Online Appendix for " Consistent nonparametric specification tests for stochastic volatility models based on the return distribution"

Yang Zu*
School of Economics
University of Nottingham

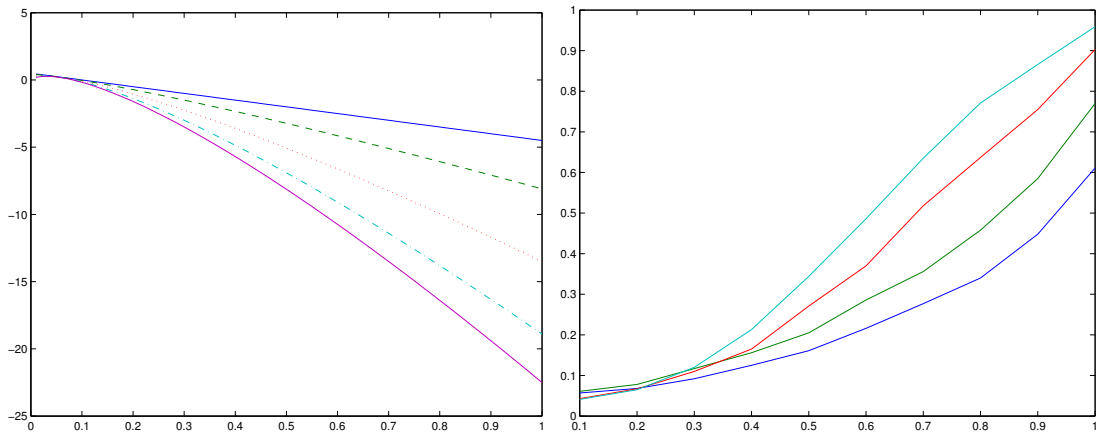
H. Peter Boswijk†
Amsterdam School of Economics
University of Amsterdam

December 31, 2016

This online appendix collects the power plots of the three tests under the same four types of deviations in Section 6.2, when the leverage effect exists. Comparing the results with those when no leverage effect exists, we find that the power of the tests is not much affected in the presence of the leverage effect.

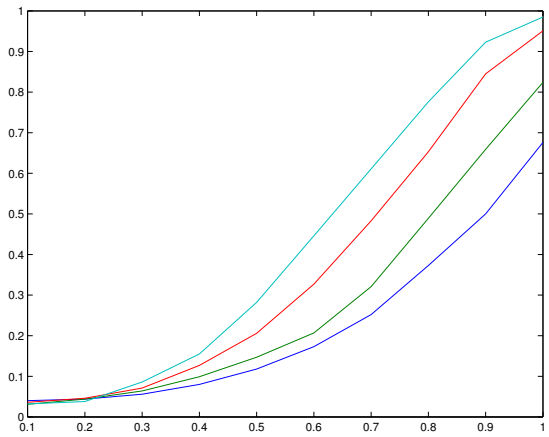
*Corresponding author. Email: Yang.Zu@nottingham.ac.uk. School of Economics, University of Nottingham, University Park, NG7 2RD Nottingham, United Kingdom. Telephone: +44 (0) 115 95 15480.

†Email: H.P.Boswijk@uva.nl. Amsterdam School of Economics, University of Amsterdam, Valckenierstraat 65-67, 1018 XE Amsterdam, The Netherlands. Telephone: +31 (0)20 525 4316.

