + \left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dL_{X2} + \left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dL_{X3} + \dots = \left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) [dL_X - dg] > 0 \quad (4.23)$$

Finally,

$$d\mu = \beta df_1 + \beta df_2 + \dots = \beta df > 0 \quad (4.24)$$

Note that (4.19), (4.20), (4.21), (4.22) and (4.23) tally with (4.14), (4.15), (4.16), (4.17) and (4.18), respectively, and, thereby, explain them.

From the above discussion we get the following proposition:

**Proposition 4.1:** If the capitalists using their political parties and State Power ensure that the small producers have to seek the aid of the middle men to secure loans in return for a part of the loan as commission, there will take place a cumulative fall in the amount of  $X$  and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the production of  $X$  to raise their investment.

#### 4.4 The Extortion of the Small Producers by the Criminals at the Time of the Sale of their Produce in the Loan Market

The criminals appointed by the capitalists take away a part of the sales revenue of the small producers. Obviously, the criminals get away with it because they work for the capitalists who

wield State Power. The amount of money extorted by the criminals is denoted by  $h$  in our model. We will examine here how an increase in  $h$  affects the small producers. We will first do it diagrammatically with the help of Figure 4.3. In Figure 4.3, the point of intersection of LL and the  $45^\circ$  line gives the initial equilibrium  $L_X$ . We denote it  $L_{X0}$ . We will examine now how these two schedules are affected by an increase in  $h$ . The  $45^\circ$  line, which gives the value of  $L_X$  corresponding to any given  $L_X$ , obviously, remains unaffected. Let us now focus on the LL schedule. Following an increase in  $h$ , corresponding to any given  $L_X$ , the default rate rises inducing the lenders to reduce  $L_X$ . Therefore, the LL schedule shifts downward bringing about a fall in  $L_X$ .  $LL_1$  is the new LL schedule. The new equilibrium  $L_X$  is denoted by  $L_{X1}$ . Following the fall in  $L_X$ , as follows from (4.3),  $X$  falls and  $X$  gives the consumption level of the poor. With a decline in  $X$ , therefore, poverty and misery of the people increase.

We now mathematically derive our results. Using standard methods, we get from (4.14) the following value of  $dL_X$ :

$$dL_X = \left[ \frac{-\frac{\partial \bar{L}}{\partial z}}{1-m} \right] dh \quad (4.24)$$

### The Impact of an Increase in $h$

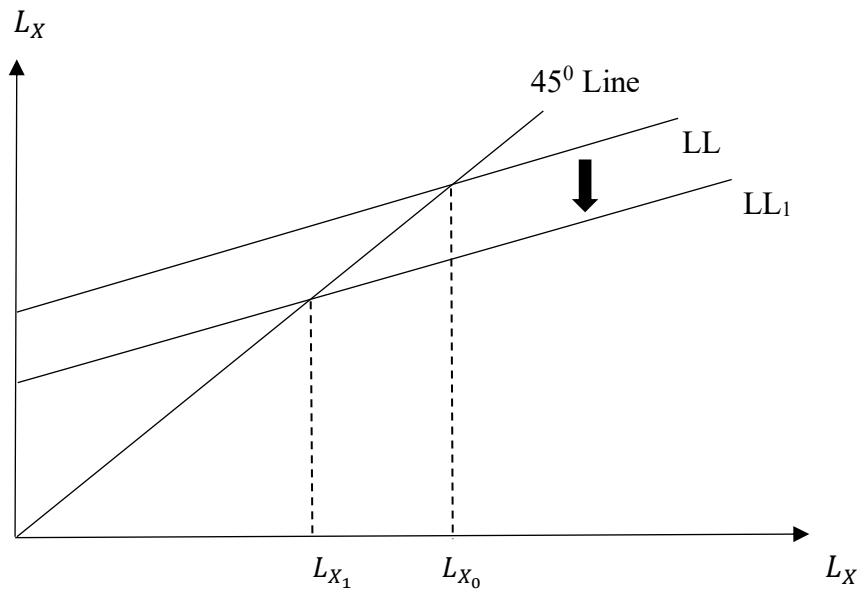


Figure 4.3

Again, from (4.3), we get

$$dX = \left[ \frac{1}{anP_{YX}(1+t)} \right] dL_X \quad (4.25)$$

Similarly, (4.8) yields the following value of  $dI$ :

$$dI = - \left[ \frac{1}{anP_{YX}(1+t)} \right] dL_X \quad (4.26)$$

(4.12) gives the following value of df:

$$df = \left( \frac{\partial f}{\partial z} \right) \cdot \left[ P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_X - dh \right] \quad (4.27)$$

Finally, (4.13) gives the following value of dμ:

$$d\mu = \beta df \quad (4.28)$$

In what follows, we will explain the equations (4.24) – (4.28). Following an increase in h by dh, the amount of revenue net of h that the small producers can use for servicing their debt falls. As a result, their default rate rises in the first round by  $df_1 = \left( \frac{\partial f}{\partial z} \right) \cdot [-dh]$ . It produces two effects. First, the small producers lose  $d\mu_1 = \beta \cdot (df_1)$  amount of land. Second, the lenders reduce  $L_X$  by  $dL_{X1} = - \frac{\partial \bar{L}}{\partial z} \cdot dh$ . As a result, X goes down in the first round by  $dX_1 = \frac{dL_{X1}}{anP_{YX}(1+t)}$ . This enables the capitalists to raise I by  $dI_1 = - \frac{dL_{X1}}{P_{YX}(1+t)}$ . This ends Round 1.

