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Journal of Banking & Finance 28 (2004) 835–856
Journal of BANKING & FINANCE
www.elsevier.com/locate/econbase

Consumer credit scoring: Do situational circumstances matter?

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Abstract

Although credit history scoring offers benefits to lenders and borrowers, failure to consider situational circumstances raises important statistical issues that may affect the ability of scoring systems to accurately quantify an individual's credit risk. Evidence from a national sample of credit reporting agency records suggests that failure to consider measures of local economic circumstances and individual trigger events when developing credit history scores can diminish the potential effectiveness of such models. There are practical difficulties, however, associated with developing scoring models that incorporate situational data, arising largely because of inherent limitations of the credit reporting agency databases used to build scoring models.

JEL classification: G2
Keywords: Credit scoring; Consumer credit; Credit risk

1. Introduction

Over the past 20 years, US consumer credit markets have increasingly become national in scope and characterized by intense competition. This trend has been facilitated by the development of low-cost, statistically derived credit scoring models used to mechanically screen, price, and monitor consumer credit accounts. Although such models have been used in consumer lending for some time, their role has expanded in recent years because of improvements in the coverage and accuracy of data maintained by credit reporting agencies (sometimes referred to as credit bureaus), that are at the heart of most credit scoring models. Indeed, many credit scoring models,

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0378-4266/$ - see front matter
doi:10.1016/j.jbankfin.2003.10.009

particularly those used for screening unsecured open-ended consumer credit such as credit cards, are now based entirely on information contained in credit reporting agency files. These models, known as credit history scoring models, have been proven to be highly predictive of future loan performance. They generally involve significant fixed costs to develop, but can be used to screen additional consumers at very low marginal costs, enabling institutions to compete for customers in a national market.

Credit history scoring models offer the advantages of low-cost and consistent quick screening, and because such models are based only on information contained in credit reporting agency files, they can be used to screen almost any potential customer. However, because they are based on less information than that traditionally used in consumer credit screening, they have the potential drawback of being less accurate than models based on a fuller set of information. In particular, situational information about the economic or personal circumstances of individuals is generally not accounted for in credit history scoring models. That is, these models typically are constructed without any interactions between the information in consumer credit records and information pertaining to the economic environment in which the consumers live or work, or other contextual information about their personal circumstances. Thus, an individual who has experienced credit problems for transitory reasons, such as a local economic recession or a personal adverse trigger event such as a medical emergency, typically would be assigned a comparable score to an individual whose credit problems reflect chronic excessive spending or an unwillingness to repay debts. The outlook for future performance on new or existing credit for these two individuals, other factors held constant, may be quite different.

In this paper we examine the potential costs of failing to incorporate situational data into consumer credit evaluations. We also discuss practical difficulties associated with the development of credit scoring models that incorporate situational data. These difficulties arise in large measure because of inherent limitations of the credit reporting agency databases used to build many scoring models. These issues have potential importance for public policy. They touch on the questions of whether the trend toward a national consumer credit market is likely to be associated with higher consumer credit losses and whether the legal rules regarding information collected by the credit reporting agencies might inadvertently be contributing to a less accurate credit risk screening system.

For our analysis, we rely on a sample of credit files from a national credit reporting agency obtained by the Board of Governors of the Federal Reserve System (see Avery et al., 2003). These data contain the credit records of a large, nationally representative cross-section of individuals. The information obtained is similar to the "raw" data that would be available to a credit history model builder when constructing a credit history score. The credit reporting agency also supplied the contemporaneous credit score for each individual based on the company's own proprietary credit history scoring model.

We perform three indirect inferential tests of the potential value of situational information in credit scoring. The first test addresses the potential relevance of local economic conditions in forecasting future credit performance. Specifically, we exam-