SSRN (https://www.ssrn.com/)

Product & Services

Subscribe

Submit a paper

Browse

Rankings

Blog ↗

Contact

(https://papers.ssrn.com/sol3/ShoppingCart

☆ Add Paper to My Library

Share: f 🐦 ✉ 🔗

Multi Currency Credit Default Swaps: Quanto Effects and FX Devaluation Jumps

40 Pages
Posted: 16 Dec 2015
Last revised: 22 Jan 2018

Damiano Brigo (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=268434)
Imperial College London - Department of Mathematics

Nicola Pede (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1297230)
Imperial College London - Department of Mathematics

Andrea Petrelli (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=769108)
Credit Suisse Securities

Date Written: January 20, 2018

Abstract

Credit Default Swaps (CDS) on a reference entity may be traded in multiple currencies, in that protection upon default may be offered either in the domestic currency where the entity resides, or in a more liquid and global foreign currency. In this situation currency fluctuations clearly introduce a source of risk on CDS spreads. For emerging markets, but in some cases even in well developed markets, the risk of dramatic Foreign Exchange (FX) rate devaluation in conjunction with default events is relevant. We address this issue by proposing and implementing a model that considers the risk of foreign currency devaluation that is synchronous with default of the reference entity. As a fundamental example we consider the sovereign CDSs on Italy, quoted both in EUR and USD.

Preliminary results indicate that perceived risks of devaluation can induce a significant basis across domestic and foreign CDS quotes. For the Republic of Italy, a USD CDS spread quote of 440 bps can translate into a EUR quote of 350 bps in the middle of the Euro-debt crisis in the first week of May 2012. More recently, from June 2013, the basis spreads between the EUR quotes and the USD quotes are in the range around 40 bps.

We explain in detail the sources for such discrepancies. Our modeling approach is based on the reduced form framework for credit risk, where the default time is modeled in a Cox process setting with explicit diffusion dynamics for default intensity/hazard rate and exponential jump to default. For the FX part, we include an explicit default-driven jump in the FX dynamics. As our results show, such a mechanism provides a further and more effective way to model credit/FX dependency than the instantaneous correlation that can be imposed among the driving Brownian motions of default intensity and FX rates, as it is not possible to explain the observed basis spreads during the Euro-debt crisis by using the latter mechanism alone.

Keywords: Credit Default Swaps, Liquidity spread, Liquidity pricing, Intensity models, Reduced Form Models, Capital Asset Pricing Model, Credit Crisis, Liquidity Crisis, Devaluation jump, FX devaluation, Quanto Credit effects, Quanto CDS, Multi currency CDS

JEL Classification: C51, G12, G13

Suggested Citation >

Show Contact Information >

0 References

Fetch References

0 Citations

Cookie Settings

Accept all cookies

Paper statistics

DOWNLOADS	735
ABSTRACT VIEWS	3,363
RANK	66,950

8	Citations
20	References

PlumX Metrics

(https://plu.mx/ssrn/a/?
ssrn_id=2703805)

Related eJournals

Capital Markets: Asset Pricing & Valuation eJournal (https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1508951)

Follow   ⓘ

Derivatives eJournal (https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1504400)

Follow   ⓘ

View more ›

Feedback 💬

Submit a Paper › (https://hq.ssrn.com/submission.cfm)

SSRN Quick Links   ⌄

SSRN Rankings   ⌄

About SSRN   ⌄

We use cookies to help provide and enhance our service and tailor content.

To learn more, visit Cookie Settings.

(http://www.relx.com/)

(https://papers.ssrn.com/sol3/updateInformationLog.cfm?process=true)