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Determining the economic value of ambiguous loan portfolios

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ABSTRACT

This study presents a framework to assess the fair economic value of ambiguous loan portfolios, i.e. when the credit qualities of the loans within are deeply masked or simply undetermined through traditional techniques. In this case, the second best choice for approximating the portfolio's economic value would be to lean on the past performance of the designated credit officer who either approved or rejected the loan applications. The article presents a Beta-Binomial distribution model that captures the entire spectrum of possible economic valuations and their respective likelihoods and shows that this dissemination can be summarized to a single fair economic value for any ambiguous loan portfolios. This methodology exhibits high importance to regulators, policy makers, and internal auditors.

1. Introduction

Throughout the past decade bank supervisors and internal auditors have witnessed several key regulatory changes considering the necessary appraisal of fair economic values of loans; many of them are batched within the written guidelines of the recent Basel committees.[1] In particular, the third

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[1] Within the US, these bank supervisors include the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve System, the Office of Thrift Supervision (OTS), the National Credit Union Administration (NCUA), and some state banking agencies.

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Basel Accord requires financial institutions to account for the unilateral counterparty risk to their lending transactions and to continuously assess the potential economic losses incurred.[2] In addition, new accounting paradigms concerning the evaluation of bank loan-losses have been adopted by the Financial Accounting Standards Board (FASB). More specifically, Financial Accounting Standard (FAS) 5 (paragraph 8), named "Accounting for Contingencies," and FAS 114, named "Accounting by Creditors for Impairment of a Loan," have set new criteria for recognizing economic losses in light of probable asset impairment. These contemporary governing transformations and relatively new accounting standards have further implications for banks' capitalization adequacy and therefore affect the overall banks' competency.

Concurrently, in many instances banks encounter ambiguous loan requests and consider them despite their vague creditworthiness. Among these uncertain bank lending activities we can find loans given to Small and Medium Enterprises (SME) having unique or unprecedented business characteristics, agricultural or commercial loans in regions that are subject to unforeseen environmental hazards (such as hurricanes, floods, earthquakes, tornados, fire, or sinkholes), subprime mortgage loans with insufficient credit history recorded, emergency loans when there is not enough time for the appointed credit officers to conduct proper due diligence, or common loans to private organizations that naturally have scarce public information.[3] These uncertain loans often take the form of relationship funding by community banks hence they habitually rely on personal long-lasting interactions between the borrowers and the lending banks.[4] Within these ordinary circumstances it is nearly impossible for credit officers to estimate the respective likelihoods of default through standard multivariable methods of econometrics and therefore to genuinely rate or grade these loans.[5] Consequently, banks and lending institutions alike cannot and in fact do not assess the fair economic values of these doubtful loan portfolios.

The purpose of this short study is to present a practical model to determine the economic values of banks' ambiguous loan portfolios. The research question at hand lies within the realm of assessing fair economic values for loan portfolios when respective credit profiles are either deeply masked or simply unidentified. Regulators, policy makers, and banks' internal auditors could benefit from the current proposition. The present inquiry joins prior studies in its search for sensible economic values of banks' lending activities. Among other recent articles that have probed into this domain, Maskara (2010) examines the economic value of tranching in syndicated loans and Taylor (2012) explores the economic value of loan advice.

2. The proposed measure

When the underlying credit capabilities of borrowers are profoundly concealed, or when debtors' credit qualities cannot be recognized through traditional techniques, the second best choice to assess the fair economic values of these loan portfolios would be to lean on the past performance of the credit officer who granted these loans. In light of prior experiences and accrued knowledge that credit officers naturally accumulate, this approach is likely to be endorsed by the relationship lending economic rationale.

In this setting, based on an officer's past successes and failures in similar instances, we shall obtain a complete dissemination of economic values and their matching probabilities, and then derive a single realistic economic valuation for an entire bank's portfolio of ambiguous loans. We can therefore

[2] To date, there are two existing methods for evaluating changes in the underlying economic value of bank loans. The first is based on the "marked to market" approach for securitized loans traded at sufficiently liquid markets. The second focuses on conceivable events of default for non-securitized loans. Within the second methodology, expected losses are typically computed as the product of the Probability of Default (PD), the Loss Given Default (LGD), and the Exposure at Default (EAD).

[3] Holod and Peek (2013) explain that SME often have little or no collateral and, in many cases, are relatively young firms lacking an extensive history from which future performance can be extrapolated, thus lending banks are not well informed about the credit quality of these informational opaque enterprises.

[4] Boot (2000) and Elyasiani and Goldberg (2004) provide broad perspective on the rationale of relationship lending.

[5] Berger et al. (2011) find that the use of credit scores in small business lending by community banks is surprisingly widespread, but the scores employed tend to be the consumer credit scores of the small business owners, rather than truthfully reflecting the credit quality of the borrowing enterprises.