1060-60-166   **Birgit Rudloff*** (`brudloff@princeton.edu`), Sherrerd Hall 203, Princeton University, Princeton, NJ 08544, and **Andreas Hamel**. *Risk measures for multivariate variables in markets with random solvency cones.*

We consider a conical market model (generated, for example, by proportional transaction costs or bid-ask price spreads) and extend the notion of set-valued risk measures (Jouini, Meddeb, Touzi 2004, Hamel, Heyde 2010) to the case of random solvency cones at terminal time. Several new features such as market compatibility will be discussed which do not appear (or are trivial) if the solvency cones are constant.

Dual representations are given in terms of vector probability measures. This admits an interpretation very close to the scalar case. Examples include the set-valued versions of the worst case risk measure and the average value at risk.

Related results will be discussed. For example, it can be shown that in analogy to the frictionless case the superhedging price in a conical market (see e.g. Schachermayer 2004, Pennanen, Penner 2009) is a set-valued coherent risk measure, where the supremum in the dual representation is taken w.r.t. the set of equivalent martingale measures.

Moreover, we will show that the case of multiple eligible assets perfectly fits into the set-valued framework: The scalar risk measures introduced in Artzner, Delbaen, Koch-Medina 2009 turn out to be scalarizations of set-valued risk measures. (Received March 29, 2010)