Fair Price of a Multi-National Corporate Bond by an Industrial Bank

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe the fair price of a multi-national corporate bond by an industrial bank. The paper ends with "The End"

Introduction

The steps to industrialization of a nation begins with the establishment of an industrial bank.

The industrial bank acquires seed capital from the national public through initial public offering of shares—both preferred stock and common stock, but the persons who buy these highly valuable shares are inevitably either wealthy individuals or reserve banks or central banks or multi-national corporations (MNCs).

Thus, an industrial bank is quite different from a reserve or a central bank, in the sense that its primary customer is not the national public at large, but rather high-net-worth investors (HNWIs) and multi-national corporations (MNCs).

Therefore, the industrial bank largely doesn't operate with depositors' capital like traditional banks, but rather on highly leveraged international credit from its customers, who form the industrial bases of various nations.

This essentially requires the industrial bank to have nationals charters of its own, with not only limited liability protections, but also higher reserve requirements than a reserve bank or a central bank, and environmental guarantees, which makes the industrial bank an important national institution by its own rights.

Fair Price of a Multi-National Corporate Bond

Consider a multi-national corporation $\mathfrak{M}$ that operates in $m \geq 1$ nations $\mathbb{N} = \{n_1, n_2, \ldots, n_m\}$ with respective central bank risk-free rates $\mathbb{R} = \{r_1, r_2, \ldots, r_m\}$

Consider a multi-national corporate bond $\mathbf{B}(\mathbb{C}, M)$ issued by $\mathfrak{M}$ with $n \geq 1$ coupons $\mathbb{C} = \{c_1, c_2, \ldots, c_n\}$ with $c_i > 0$ and maturity $M > 0$.

Then the fair price of $\mathbf{B}(\mathbb{C}, M)$ is

$$P(\mathfrak{M}, \mathbb{N}, \mathbb{R}, \mathbf{B}(\mathbb{C}, M)) = \frac{M}{1 + \sum_{i=1}^{n} f^i} + \sum_{i=1}^{n} \frac{c_i}{1 + \sum_{j=1}^{i} f^j}$$

where
$f \neq 0$ is the fair rate that minimizes $\frac{\sum_{k=1}^{m} |f - r_k|}{m}$

The End