The fall in X in Round 1 leads to a fall in the revenue of the small producers in the second round by  $dz_2 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X1}$ , which raises their default rate in Round 2 by  $df_2 = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X1}$ . The lenders, accordingly, take away  $d\mu_2 = \beta \cdot df_2$  amount of land. The lenders also reduce their lending to the small producers by  $dL_{X2} = \frac{\partial \bar{L}}{\partial z} \cdot P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X1} \equiv m dL_{X1}$  because of the increase in the default rate in Round 2. Hence, X falls and I increases in Round 2 by  $dX_2 = \frac{dL_{X2}}{anP_{YX}(1+t)}$  and  $dI_2 = - \frac{dL_{X2}}{P_{YX}(1+t)}$ , respectively. This ends Round 2.

The fall in X in Round 2 leads to a decline in the revenue of the small producers by  $dz_3 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$  in Round 3 raising the default rate of the small producers by  $df_3 = - \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$ . Therefore, the small producers lose to their lenders  $d\mu_3 = \beta \cdot df_3$  amount of land. The increase in the default rate and the consequent loss of land in Round 3 erodes the creditworthiness of the small producers and this induces the lenders to reduce the supply of loan in Round 3 further by  $dL_{X3} = m dL_{X2} = m^2 dL_{X1}$ . This will reduce X by  $dX_3 = \frac{dL_{X3}}{anP_{YX}(1+t)}$ , and raise I by  $dI_3 = - \frac{dL_{X3}}{P_{YX}(1+t)}$ .

The series described above is a convergent one, the fall in  $L_X$  will eventually stop and the economy will be in a new equilibrium. Thus, the total changes in  $L_X$ , X, I and  $\mu$  are given respectively as follows:

$$dL_X = dL_{X1} + m \cdot dL_{X1} + m^2 dL_{X1} + \dots = \left( \frac{1}{1-m} \right) dL_{X1} = - \left( \frac{1}{1-m} \right) \cdot \frac{\partial \bar{L}}{\partial z} \cdot dh < 0 \quad (4.29)$$

$$dX = \frac{1}{anP_{YX}(1+t)} [dL_{X1} + dL_{X2} + \dots] = \frac{1}{anP_{YX}(1+t)} dL_X \quad (4.30)$$

$$dI = -\frac{1}{P_{YX}(1+t)} [dL_{X1} + dL_{X2} + \dots] = -\frac{1}{P_{YX}(1+t)} dL_X > 0 \quad (4.31)$$

$$df = \left(\frac{\partial f}{\partial z}\right) \cdot [-dh] + \left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dL_{X1} + \left(\frac{df}{dz}\right) P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dL_{X2} + \dots = \left(\frac{df}{dz}\right) \left[ P^T \cdot \left(\frac{1-\alpha}{anP_{YX}(1+t)}\right) dL_X - dh \right] > 0 \quad (4.32)$$

Finally,

$$d\mu = \beta df_1 + \beta df_2 + \dots = \beta df > 0 \quad (4.33)$$

Equations (4.29) – (4.33) tally with (4.24) – (4.28) and, thereby, explain them.

From the above discussion we get the following proposition:

**Proposition 4.2:** If the capitalists using their political parties and State Power employ criminals to take a part of the sales revenue of the small producers, there will take place a cumulative fall in the amount of X and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the production of X to raise their investment.

#### 4.5 Land Grab of the Small Producers by the Criminals

The criminals appointed by the capitalists force the small producers to part with their land for a pittance. Obviously, the criminals get away with it because they work for the capitalists who wield State Power. As a result of this land grab, q falls. We will examine here how a decrease in q affects the small producers. We will first do it diagrammatically with the help of Figure 4.4. In Figure 4.4, the point of intersection of LL and the 45° line gives the initial equilibrium  $L_X$ . We denote it  $L_{X0}$ . We will examine now how these two schedules are affected by a decrease in q. The 45° line, which gives the value of  $L_X$  corresponding to any given  $L_X$ , obviously, remains unaffected. Let us now focus on the LL schedule. Following a fall in q, the amount of collateral the small producers can offer declines. As a result, the lenders' supply of loans corresponding to any given  $L_X$  falls. Therefore, the LL schedule shifts downward bringing about a fall in  $L_X$ .  $LL_1$  is the new LL schedule. The new equilibrium  $L_X$  is denoted by  $L_{X1}$ . Following the fall in  $L_X$ , as follows from (4.3), X falls and X gives the consumption level of the poor. With a decline in X, therefore, poverty and misery of the people increase.

