



Risk and hedging: Do credit derivatives increase bank risk?

Norvald Instefjord *

*School of Economics, Mathematics and Statistics, Birkbeck College, Malet Street,
Bloomsbury, London WC1E 7HX, UK*

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Abstract

The objective of this paper is to investigate whether financial innovation of credit derivatives makes banks more exposed to credit risk. Although credit derivatives are important for hedging and securitizing credit risk – and thereby likely to enhance the sharing of such risk – some commentators have raised concerns that they may destabilize the banking sector. This paper investigates this issue in a simple model driven by costs of financial distress. The analysis identifies two effects of credit derivatives innovation – they enhance risk sharing as suggested by the hedging argument – but they also make further acquisition of risk more attractive. The latter effect, if dominant, can therefore destabilize the banking sector. The critical factor is, perhaps surprisingly, the competitive nature of the existing underlying credit markets. As these markets become more elastic the threat of destabilization increases. The paper discusses issues related to bank regulation within the context of the model.

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The paper addresses the question whether financial innovation of credit derivatives and the resulting derivatives trading make banks riskier. Banks have recently gained access to a relatively new and rich class of securities – credit derivatives – which have become actively traded. The scope for transferring risk in the banking sector has as a result increased considerably. As Altman et al. (1998) observe “banks

* Tel.: +44-171-631-6407; fax: +44-171-631-6416.

E-mail address: ninestefjord@econ.bbk.ac.uk (N. Instefjord).

no longer simply want to make loans (buy) and hold them either to maturity or charge-off, . . . [they] are increasingly willing to consider transacting their assets in counter party arrangements whereby the credit-risk exposure is shifted with the reduction in total risk of the original lender.” It would be easy to assert, therefore, that the supply of derivatives essentially reduces bank risk. Rule (2001) argues, for instance, that the “[d]evelopment of [the credit derivatives] markets has clear potential benefits for financial stability because they allow the origination and funding of credit to be separated from the efficient allocation of the resulting credit risk.” Recently, however, the Bank of England voiced concerns that the growth in credit derivative securities is a potential threat to bank stability. There is, therefore, a genuine debate about the effect that access to hedge instrument has on risk acquisition. The theoretical literature in this field is nonetheless somewhat limited. The bank risk literature has predominantly been occupied with the issue of risk measurement, and perhaps rightly so. A major problem for bank regulators is simply assessing the given risk exposure of the bank, and although standards have emerged it is clear that there is a long way to go. Additionally, banks’ internal risk measurement technology is by no means perfect, as Berkowitz and O’Brien (2002) point out. The line of attack in this paper, in contrast, is to identify the factors that make a bank inclined to increase its exposure to perceived risk regardless of how well it can be measured. This should not be taken to imply that risk measurement is unimportant. That risk measuring technology is imperfect is in our opinion a prime motivator for understanding the factors that drive risk taking behaviour. A better understanding of these factors is perhaps needed more when our ability to measure risk is impaired. This paper assesses also, therefore, potential ways of controlling risk acquisition in banks by directly affecting the bank’s incentives to expose itself to risk.

It is clear that credit derivatives trading can be socially beneficial or harmful in a systemic sector such as the banking sector (for a survey on systemic risk, see e.g., Dow (2000) and references therein). In perfect markets we expect nonetheless the trading of derivative instruments to be of insignificant importance to the firms’ value maximization problem. An extra ingredient is needed, therefore, to link the private motivation to acquire risk with the potential social costs of destabilization. In this paper, this extra ingredient is the deadweight costs of financial distress coupled with a rigid balance sheet. Although financial distress costs are not necessarily the whole story, they are certainly not implausible as both theoretical (see e.g., Giammarino, 1989) and numerous empirical studies argue. The costs of distress and the rigidity of their balance sheets induce banks to actively manage their risk exposures (in this case by credit derivatives trading) and incorporate risk management as an integral part of the activities that generate shareholder value. To an extent this is supported by casual empirical evidence. For instance, the BBA surveys (1999/2000 and 2001/2002) show that a number of banks in the London market argue that credit derivatives trading is more important in reference to active portfolio/asset management than in reference to compliance with regulation. That banks emphasize the economic importance of these securities is, therefore, significant.

The main contribution of the paper is to provide a theoretical framework in which to identify potential destabilizing factors for the banking sector and to discuss reg-

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