

An Analysis of the Performance of Hybrid Models in the Assessment of Default Risk within Basel II and III context

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Abstract

In this paper we have combined fundamental analysis and contingent claim analysis into a hybrid model of credit risk measurement with French companies listed on the Paris Stock Exchange (Euronext Paris). Our goal is to assess how the combination of continuous assessments provided by the market and the values derived from financial statements improve our ability to forecast the probability of default. During a first phase, the probability of defaults are estimated using both methods separately, and subsequently, the probability of default of the structural model are integrated at each point in time in the non-structural model as an additional explanatory variable. The appeal of the hybrid model allows the probability of default to be continuously updated by integrating market information via the probabilities of default extracted from the structural model contribute significantly to explaining default risk when included in a hybrid model with accounting variables.

I. Introduction

CREDIT RISK REFERS to the risk due to unpredicted changes in the credit quality of a counter party or issuer and its quantification is one of the major frontiers in modern finance. The creditworthiness of a potential borrower affects the lending decision and the credit spread, since it is uncertain whether the firm will be able to perform its obligation. Credit risk measurement depends on the likelihood of default of a firm to meet its a required or contractual obligation and on what will be lost if default occurs. When one considers the large number of corporations issuing fixed income securities and the relatively small number of actual defaults might regard default as rare event. However, all corporate issuer have some positive probability of default. Models of credit risk measurement have focused on

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