We derive the above results mathematically as follows: Using standard methods, we get from (4.14) the following value of  $dL_X$  :

$$dL_X = \left[ \frac{\frac{\partial \bar{L}}{\partial q}}{1-m} \right] dq < 0 \text{ since } dq < 0 \quad (4.34)$$

Similarly, (4.3) gives us the following value of  $dX$ :

$$dX = \left[ \frac{1}{anP_{YX}(1+t)} \right] dL_X \quad (4.35)$$

Similarly, (4.8) gives the following value of  $dI$ :

$$dI = - \left[ \frac{1}{anP_{YX}(1+t)} \right] dL_X \quad (4.36)$$

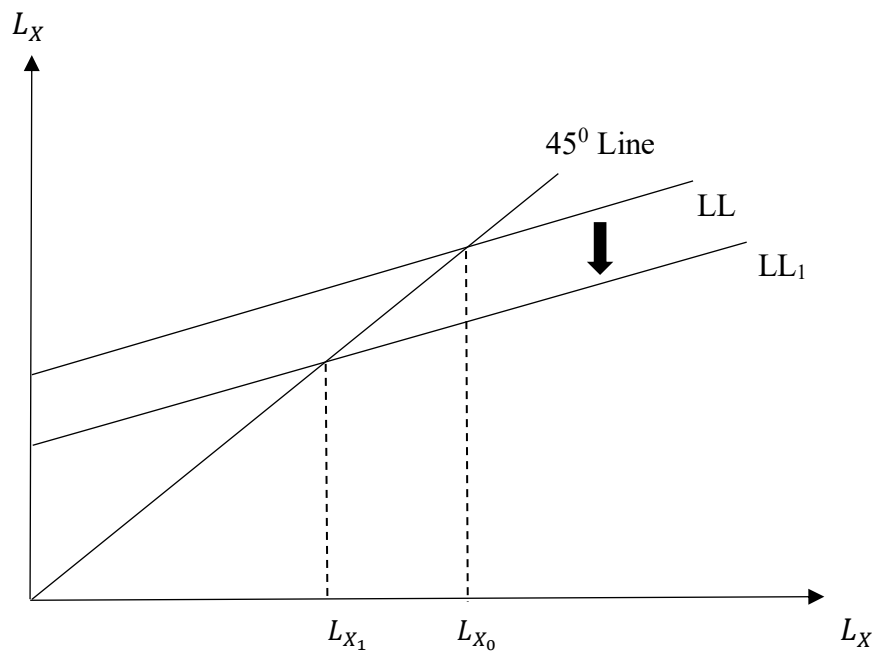
Using (4.12), we get the following value of  $df$ :

$$df = \left( \frac{\partial f}{\partial z} \right) \cdot P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_X \quad (4.37)$$

Finally, using (4.13), we get the following value of  $d\mu$ :

$$d\mu = \beta df \quad (4.38)$$

### The Impact of a Decrease in $q$



**Figure 4.4**

In what follows, we will explain the equations (4.34) – (4.38). Following a decrease in  $q$  by  $dq$ , the supply of loans to the small producers at the beginning of the given period falls by  $dL_{X_1} = \frac{\partial \bar{L}}{\partial q} dq$ . As a result,  $X$  goes down in the first round by  $dX_1 = \frac{dL_{X_1}}{anP_{YX}(1+t)}$ . This enables the capitalists to raise  $I$  by  $dI_1 = - \frac{dL_{X_1}}{P_{YX}(1+t)}$ . The fall in  $X$  leads to a fall in the revenue of the small producers by  $dz_1 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X_1}$ , which raises their default rate by  $df_1 = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X_1}$ . The lenders, accordingly, take away  $d\mu_2 = \beta \cdot df_2$  amount of land. This ends Round 1.

Because of the increase in the default rate of the small producers at the end of Round 1, the lenders also reduce their lending to the small producers by  $dL_{X2} = \frac{\partial \bar{L}}{\partial z} \cdot P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X1} \equiv mdL_{X1}$  at the beginning of Round 2. Hence, X falls and I increases in Round 2 by  $dX_2 = \frac{dL_{X2}}{anP_{YX}(1+t)}$  and  $dI_2 = -\frac{dL_{X2}}{P_{YX}(1+t)}$ , respectively. The fall in X leads to a decline in the revenue of the small producers by  $dz_2 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$  raising the default rate of the small producers by  $df_2 = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2}$ . Therefore, the small producers lose to their lenders  $d\mu_2 = \beta \cdot df_2$  amount of land. This is the end of Round 2.

The increase in the default rate and the consequent loss of land at the end of Round 2 erodes the creditworthiness of the small producers and this induces the lenders to reduce the supply of loan at the beginning of Round 3 further by  $dL_{X3} = mdL_{X2} = m^2dL_{X1}$ . This reduces X by  $dX_3 = \frac{dL_{X3}}{anP_{YX}(1+t)}$  and raises I by  $dI_3 = -\frac{dL_{X3}}{P_{YX}(1+t)}$ . The fall in X leads to a decline in the revenue of the small producers by  $dz_3 = P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X3}$  raising the default rate of the small producers by  $df_3 = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X3}$ . Therefore, the small producers lose to their lenders  $d\mu_3 = \beta \cdot df_3$  amount of land. This is the end of Round 3.

