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Kappa ratios and (higher-order) stochastic dominance

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Bea ([2009](#)) and Kutan and Yaya ([2016](#)).

2. We denote risk-seeking SD for risk seekers as RSD while Levy ([2015](#)) denotes it as RSSD. Readers may refer to Li and Wong ([1999](#)), Wong and Li ([1999](#)), Wong ([2007](#)), Levy ([2015](#)), and Guo and Wong ([2016](#)) for more information.

References

Bai, Z.D., Y.C. Hui, W.K. Wong, and R. Zitikis. 2012. Evaluating prospect performance: Making a case for a non-asymptotic UMPU test. *Journal of Financial Econometrics* 10 (4): 703–732.

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Beedles, W.L. 1979. Return, dispersion and skewness: Synthesis and investment strategy. *Journal of Financial Research* 2: 71–80.

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Brockett, P.L., and J.R. Garven. 1998. A reexamination of the relationship between preferences and moment orderings by rational risk-averse investors. *GENEVA Papers on Risk and Insurance Theory* 23 (2): 127–137.

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Brockett, P.L., and Y. Kahane. 1992. Risk, return, skewness and preference.

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Fong, W.M., W.K. Wong, and H.H. Lean. 2005. International momentum strategies: A stochastic dominance. *Journal of Financial Markets* 8: 89–109.

[Article](#) [Google Scholar](#)

Gasbarro, D., W.K. Wong, and J.K. Zumwalt. 2007. Stochastic dominance analysis of iShares. *European Journal of Finance* 13: 89–101.

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preference is nonlinear. *Management Science* 20 (7): 1047–1072.

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Hanoch, G., and H. Levy. 1969. The efficiency analysis of choices involving risk. *Review of Economic studies* 36: 335–346.

[Article](#) [Google Scholar](#)

Hoang, T.H.V., W.K. Wong, and Z.Z. Zhu. 2015. Is gold different for risk-averse and risk-seeking investors? An empirical analysis of the Shanghai gold exchange. *Economic Modelling* 50: 200–211.

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Levy, H. 1969. A utility function depending on the first three moments. *Journal of Finance* 24 (4): 715–719.

[Article](#) [Google Scholar](#)

Levy, H. 2015. *Stochastic dominance: Investment decision making under uncertainty*, 3rd ed. New York: Springer.

[Google Scholar](#)

Li, C.K., and W.K. Wong. 1999. Extension of stochastic dominance theory to random variables. *RAIRO-Operations Research* 33 (4): 509–524.

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Ogryczak, W., and R. Ruszczyński. 1999. From stochastic dominance to mean-risk models: Semideviations as risk measures. *European Journal of Operational Research* 116: 33–50.

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Ogryczak, W., and A. Ruszczyński. 2001. On consistency of stochastic dominance and mean-semideviation models. *Mathematical Programming* 89: 217–232.

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Ogryczak, W., and A. Ruszczyński. 2002. Dual stochastic dominance and related mean-risk models. *SIAM Journal of Optimization* 13: 60–78.

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Sriboonchitta, S., W.K. Wong, S. Dhompongsa, and H.T. Nguyen. 2009. *Stochastic dominance and applications to finance.*, Risk and economics Boca Raton: Chapman and Hall/CRC, Taylor and Francis Group.

[Google Scholar](#)

Stoyan, D., and D.J. Daley. 1983. *Comparison methods for queues and other stochastic models.* New York: Wiley.

[Google Scholar](#)

Vinod, H.D. 2004. Ranking mutual funds using unconventional utility theory and

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