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Credit derivatives in banking: Useful tools for managing risk? [☆]

Gregory R. Duffee^{a,*}, Chunsheng Zhou^b

^a *Haas School of Business, University of California, 545 Student Services Building #1900, Berkeley, CA 94720, USA*

^b *Guanghua School of Management, Beijing University, China; Anderson School of Management, University of California at Riverside, Riverside, CA 92521, USA*

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Abstract

We model the effects on banks of the introduction of a market for credit derivatives; in particular, credit-default swaps. A bank can use such swaps to temporarily transfer credit risks of their loans to others, reducing the likelihood that defaulting loans trigger the bank's financial distress. Because credit derivatives are more flexible at transferring risks than are other, more established tools, such as loan sales without recourse, these instruments make it easier for banks to circumvent the "lemons" problem caused by banks' superior information about the credit quality of their loans. However, we find that the introduction of a credit-derivatives market is not necessarily desirable because it can cause other markets for loan risk-sharing to break down. © 2001 Elsevier Science B.V. All rights reserved.

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*Corresponding author. Tel.: +1-510-642-1435; fax: +1-510-643-1420.

E-mail address: duffee@haas.berkeley.edu (G.R. Duffee).

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1. Introduction

Credit derivatives are over-the-counter financial contracts that have payoffs contingent on changes in the credit quality of a specified firm or firms; the specified firm is typically not a party to the contract. The market for credit derivatives was developed during the early 1990s by large money-center commercial banks and investment banks. The market is small but is growing quickly.

To date, credit derivatives are used to trade risks that are already traded in existing markets. The underlying instruments on which credit derivatives are written are typically corporate bonds, Brady bonds, large leveraged bank loans, or pools of homogeneous small loans such as credit card receivables. Thus, for now, credit derivatives can be thought of as instruments that repackage traded risks into more convenient forms. The question we address here is whether, from a theoretical perspective, credit derivatives can also be used to trade heretofore nontraded credit risks. In particular, we focus on small and medium-sized bank loans for which asymmetric information concerns outweigh reputation concerns of the lending bank.

If credit derivatives could penetrate this market of untraded risks, the effects on banks likely would be large. (Here, we view banks as end-users of credit derivatives, and ignore the potential profits to be made by money-center banks as dealers in the credit-derivatives market.) Bank loan portfolios are typically concentrated within business sectors and geographic regions. An important reason for this concentration is an asymmetric information problem: Banks know more about the value of their loans than do outsiders. Banks with high-quality loans will tend to refrain from selling pieces of their portfolio if outsiders cannot distinguish such loans from low-quality loans. Reputation effects in the loan-sales market can help mitigate problems caused by asymmetric information, but the inherent limitations of such effects are evident in the continued concentration of banks' portfolios.

We argue that credit derivatives' flexibility in repackaging risks can, in some circumstances, allow banks to trade previously untradeable credit risks. The analysis follows an observation by Duffee (1996) that, depending on the nature of a bank's private information about a loan, the uncertainty in a loan's payoff potentially can be decomposed into a component (or components) for which the bank's informational advantage is relatively small and a component (or components) for which the bank's informational advantage is relatively large. If so, the bank can use a credit-derivative contract to transfer the former risks to outsiders, while retaining the latter risks at the bank. For example, we argue that the bank's informational advantage is unlikely to be constant over the life of the loan. Thus the introduction of credit derivatives that temporarily transfer loan risk to outsiders could promote better risk sharing, thereby reducing the expected deadweight costs associated with bank insolvency.

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