The series described above is a convergent one, the fall in  $L_X$  will eventually stop and the economy will be in a new equilibrium. Thus, the total changes in  $L_X$ , X, I and  $\mu$  are given respectively as follows:

$$dL_X = dL_{X1} + m \cdot dL_{X1} + m^2dL_{X1} + \dots = \left( \frac{1}{1-m} \right) dL_{X1} = \left( \frac{1}{1-m} \right) \cdot \frac{\partial \bar{L}}{\partial q} \cdot dq < 0 \quad (4.39)$$

$$dX = \frac{1}{anP_{YX}(1+t)} [dL_{X1} + dL_{X2} + \dots] = \frac{1}{anP_{YX}(1+t)} dL_X \quad (4.40)$$

$$dI = -\frac{1}{P_{YX}(1+t)} [dL_{X1} + dL_{X2} + \dots] = -\frac{1}{P_{YX}(1+t)} dL_X > 0 \quad (4.41)$$

$$df = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X1} + \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X2} + \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_{X3} + \dots = \left( \frac{\partial f}{\partial z} \right) P^T \cdot \left( \frac{1-\alpha}{anP_{YX}(1+t)} \right) dL_X > 0 \quad (4.42)$$

Finally,

$$d\mu = \beta df_1 + \beta df_2 + \dots = \beta df > 0 \quad (4.43)$$

From the above discussion we get the following proposition:



**Proposition 4.3:** If the capitalists using their political parties and State Power employ criminals to take away a part of the land of the small producers, there will take place a cumulative fall in the amount of  $X$  and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the production of  $X$  to raise their investment.

An increase in  $t$  will also produce similar effects.

#### 4.6 Conclusion

This study is based on the hypothesis that the capitalists in the capitalist countries and their satellites like India own the political parties and wield the State Power. It follows from this hypothesis that the criminals who commit crimes and get away with them are employees of the capitalists. In other words, the sector of organized crime is an enterprise of the capitalists. In India, quite a large part of the GDP is produced by the small producers. This study shows how the capitalists by using the criminals can make the output of the small producers shrink and grab their land.

This the capitalists do use legal means as well. To know how, one may go through Bahattacharjee and Ghosh (2022).

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**Table 4.1**

**Contributions of the Organised Sector and the Unorganised Sector to the Value added of**

**Major Sectors of Production and NDP**

Industry	1993-94		2003-04		2010-2011	
	Organised	Unorganised	Organised	Unorganised	Organised	Unorganised
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**

# Chapter 5

## Conclusion

### 5.1 Introduction

**In this thesis**, we have examined some of the implications of corruption and crime in India in macro-theoretic frameworks that we hope capture all the relevant salient features of India. The thesis consists of three core chapters: Chapters 2, 3 and 4. In Chapter 2, we have examined the implications of tax evasion on growth, inflation as well as on the well-beings of the rich and the poor. Chapter 3 focuses on the short-run implications of bank frauds, which are rising at an alarming rate in India at the present. Finally, Chapter 4 looks into the origin and impact of organized crime in India. In what follows, we will briefly present and explain the major results of the thesis.

### 5.2 Chapter 2: Corruption and Growth in a Country like India

The objective of this chapter is to examine how corruption manifested in the form of tax evasion affects growth and inflation in India. It also explores its implications for the economic well-beings of the rich and the poor. In this endeavour, to put our study in the sharpest possible relief, we have first abstracted from foreign trade. We have, then, extended our analysis to the case of an open economy. The model that we have developed first belongs to the tradition set by Keynes (1936) and Kalecki (1954). Accordingly, the model is based on the assumption that aggregate planned demand for produced goods and services determines the real GDP. Producers on the other hand set the prices by adding a margin to the average variable cost of production. In the specification of the aggregate demand function, we have incorporated the relevant salient features of the Indian economy. We summarize and explain the major results of this chapter below.

#### 5.2.1 The Effect of an Increase in the Rate of Tax Evasion on growth and Inflation

Following a given increase in the rate of tax evasion, the tax revenue falls at the initial equilibrium level of real GDP. This lowers government consumption (since the government adheres to a strict fiscal deficit target) and raises personal consumption demand. Since the marginal propensity to consume of the domestic households is less than unity, the former will be larger than the latter. The fall in government consumption expenditure leads to a deterioration in the services of government administration and infrastructure. This will produce two effects. First, the cost of production and, therefore, the price level will rise. Second, the investment demand will fall. There will, thus, emerge a large excess supply at the initial equilibrium level of real GDP bringing about a cumulative fall in the real GDP through the operation of the multiplier process. The decline in the real GDP reduces government's tax revenue and, thereby, government's consumption expenditure. This, in turn, will bring about a cumulative increase in the price level.

