

Replication Results

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This document accompanies the GitHub repository¹ that illustrates and provides code for the estimation procedure developed in the paper *Jump Contagion among Stock Market Indices: Evidence from Option Markets* written by Peter Boswijk, Roger Laeven, Andrei Lalu and Evgenii Vladimirov.

The provided code illustrates the estimation procedure developed in the paper given the synthetic simulated dataset. In particular, the code reads the simulated options data and estimates the parameters of the bivariate model proposed in the paper based on the partial-information C-GMM. The estimation procedure minimizes the criterion function `./code/mSVhatHJ_crit_inst4.m`, which in turn involves the implied state procedure (function `./code/mSVhatHJ_ImpIntens.m`) and four numerical integrations of criterion functions based on the marginal states (function `./code/mSVhatHJ_int_inst4.m`). Given the estimated parameters, the standard errors are calculated using function `./code/mSVhatHJ_std.m`.

The estimated parameters are displayed as the result of the optimization and provided in Table 1 below. Additionally, the figure with the implied intensities is displayed and is duplicated in Figure 1 below.

Table 1: Estimation results for simulated data

	μ^Q	σ	κ	$\bar{\lambda}$	δ^s	δ^c	μ	η
stock-1	-0.127 (0.0005)	0.027 (0.0009)	5.627 (0.0158)	0.944 (0.0030)	3.201 (0.0181)	1.151 (0.0096)	-0.035 (0.0118)	2.986 (4.7736)
stock-2	-0.122 (0.0008)	0.031 (0.0030)	4.568 (0.0075)	0.788 (0.0024)	2.135 (0.0116)	3.288 (0.0126)	-0.036 (0.0102)	4.182 (4.7159)

This table reports bivariate model parameter estimates for the simulated pairs of stocks. Standard errors are reported in parentheses.

¹<https://github.com/evladimirov/Jump-Contagion>

Figure 1: Implied intensity for simulated data set

