Stochastic Intensity Margin Modeling of Credit Default Swap Portfolios

Very Preliminary: Please do not quote or disseminate further without permission.

Samim Ghamami [*], Baeho Kim [†] and Dong Hwan Oh [‡]

This version: September 26, 2016[§]

Abstract

Central counterparties (CCPs) calculate initial margin (IM) requirements of their members' credit default swap (CDS) portfolios by statistically modeling the CDS spreads along with a simplified pricing method. It is well-known that the valuation of a CDS contract does require a model for the default timing of the reference entity; this is absent from the current risk management practices at CCPs. We use the stochastic intensity approach for CDS margin modeling and show that CCPs' current margin estimates may substantially differ from those produced by intensity models.

JEL classification: C15, C53, C54, C63, E17
Keywords: Initial Margin Model, Credit Default Swap, Central Counterparty

[*]Office of Financial Research, D.C. 20220, USA, E-mail: Samim.Ghamami@ofr.treasury.gov, and Center for Risk Management Research, University of California, Berkeley, CA 94720-3880, USA, E-mail: samim_ghamami@berkeley.edu.

[†]Corresponding author. Korea University Business School, Anam-dong, Seongbuk-Gu, Seoul 136-701, Republic of Korea, Phone: +82-2-3290-2626, Fax: +82-2-922-7220, E-mail: baehokim@korea.ac.kr, Web: http://biz.korea.ac.kr/∼baehokim.

[‡]Federal Reserve Board, Washington, D.C. 20551, USA, E-mail: donghwan.oh@frb.gov.

[§]The authors thank Kay Giesecke and Haekang Lee for their helpful discussions and suggestions. They are also grateful to the participants at INFORMS Annual Meeting 2015 Philadelphia and 2016 First Seoul-Tokyo-Stanford Workshop on Financial Statistics and Risk Management for their insightful comments.