

Chapter 15

A Game Theoretic Approach to Corporate Lending by the Banks in India

Rituparna Das

National Law University Jodhpur, India

ABSTRACT

A series of corporate loan defaults facing the Indian banks in the post-crisis period of 2008 led to the downgrading of India's global credit rating in 2012. Against this backdrop, this chapter delivers an insight to the reader into the games that occur between lending banks and corporate borrowers in addition to the games between the banks themselves in lending competition. The chapter covers various strategies of actions in the structures of bilateral monopoly, duopoly, and oligopoly, the Nash equilibrium, prisoners' dilemma, decision trees, and binomial analysis. In modeling the default probability, the profits of the lender and the borrower, a number of corollaries, one lemma, and one theorem are deduced in this chapter.

INTRODUCTION

An impoverished writer borrows money from several former college friends after finding himself unable to repay a debt. The debt takes on a circular nature where the creditors owe money to

each other but the writer walks away (By Shibram Chakraborty, retold by Kaushik Basu to James Lemont).

The official perspective put forth by the economists of the Reserve Bank of India (RBI) towards non-performing loans is that political, economic, social, technological, legal, and environmental factors contribute to the problem of non-performing

DOI: 10.4018/978-1-4666-4745-9.ch015

loans in the credit portfolios of banks in India. In the winter of 2003, the RBI articulated in a note of caution that the domestic banks need to take sufficient care in terms of framing appropriate lending policy such as to dare the borrower to default. This note of caution still remains relevant because a sharp deterioration of the loan quality of the major banks of India led to deterioration of India's global credit rating at the end of 2012. Hence, there is a need to analyze the different forms of actions and games of the banks and their corporate borrowers.

BACKGROUND

Livemint and the *Wall Street Journal* (2013) reported:

1. Many of the infrastructure projects would reach their project completion deadlines from the next fiscal year onwards, the time when they are required to start making the loan repayments;
2. Outstanding bank loans to infrastructure firms rose to Rupees (Rs.) 6.9 trillion as of 31 December 2012, up from Rs. 5.96 trillion a year earlier; and
3. Growth of such credit slowed to 16% in the 12 months ending in December, 2012 down from 20.5%.

Dun and Bradstreet (2012) observed that many retailers on the supply side are slowing down their expansion plans and many real estate developers are falling behind schedules in their shopping mall projects due to the continuing credit crunch. The economic slowdown has deeply affected the Indian organized retail sector in terms of deceleration in retail sales growth, footfalls, store expansions, employment rates and, most importantly, profitability. Previously in a similar note, the Indian Express (2010) observed that: (i) the RBI hiked the risk weight on commercial real estate project

loans to 1% from 0.4%; and (ii) there was more than a 40% increase in loans to commercial real estate, but side by side nearly 14% of commercial realty assets were restructured by banks.

CRISIL (2011) observed the number of defaults in real estate doubled in December 2011 over the previous year. In 2011, ICRA observed the following:

1. Historically banks have been taking exposure for state power projects as well as for independent power projects, but many banks are approaching the exposure cap on lending to the power sector;
2. Given the concerns hovering over the prospects of the sector itself, the pace of growth of credit to this segment could slow down. Standard & Poor's (2012) warned that India could become the first of the BRIC (Brazil, Russia, India, China) economies to lose its investment-grade status due to bad loans which continue to threaten growth prospects of the economy.

Considering the above dismal state of corporate lending business facing Indian banks, there is a need to reexamine the implications of different aspects of the games between the banks and their borrowers, and between the banks themselves as competing lenders.

OBJECTIVES

Against the backdrop of the loan default crisis mentioned above, this chapter is concerned with the economic analysis of the following aspects of the games in the lending business:

1. Success and failure in bargaining
2. Cooperation and non-cooperation
3. Strategies in duopolistic and oligopolistic structures
4. Nash Equilibrium

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/a-game-theoretic-approach-to-corporate-lending-by-the-banks-in-india/94103

Related Content

Classification and Management of Commercial Vehicle Production

Jiang Zhi (2021). *International Journal of Circular Economy and Waste Management* (pp. 16-19).

www.irma-international.org/article/classification-and-management-of-commercial-vehicle-production/281609

Water Availability Challenges in Low-Income Areas of Agbowo Community, Ibadan, Nigeria

Tosin Kolajo Gbadegesin and Olawale Olayide (2021). *International Journal of Circular Economy and Waste Management* (pp. 81-96).

www.irma-international.org/article/water-availability-challenges-in-low-income-areas-of-agbowo-community-ibadan-nigeria/263504

A Review of Challenges and Approaches to Effective Medical Solid Waste Management During the COVID-19 Pandemic in India

Narayana Maharana, Lingaraj Prasad Patnaik, Bidhu Bhusan Mishra, Suman Kalyan Chaudhury and Jyotirmayee Mohanty (2022). *International Journal of Circular Economy and Waste Management* (pp. 1-17).

www.irma-international.org/article/a-review-of-challenges-and-approaches-to-effective-medical-solid-waste-management-during-the-covid-19-pandemic-in-india/309986

Heavy metals removal from groundwater: A review based on cost estimation of various adsorbents

(2022). *International Journal of Circular Economy and Waste Management* (pp. 0-0).

www.irma-international.org/article//302208

Circular Economy Model for the E-Waste Management Sector

Dileep Baburao Baragde and Amit Uttam Jadhav (2020). *Handbook of Research on Entrepreneurship Development and Opportunities in Circular Economy* (pp. 216-230).

www.irma-international.org/chapter/circular-economy-model-for-the-e-waste-management-sector/256099