Even though it is not explicitly stated in most of the text books, Keynesian theory or the model on Keynes-Kalecki line presented here seek to explain short period (annual or quarterly, for example) growth rate and inflation rate. Let us explain. The model determines the real GDP and the price level in a given short period. In this given short period, the price level and the real GDP of the previous period are known. Therefore, the model determines the rate of growth in real GDP and the rate of inflation in the price level from the previous short period to the given short period.. An increase in the rate of tax evasion in our model, therefore, lowers the growth rate of the real GDP and raises the rate of inflation from the previous period to the given period. This means that, other factors remaining the same, the higher the growth rate of the rate of tax evasion over time, the lower is the rate of growth of real GDP and the higher is the rate of inflation over time. The following result follows from the above:

**Proposition 2.1:** Following an exogenous increase in the rate of tax evasion, there takes place a cumulative contraction in real GDP and a cumulative increase in the price level. Therefore, other factors remaining the same, the growth rate of real GDP is a decreasing function and the rate of inflation is an increasing function of the rate of growth of the rate of tax evasion.

In the next stage of our study, we consider a disaggregated set up where the economy is composed of an unorganized sector and an organized sector. The latter is made up of the public sector, the non-government corporations and other large private enterprises, while the former consists of the small producers. The people engaged in the production in the organized sector are divided into two classes: the rich and the low skilled workers. The former consists of the capitalists (who are just a few in numbers and control the private corporate sector), the capitalists' entourage of large businessmen running the large unincorporated private businesses and the high-skilled workers. The low skilled workers and the small producers constitute the class of the poor. The output of the organized sector is used for purposes of consumption by the rich and the government. It is also demanded for purposes of investment by the capitalists and their entourage of large businessmen. The small producers require it as intermediate input in their production.

The output of the unorganized sector is constrained by the amount of intermediate inputs the small producers are able to buy from the organized sector with the given amount of fund they have at their disposal. The small producers produce their output using only family labour. The output of the unorganized sector is consumed by the poor who spend their entire income on it.

An increase in the rate of tax evasion, as we explained earlier, lowers government's consumption expenditure raising the price of the output of the organized sector. This forces the small producers to buy less intermediate inputs. This lowers their output. This fall in output lowers tax revenue and, thereby, government consumption further. Thus, there will take place a cumulative decline in the output of the small producers impoverishing the poor immensely. It is highly likely that the capitalists will utilize the resources released from the production of the small producers to raise their consumption and investment. This yields the following proposition:

**Proposition 2.2:** An increase in the rate of tax evasion will lead to a cumulative fall in the output of the unorganized sector leading to substantial impoverishment of the poor. There are also strong reasons to believe that the capitalists will raise their consumption and investment so that the resources released from the production of the output of the unorganized sector gets utilized for their own benefit.

This chapter shows that the above result will hold even if we incorporate foreign trade.

### **5.3 Chapter 3: Economics of Bank Frauds in India**

Chapter 3 examines in macro-theoretic frameworks, that, we hope, capture all the relevant salient features of India, the short run implications of bank frauds, which are principally confined to the public sector banks (PSBs), in India. We summarize here the main results of the chapter and briefly explain them.

We assume that the demand for banks' new loans comes from the investors only. They finance their entire investment with new bank loans. Some of the investors are also bank frauds. We also pointed out that the large borrowers are principally responsible for bank frauds. They secure loans from the PSBs to make some specific investments. However, instead of making the stated investments, they use it illegally in the cases we consider here to purchase foreign physical or financial assets. The modus operandi of these fraud investors may be the following. The frauds give donations to highly placed government officials and overstate their planned investment. They use the loans secured to finance the overstated part of their investment to buy illegally, in the case we consider here, foreign assets. These loans are never repaid. The government officials receiving the donations make sure that the PSBs accept the excuses of the defaulters for not being able to repay the loans and write-off the loans.

We have developed a suitable model for our purpose on the lines of Keynes (1936) and Kalecki (1954) so that the real GDP is demand determined and the price level is an increasing function of the average variable cost of production. We have also modelled here the financial sector, which is assumed to consist of only the central bank, the PSBs and private banks. We have assumed that the private banks cater to the credit needs only of the capitalists, while the PSBs cater to the credit needs of both the capitalists and the small producers. However, since the capitalists give hefty donations, the PSBs fully meet the credit needs of the capitalists but ration the small producers. The larger the stock of the non-performing assets of the PSBs, the less is the amount of loan they give to the small producers. On the other hand, the capitalists hold their saving as deposits with the private banks, while the workers hold their savings as deposits with the PSBs. However, with an increase in the stock of non-performing assets of the PSBs, the richer of the workers shift their savings from the PSBs to the private banks, while the poorer of the workers shift their savings from bank deposits to currency. We will use this model to examine how a donation induced increase in bank frauds in the PSBs will affect the PSBs, the private banks and the small producers.

We will first show that under the standard assumption made in the text book open economy macro models, a donation induced bank fraud and the consequent increase in the illegal outflow of capital will lead to an expansion in real GDP. Following the increase in the illegal outflow of capital, there will emerge a BOP deficit at the initial equilibrium level of real GDP and the exchange rate. The exchange rate will rise and increase the net export by the amount of the increase in the illegal outflow of capital. It will do so by raising the real exchange rate leaving the domestic economic agents' aggregate planned demand for produced goods and services unaffected. Therefore, at the initial equilibrium level of real GDP, there will emerge an excess demand for produced goods and services bringing about a cumulative increase in the real GDP through the multiplier process.

