

The Empirical Relation between Credit Quality, Recovery, and Correlation

Daniel Rösch

Leibniz Universität Hannover

and

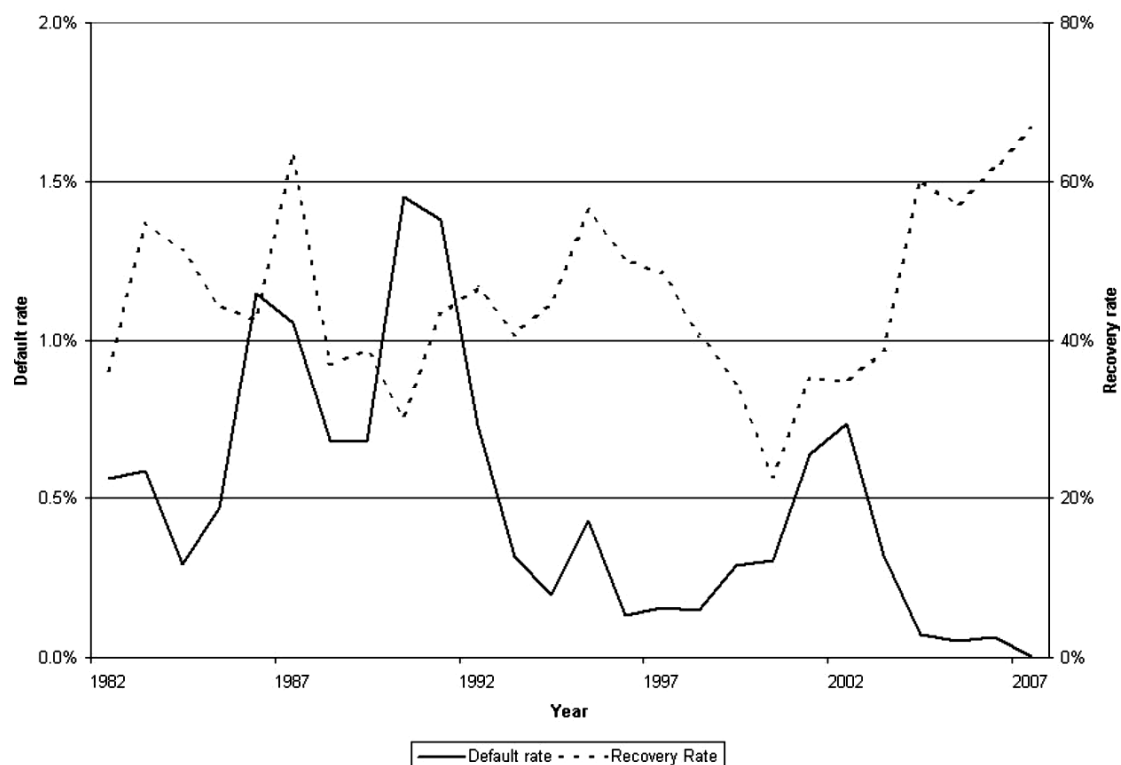
Harald Scheule

Hong Kong Institute for Monetary Research
The University of Melbourne

July 2009

Summary

The Global Financial Crisis highlights that during economic downturns, default and recovery rates of multiple borrowers generally deteriorate jointly. The following chart shows that default and recovery rates for US bond issues are negatively correlated. During an economic downturns, default rates are high while recovery rates are low. Economic downturns occurred in 1991 (First Gulf War) and 2001/02 (World Trade Centre terrorist attack and downturn in the Internet Economy):



Unfortunately, contemporary credit portfolio risk models are based on isolated modules for default probabilities and recoveries in the event of default. As a result, future credit portfolio losses may be severely under-estimated.

This paper shows that these common methods lead to various econometric drawbacks when the parameters are interpreted and aggregated for risk capital allocation and pricing purposes. This paper provides a top down approach in which individual credit risk parameters are derived analytically from a single model. This model explicitly accounts for i) dependencies between the parameters and ii) the fact that recoveries can only be observed after the occurrence of a default event. An empirical analysis provides evidence for the inferred relationship between credit quality, recovery and correlation.