Seminar „Topics in Insurance and Risk Management"

1) The Valuation Implications of Enterprise Risk Management Maturity (Farrell & Gallagher, 2015)

2) Reputation Repair After a Serious Restatement (Chakravarthy et al., 2014)

3) Valuation of Wind Energy Projects: A Real Options Approach (Abadie & Chamorro, 2014)

4) Insurance Demand Under Prospect Theory: A Graphical Analysis (Schmidt, 2016)

5) A note on the appropriate choice of risk measures in the solvency assessment of insurance companies (Wagner, 2014)

6) The Value of Enterprise Risk Management (Hoyt & Liebenberg, 2011)

1) The Valuation Implications of Enterprise Risk Management Maturity

Ansprechpartner: Philipp Lechner

Literaturhinweis:

Farrell, M., & Gallagher, R. (2015). The Valuation Implications of Enterprise Risk Management Maturity. *The Journal of Risk and Insurance*, 82(3), 625-657.

Abstract:

Enterprise Risk Management (ERM) is the discipline by which enterprises monitor, analyze, and control risks fromacross the enterprise, with the goal of identifying underlying correlations and thus optimizing the risk-taking behavior in a portfolio context. This study analyzes the valuation implications of ERM Maturity. We use data from the industry leading Risk and Insurance Management Society Risk Maturity Model over the period from2006 to 2011, which scores firms on a five-point maturity scale. Our results suggest that firms that have reached mature levels of ERM are exhibiting a higher firm value, as measured by Tobin's Q. We find a statistically significant positive relation to the magnitude of 25 percent. Upon decomposition of the maturity score, we find that the most important aspects of ERM from a valuation perspective relate to the level of top–down executive engagement and the resultant cascade of ERM culture throughout the firm. Firms that have successfully integrated theERMprocess into both their strategic activities and everyday practices display superior ability in uncovering risk dependencies and correlations across the entire enterprise and as a consequence enhanced value when undertaking the ERM maturity journey ceteris paribus.

2) Reputation Repair After a Serious Restatement

Ansprechpartner: Dinah Heidinger

Literaturhinweis:

Chakravarthy, J., deHaan, E., & Rajgopal, S. (2014). Reputation Repair After a Serious Restatement. *The Accounting Review*, 89(4), 1329-1363.

Abstract:

How do firms repair their reputations after a serious accounting restatement? To answer this question, we review firms' press releases and identify 1,765 reputation-building actions taken by: (1) 94 restating firms in the periods before and after their restatement; and (2) a set of matched control firms during contemporaneous periods. We posit that firms have incentives to

target multiple stakeholders in a reputation repair strategy—including capital providers, customers, employees, and geographic communities—and that actions targeting each group generate positive market returns as reputation capital is repaired. Consistent with our predictions, the frequency of, and stock returns to, reputation-building actions are greater for restating firms in the period after their restatement than for the control groups. In addition, firm characteristics predict the types of stakeholders targeted by firms. Finally, actions targeted at both capital providers and other stakeholders are associated with improvements in the restating firm's financial reporting credibility.

3) Valuation of Wind Energy Projects: A Real Options Approach

Ansprechpartner: Sarah Krömer

Literaturhinweis:
Abadie, L. M., & Chamorro, J. M. (2014). Valuation of Wind Energy Projects: A Real Options Approach. *Energies*, 7(2014), 3218-3255.

Abstract:
We address the valuation of an operating wind farm and the finite-lived option to invest in it under different reward/support schemes: a constant feed-in tariff, a premium on top of the electricity market price (either a fixed premium or a variable subsidy such as a renewable obligation certificate or ROC), and a transitory subsidy, among others. Futures contracts on electricity with ever longer maturities enable market-based valuations to be undertaken. The model considers up to three sources of uncertainty: the electricity price, the level of wind generation, and the certificate (ROC) price where appropriate. When analytical solutions are lacking, we resort to a trinomial lattice combined with Monte Carlo simulation; we also use a two-dimensional binomial lattice when uncertainty in the ROC price is considered. Our data set refers to the UK. The numerical results show the impact of several factors involved in the decision to invest: the subsidy per MWh generated, the initial lump-sum subsidy, the maturity of the investment option, and electricity price volatility. Different combinations of variables can help bring forward investments in wind generation. One-off policies, e.g., a transitory initial subsidy, seem to have a stronger effect han a fixed premium per MWh produced.