The following result follows from the above:

**Proposition 3.1:** If by giving donations to the government officials it becomes possible for the capitalists to divert illegally a part of the new PSB loans from the creation of the assets for which the loans are taken to the purchase of foreign assets, it will lead to an expansion of real GDP and employment in the short run.

However, if we incorporate into the model presented above the relevant salient features of India, the result noted above will get reversed.

Let us now explain what these features are. India requires large amounts of imported goods for the purpose of both production and investment. The reason may be explained as follows. India is hopelessly dependent on the Western European countries and the USA for all its knowledge and technology. The books and journals and the high-tech machines and software that the teachers and researchers use in India come from these countries. Similarly, all the high-tech machines and software used in any production or distribution facility in India are sourced from these countries. Since foreign capital goods become dearer following a *ceteris paribus* increase in the nominal exchange rate, investment becomes costlier. The increase in the cost of investment induces the investors to lower investment demand. India also uses imported intermediate inputs on a large scale because of the kind of imported technology it uses. Hence, the price level becomes an increasing function of the nominal exchange rate. The price level is also made a decreasing function of the real GDP, since an increase in real GDP raises tax revenue and, thereby, government's consumption expenditure. The increase in the government's consumption expenditure for reasons already explained in Chapter 2 lowers the average variable cost of production and, thereby, the price level. Since India uses only imported knowledge and technology, close substitutes of almost all the goods and services India produces are available everywhere else. Accordingly, it is reasonable to assume that India's net export is highly price elastic. However, its exchange rate elasticity is likely to be insignificant since an increase in the exchange rate raises the domestic price level substantially and, thereby, leaves the real exchange rate more or less unaffected. Accordingly, the real exchange rate becomes a decreasing function of the real GDP only. We have made the exchange rate a decreasing function of the real GDP and an increasing function of donations for the following reasons. An increase in the real GDP produces two opposite effects on net export. On the one

hand, the fall in the price level that an increase in the real GDP induces leads to a large increase in net export. On the other hand, the increase in capitalists' and government's incomes raise their demand for imported consumption goods lowering net export. Given the likely very high price elasticity of net export, we consider it reasonable to assume that the expansionary impact on net export dominates the dampening effect and the exchange rate falls. An increase in donations raises illegal demand for foreign assets creating a BOP deficit. Hence, the exchange rate rises. This causes an increase in the price level.

Let us now explain what kind of impact a ceteris paribus given increase in donations will produce on the real GDP once we incorporate the above-mentioned salient features of India. As before, it will raise the incidence of PSB fraud and the ill-gotten money will create illegal demand for foreign assets creating a BOP deficit at the initial equilibrium levels of real GDP and the exchange rate. The exchange rate will, therefore, rise to raise net export by the amount of the increase in the illegal outflow of capital. However, it can do so only by lowering investment, as the real exchange rate is insensitive to the nominal exchange rate. Since the import intensity of investment is less than unity, the decline in investment is likely to be much larger than the increase in net export. Hence, at the initial equilibrium real GDP, there will emerge an excess supply. The increase in the exchange rate will raise the domestic price level bringing about a redistribution of income from the workers to the capitalists. This will lower aggregate planned consumption demand as well making the excess supply larger at the initial equilibrium real GDP. This will set into motion the multiplier process that will bring about a cumulative fall in real GDP. This yields the following proposition:

**Proposition 3.2:** Unlike what happens in the standard case, if the fraction of PSB loans illegally used to purchase foreign assets increases, in all likelihood there will take place a large and cumulative decline in domestic GDP in India bringing about a sharp fall in the growth rate from the previous period to the given period. This will cause immense suffering to the workers and small and medium producers.

### 5.3.1 Bank Frauds, Tightening of Norms Defining Nonperforming Assets and the PSBs

Nonperforming Assets (NPAs) started rising at a fast rate in the PSBs since 2011-12 (see Tables 3.1 and 3.2 in Chapter 3). However, the RBI and the Government of India (GOI) through measures such as restructuring of loans etc. kept the NPAs hidden until 2015. In 2015, suddenly the RBI tightened norms for defining non-performing assets and forced the PSBs to disclose all their NPAs. As a result, the stock of NPAs in the PSBs jumped up substantially (see Table 3.1 in Chapter 3). The fear of the PSBs becoming insolvent began to haunt people. We have examined what impact the scenario just noted is likely to produce on the growth rate of real GDP, the scale of business and equity prices of the PSBs.

