

# Errata on the Impact of Jumps in Volatility and Returns\*

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## Abstract

We correct four places in Table I of the paper “Eraker B, Johannes M, Polson N (2003). The impact of jumps in volatility and returns. *Journal of Finance*, 58, 1269–1300.” by two methods. The first method is based on the derivatives of the moment generating functions. The second method is by elementary and straightforward calculations of the variance and the covariance.

*Keywords:* conditional moments, SV, SVJ, SVCJ, SVIJ.

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Table 1 provides the instantaneous variance and covariance of  $Y_t$  and  $V_t$  for the four models. In the table, there are four places which are different from those in Eraker, Johannes, and Polson (2003).

Table 1: **Conditional Moments.** This table summarizes the instantaneous conditional moments for the four models under consideration. In the case of the SVCJ model, the second moment of the jump sizes is  $E[(\xi^y)^2] = \mu_y^2 + 2\mu_y\mu_v\rho_J + 2\rho_J^2\mu_v^2 + \sigma_y^2$  (a).

	SV	SVJ	SVCJ	SVIJ
$\frac{1}{dt}Var(dY_t)$	$V_t$	$V_t + \lambda_y(\mu_y^2 + \sigma_y^2)$	$V_t + \lambda_y E[(\xi^y)^2]$	$V_t + \lambda_y(\mu_y^2 + \sigma_y^2)$
$\frac{1}{dt}Var(dV_t)$	$\sigma_v^2 V_t$	$\sigma_v^2 V_t$	$\sigma_v^2 V_t + 2\mu_v^2 \lambda_v$ (b)	$\sigma_v^2 V_t + 2\mu_v^2 \lambda_v$ (d)
$\frac{1}{dt}Cov(dY_t, dV_t)$	$\rho\sigma_v V_t$	$\rho\sigma_v V_t$	$\rho\sigma_v V_t + \lambda_y(\mu_y\mu_v + 2\rho_J\mu_v^2)$ (c)	$\rho\sigma_v V_t$

We provide two alternative methods to calculate the conditional moments. The first method is based on the derivatives of the moment generating functions. The second method is by elementary and straightforward calculations of the variance and the covariance. See the supplemental file “supplement.pdf” for details.

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