Asset Pricing Model on Financial Guarantee Insurance

We use contingent claims analysis to evaluate portfolios of private financial guarantees and to analyse their sensitiveness with respect to interest rate models and correlation structure. By performing numerical simulations under plausible parameters value, we show that the guarantee value per dollar of debt proceeds (GVPD) depends on the interest rate models, especially on the long-run equilibrium mean parameter related with the business cycle. Furthermore, we test the hypothesis that GVPD decreases as the number of guaranteed firms increases. As a test result, it is true for sufficiently large number and it is due to the decline of guarantor’s guarantee capacity, not by the pooling effect of portfolio. Finally, the sensitivity analysis of GVPD for the correlation structure shows that the correlation between guarantor (or guaranteed firms) and interest rate is of importance as far as the ratio of guaranteed amounts to guarantor’s asset value is sufficiently small, but the correlation between guarantor and guaranteed firms is important as the ratio increases.