We assume here that the capitalists give donations to the government officials so that the RBI tightens norms for defining NPAs and steps up its supervision and monitoring of the PSBs. Hence, we make the stock of non-performing assets of the PSBs an increasing function of

donations and a decreasing function of real GDP. Following an increase in donations and the consequent rise in the stock of non-performing assets, the PSBs become extremely cautious regarding lending to the small and medium producers. The workers also become worried about the solvency of the PSBs and, as a result, workers divert their savings from the PSB deposits to currency. For both these reasons, at the initial equilibrium levels of real GDP and the exchange rate, the amount of loan given to the small and medium producers falls. Hence, their investment goes down. This sets into motion a multiplier process that brings about a large a cumulative fall in the level of real GDP. This yields the following proposition:

**Proposition 3.3:** If being bribed by the capitalists, the government officials through the RBI force the public sector banks to disclose all the non-performing assets which they were initially allowed to hide, there will take place a very large and cumulative contraction in GDP causing immense suffering to the workers and small and medium producers.

### **The State of the PSBs**

Let us now focus on the PSBs. The increase in donations and the very large fall in the real GDP that it causes will lead to a sharp increase in the stock of non-performing assets. This will induce the workers to transfer their savings from the PSBs to the private banks and other assets. This will reduce PSBs' deposits, profit and equity prices drastically. This will give the government an excuse to sell off the PSBs at throwaway prices. The fall in the real GDP will hurt the private banks also. It will, however, be compensated to a large extent, if not fully or more than fully, by the transfer of deposits from the PSBs to the private banks. Even if the capitalists lose due to the fall in the real GDP, their loss is only temporary because of the very large long-term gains that the acquisition of the PSBs will engender.

### **5.3.2 Conclusion**

After carefully studying the available evidences, we argue in this chapter that the capitalists, who own and control India's corporate sector, devised a strategy to monopolise the banking sector, which is now dominated by the PSBs. They paid hefty donations to the highly placed government officials and borrowed heavily in times of booms (covering the period 2003-04 – 2010-11) from the PSBs to set up specific production units. However, they overstated substantially the values of the specific firms to be set up and, thereby, borrowed much more than what was needed to set up the targeted firms. They illegally diverted the excess PSB loans from the creation of the targeted firms to the purchase of other domestic and foreign assets. We have shown here that, if a part of the PSB loans instead of being used to build the targeted firm is used to purchase foreign assets, there will take place a large contraction in GDP drastically reducing India's growth rate. This will heap immense suffering on the workers and small and medium producers. We assume that the donations make this illegal diversion of PSB loans possible.



The capitalists ran the firms set up with PSB loans for some years. Then, when the recession set in since 2011-12, declared their firms, which were pledged as collateral to the PSBs, bankrupt giving the excuse of recession. The PSBs took over the bankrupt firms. However, by selling them, they could recover only a small part of their dues. They had to write off the rest of the dues. To produce a dramatic effect on the public, the capitalists gave donations to the government officials to make the RBI adopt the following strategy. It initially allowed the PSBs to hide a large part of their nonperforming assets (NPAs) and when the hidden NPAs assumed a substantial volume, tightened the norms for defining NPAs and forced the PSBs to suddenly declare their NPAs. As the NPAs of the PSBs increased steeply, the RBI adopted punitive measures against them and made such comments and observations that the people became very much apprehensive about losing their savings parked with the PSBs. Our analysis in this chapter shows that in such a scenario, there will be a cumulative contraction in GDP, PSBs' business will contract sharply and their profit and equity prices will plummet precipitously. This will give the government an excuse to sell off the PSBs to the capitalists at throw away prices on grounds of efficiency.

The increase in the NPAs in the PSBs cannot be attributed to their inefficiency relative to that of the Indian private banks. The reason may be briefly stated as follows: The recession started in India from 2011-12. The proportion of non-performing assets in the total loans given by the PSBs started increasing since then. However, domestic private banks remained free of this problem (refer to Tables 3.1 and 3.2). This calls for an explanation. The recession caught Indian firms, PSBs and Indian private banks completely unawares. No national or international forecasting agencies such as the RBI or IMF made any prediction about the impending recession. The recession, as should normally be the case, led to an increase in the loan default rate. However, surprisingly, the increase in the default rate was confined to the PSB loans in the main. This cannot be explained on grounds of efficiency. Neither the PSBs nor the Indian private banks could predict the recession. They were equally inefficient in this respect. Since these two types of banks could not predict the recession, it was not possible for them to predict what form it would take, that is, how it would affect different sectors and firms of the economy. Therefore, it is not possible to attribute Indian private banks' success in withstanding the onslaught of recession to their efficiency relative to that of the PSBs. One should also note in this context that most of the banks and financial institutes of the US, which were all private, were either bankrupt or on the verge of bankruptcy following the collapse of the house price bubble in 2007. Moreover, in recent years, bank frauds are rising at an alarming rate and these frauds are, again, confined principally to the PSBs. Finally, the large increase in the stock of nonperforming assets of the PSBs is principally due to loan defaults by large or corporate borrowers. All this suggests that the plight of the PSBs is due to a conspiracy hatched by the capitalists to discredit them and, thereby, to take them over at throwaway prices.