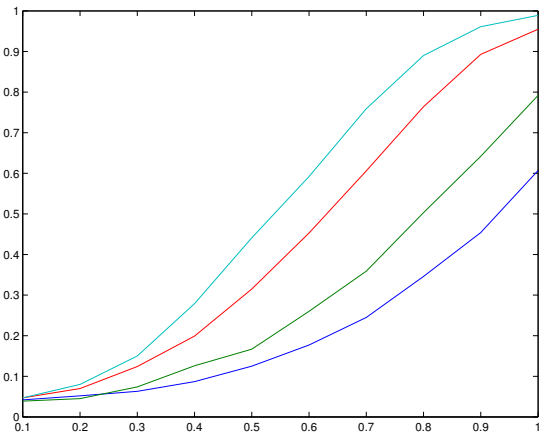


(a) Drift functions

(b) Power of T_0

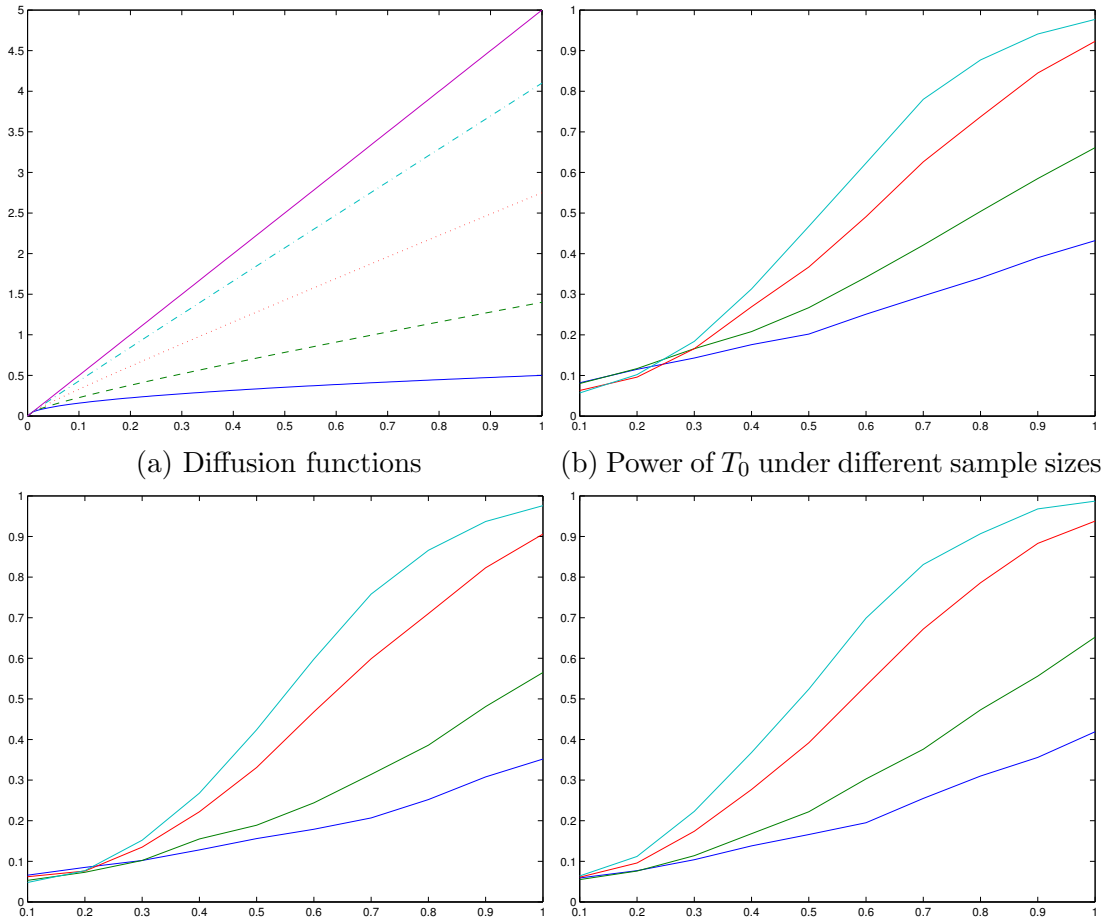


(c) Power of T_1



(d) Power of T_2

Figure 1: Power under misspecification of the drift function, in the presence of leverage effects. (a): drift function with $\tau = 0$ (solid), $\tau = 0.2$ (dashed), $\tau = 0.5$ (dotted), $\tau = 0.8$ (dash-dotted), $\tau = 1$ (purple solid). (b), (c), (d): $n = 500$ (blue), $n = 1000$ (green), $n = 2000$ (red), $n = 3000$ (cyan).



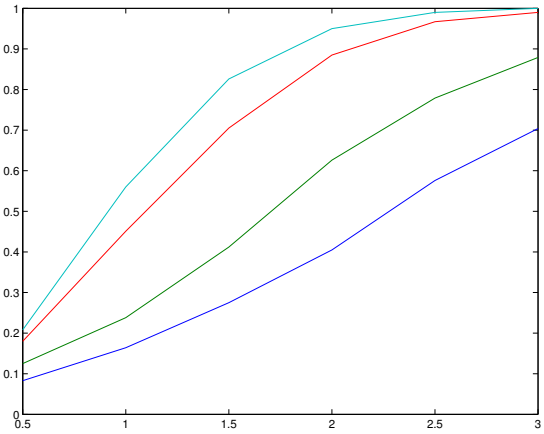
(a) Diffusion functions

(b) Power of T_0 under different sample sizes

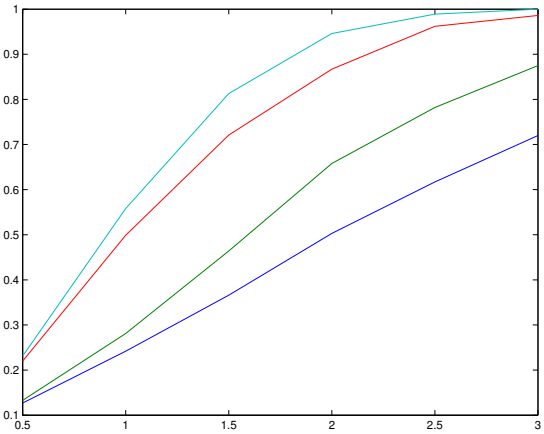
(c) Power of T_1 under different sample sizes