4) Insurance Demand Under Prospect Theory: A Graphical Analysis

Ansprechpartnerin: Maria Alexandrova

Literaturhinweis:

Schmidt, U. (2016). Insurance Demand Under Prospect Theory: A Graphical Analysis. *The Journal of Risk and Insurance*, 83(1), 77-89.

Abstract:

This article analyzes insurance demand under prospect theory in a simple model with two states of the world and fair insurance contracts. We argue that two different reference points are reasonable in this framework, statedependent initial wealth or final wealth after buying full insurance. Applying the value function of Tversky and Kahneman (1992), we find that for both reference points subjects will either demand full insurance or no insurance at all. Moreover, this decision depends on the probability of the loss: the higher the probability of the loss, the higher is the propensity to take up insurance. This result can explain empirical evidence that has shown that people are unwilling to insure rare losses at subsidized premiums and at the same time take up insurance for moderate risks at highly loaded premiums.

5) A note on the appropriate choice of risk measures in the solvency assessment of insurance companies

Ansprechpartnerin: Johanna Eckert

Literaturhinweis:

Wagner, J. (2014). A note of the appropriate choice of risk measures in the solvency assessment of insurance companies. *The Journal of Risk Finance,* 15(2), 110-130.

Abstract:

<u>Purpose</u> – The concept of value at risk is used in the risk-based calculation of solvency capital requirements in the Basel II/III banking regulations and in the planned Solvency II insurance regulation framework planned in the European Union. While this measure controls the ruin probability of a financial institution, the expected policyholder deficit (EPD) and expected shortfall (ES) measures, which are relevant from the customer's perspective as they value the amount of the shortfall, are not controlled at the same time. Hence, if there are variations in or changes to the asset-liability situation, financial companies may still comply with the capital

requirement, while the EPD or ES reach unsatisfactory levels. This is a significant drawback to the solvency frameworks. The paper aims to discuss these issues.

Design/methodology/approach – The author has developed a model framework wherein the author evaluates the relevant risk measures using the distribution-free approach of the normal power approximation. This allows the author to derive analytical approximations of the risk measures solely through the use of the first three central moments of the underlying distributions. For the case of a reference insurance company, the author calculates the required capital using the ruin probability and EPD approaches. For this, the author performs sensitivity analyses considering different asset allocations and different liability characteristics.

Findings – The author concludes that only a simultaneous monitoring of the ruin probability and EPD can lead to satisfactory results guaranteeing a constant level of customer protection. For the reference firm, the author evaluates the relative changes in the capital requirement when applying the EPD approach next to the ruin probability approach. Depending on the development of the assets and liabilities, and in the cases the author illustrates, the reference company would need to provide substantial amounts of additional equity capital.

Originality/value – A comparative assessment of alternative risk measures is relevant given the debate among regulators, industry representatives and academics about how adequately they are used. The author borrows the approach in parts from the work of Barth. Barth compares the ruin probability and EPD approach when discussing the RBC formulas of the US National Association of Insurance Commissioners introduced in the 1990s. The author reconsiders several of these findings and discusses them in the light of the new regulatory frameworks. More precisely, the author first performs sensitivity analyses for the risk measures using different parameter configurations. Such analyses are relevant since in practice parameter values may differ from estimates used in the model and have a significant impact on the values of the risk measures. Second, the author goes beyond a simple discussion of the outcomes for each risk measure, by deriving the firm conclusion that both the frequency and magnitude of shortfalls need to be controlled.

6) The Value of Enterprise Risk Management

Ansprechpartner: Dr. Alexander Bohnert

Literaturhinweis:

Hoyt, R. E., & Liebenberg, A. P. (2011). The Value of Enterprise Risk Management. *The Journal of Risk and Insurance*, 78(4), 795-822.

Abstract:

Enterprise risk management (ERM) has been the topic of increased media attention in recent years. The objective of this study is tomeasure the extent to which specific firms have implemented ERM programs and, then, to assess the value implications of these programs. We focus our attention in this study on U.S. insurers in order to control for differences that might arise fromregulatory andmarket differences across industries.We simultaneously model the determinants of ERM and the effect of ERM on firm value. We estimate the effect of ERM on Tobin's Q, a standard proxy for firm value.We find a positive relation between firm value and the use of ERM. The ERM premium of roughly 20 percent is statistically and economically significant.