#### **5.4 Chapter 4: Macroeconomics of Corruption and Crime in India**

The objective of this chapter is to explore the macroeconomic implications of the link between corruption and crime using a macro-theoretic model that we hope captures the salient features of India. This chapter, however, is based on a very different presumption regarding how the

capitalist world works. It presumes that the capitalist world is completely under the control of the capitalists. It develops arguments to vindicate this presumption. It argues that almost all the developing countries like India were former colonies of Western Europe and the USA and they are at the present completely dependent on the Western Europe and the USA for knowledge and technology. Accordingly, their production and investment are highly import intensive, while their ability to export is extremely limited, since it is not possible to compete in the world market with imported knowledge and technology. Therefore, these countries cannot get themselves going. The capitalists of the Western Europe and the USA, who by our assumption control the capitalist world, get these countries going by placing export orders with them and by buying their financial assets on a large scale (for evidential support of this line of thought in case of India, one can go through Ghosh and Ghosh (2016), Chapter 8). The capitalists, therefore, have these developing countries like India completely under their control. In many of these developing countries including India, the small producers produce a significant part of GDP. This chapter argues that the capitalists wield State power and own all the political parties. Taking advantage of their State Power and the political parties, the capitalists appoint criminals to extort money and land from the small producers so that the corporate sector can grow at the expense of the small producers.

Given the hypothesis stated above, the criminals in a capitalist country cannot operate unless they work for the capitalists and enjoy the patronage of the capitalists through the political parties. The objective of this chapter, as we have pointed out above, is to show how the criminals extort money from the small producers so that the business empire of the capitalists can grow at the expense of the small producers.

In what follows, we will just state the principal results of this chapter and briefly explain them.

#### **5.4.1 The Model**

To capture the impact of exploitation of the small producers through criminal extortion, we consider a disaggregated framework where the Indian economy is made up of two segments: the unorganized sector and the organized sector. The small producers constitute the former. The latter consists of the public sector, the non-government corporations and other large private enterprises.

#### **5.4.2 The Extortion of the Small Producers by the Middlemen in the Loan Market**

The capitalists through the political parties create a scenario where the small producers have to seek the help of the middlemen to secure loans from the financial institutions. In return for their services, the small producers have to pay the middlemen a given amount of money. We will examine here the impact of this illegal payment of commission. The small producers' output is constrained by the amount of intermediate inputs they are able to purchase from the organized sector with a given amount of fund at their disposal. This fund consists of their own fund and a given amount of loan that they are able to secure from the financial institutions. They secure the loan by pledging their land as collateral. When they default on their loan, they

lose their collateral to the lenders and the amount of loan they are able to secure next time also becomes less.

Following the payment of the commission, the amount of loan that the small producers can use for cultivation falls and as a result their output goes down. The resources released thereby enables the capitalists to raise their investment. The fall in the output of the small producers leads to a fall in their revenue corresponding to the given initial equilibrium amount of loan. This raises their default rate at the end of Round 1. The lenders, accordingly, take away some amount of land of the small producers. At the beginning of Round 2, the lenders decide to reduce their lending to the small producers as they have a smaller amount of collateral to offer. Hence, output of small producers fall and capitalists' investment increase again and this process continues until a new equilibrium is reached. From the above discussion we get the following proposition:

**Proposition 4.1:** If the capitalists using their political parties and State Power ensure that the small producers have to seek the aid of the middlemen to secure loans in return for a part of the loan as commission, there will take place a cumulative fall in the amount of the small producers' output and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the output of the small producers to raise their investment.

#### **5.4.3 The Extortion of the Small Producers by the Criminals at the Time of Sale of their Produce in the Loan Market**

The criminals appointed by the capitalists take away a part of the sales revenue of the small producers. Obviously, the criminals get away with it because they work for the capitalists who wield State Power. The amount of money extorted by the criminals also, as in the earlier case, raises the default rate of the small producers starting a process that brings about a cumulative decline in the amount of output and land of the small producers. This yields the following proposition:

**Proposition 4.2:** If the capitalists using their political parties and State Power employ criminals to take a part of the sales revenue of the small producers, there will take place a cumulative fall in the amount of output of the small producers and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the output of the small producers to raise their investment.

#### **5.4.4 Land Grab of the Small Producers by the Criminals**

The criminals appointed by the capitalists force the small producers to part with their land for a pittance. Obviously, the criminals get away with it because they work for the capitalists who wield State Power. As a result of this land grab, the amount of collateral the small producers

can offer declines. This, just as in the earlier cases, bring about a cumulative decline the output and land of the small producers. From the above discussion we get the following proposition:

**Proposition 4.3:** If the capitalists using their political parties and State Power employ criminals to take away a part of the land of the small producers, there will take place a cumulative fall in the amount of output of the small producers and a cumulative decline in the amount of land in the possession of the small producers. Their misery and destitution will increase immensely. The capitalists will use the resources released from the output of the small producers to raise their investment.

#### 5.4.5 Conclusion

This study is based on the hypothesis that the capitalists in the capitalist countries and their satellites like India own the political parties and wield the State Power. It follows from this hypothesis that the criminals who commit crimes and get away with them are employees of the capitalists. In other words, the sector of organized crime is an enterprise of the capitalists. In India, quite a large part of the GDP is produced by the small producers. This study shows how the capitalists by using the criminals can make the output of the small producers shrink and grab their land.

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