(d) Power of T_2 under different sample sizes

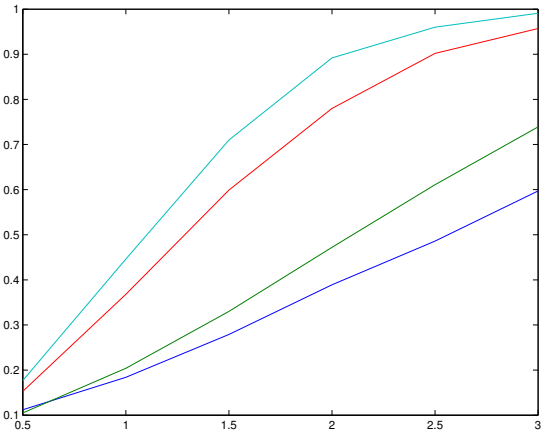
Figure 2: Power under misspecification of the diffusion function, in the presence of leverage effects. (a): drift function with $\tau = 0$ (solid), $\tau = 0.2$ (dashed), $\tau = 0.5$ (dotted), $\tau = 0.8$ (dash-dotted), $\tau = 1$ (purple solid). (b), (c), (d): $n = 500$ (blue), $n = 1000$ (green), $n = 2000$ (red), $n = 3000$ (cyan).



(a) Power of T_0

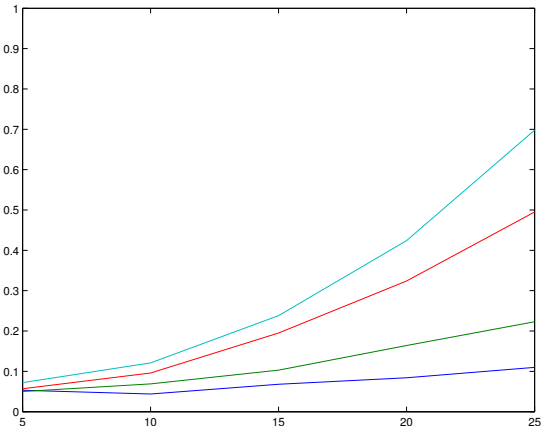


(b) Power of T_1

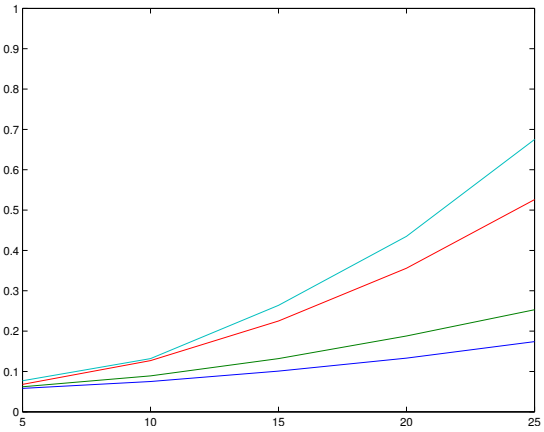


(c) Power of T_2

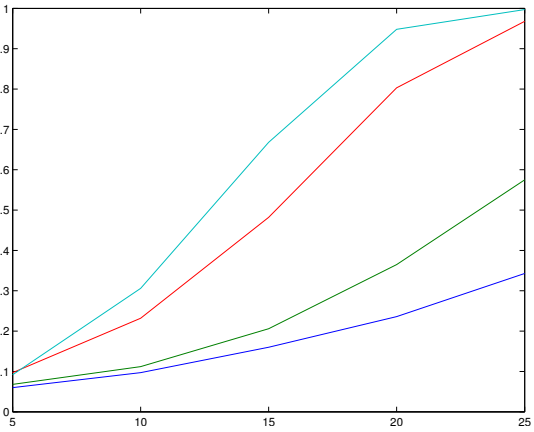
Figure 3: Power under different volatility jump intensities, in the presence of leverage effects. In (a), (b), (c): $n = 500$ (blue), $n = 1000$ (green), $n = 2000$ (red), $n = 3000$ (cyan).



(a) Power of T_0



(b) Power of T_1



(c) Power of T_2

Figure 4: Power under different price jump intensities, in the presence of leverage effects. (a), (b), (c): $n = 500$ (blue), $n = 1000$ (green), $n = 2000$ (red), $n = 3000$ (cyan).