

Copula References for ECO 7378 - Topics in Econometrics

Compiled by Jian Hu, August 2009

Classical papers and books:

Harvey, A., (2008) Dynamic distributions and changing copulas, *Cambridge Working Papers in Economics*

(A statistical framework is suggested for tracking the changes in copula over time.)

Lee, Tae-Hwy and Xiangdong Long, (2009) Copula-based multivariate GARCH model with uncorrelated dependent errors, *Journal of Econometrics* 150(2), 207-18

(This is a recent development on copula-based MGARCH model.)

Nelsen, R. B., (2006) An Introduction to Copulas, 2nd edition, New York: Springer.

(A formal and complete discussion about copula functions and properties can be found in this classical book.)

Patton, A.J., (2006) Modelling asymmetric exchange rate dependence, *International Economic Review* 47(2), 527-56

(This is a classical paper addressing “conditional copula”. It also presents a nice empirical application on foreign exchange market.)

Trivedi, Pravin K. and David M. Zimmer, (2005) Copula Modeling: An Introduction for Practitioners, *Foundations and Trends in Econometrics* 1(1) 1–111

(This paper demonstrates that practical implementation and estimation are relatively straightforward. An attractive feature of parametrically specified copulas is that estimation and inference are based on standard maximum likelihood procedures, and thus copulas can be estimated using desktop econometric software.)

Other useful references:

Embrechts, P., A. McNeil and D. Straumann, (2002) Correlation and Dependence Properties in Risk Management: Properties and Pitfalls, in M. Dempster, ed., *Risk Management: Value at Risk and Beyond*, Cambridge University Press.

(This seminal paper basically shows that copula has many advantages over simple linear correlation. It deals with the static case and emphasizes the copula representation of dependence for a random vector. The author proves that the dependence properties of the elliptical world do not hold in the non-elliptical world.)

Panchenko, V., (2005) Goodness-of-fit test for copulas, *Physica A* 355(1), 176-82

(A goodness-of-fit test for copula functions is proposed.)

Patton, A.J., (2009) Copula-Based Models for Financial Time Series, in T.G. Andersen, R.A. Davis, J.-P. Kreiss and T. Mikosch (eds.) *Handbook of Financial Time Series*, Springer Verlag.

(This is a survey paper on applications of copulas in the modeling of financial time series.)