Finanzökonometrisches Masterseminar WS 2014/2015

1. Derivatives, the Black Scholes Model, Hedging and Value-at-Risk
   - Hull (2008). *Options, Futures, and Other Derivatives*. 7th Edition, Chapters: 1, 2, 5, 7, 8, 12, 13
   - Ruppert (2011): Statistics and Data Analysis for Financial Engineering. Chapter 19.
   - Kuester, Mittnik & Paolella (2006): Value-at-Risk Prediction: A Comparison of Alternative Strategies. *Journal of Financial Econometrics* 4(1), pp. 53–89.
   - Wilmott (2006). *Paul Wilmott on Quantitative Finance*, 2nd Edition.
2. Stochastic Volatility & GARCH Models
   - Heston (1993). A Closed-Form Solution for Options with Stochastic Volatility with Applications to Bond and Currency Options. *The Review of Financial Studies*, Volume 6, number 2, pp. 327–343.
   - Mikhailov & Nögel (2003). Heston's Stochastic Volatility Model Implementation, Calibration and Some Extensions. *Wilmott Magazine*, Issue 6. Online available.
   - Ruppert (2011). *Statistics and Data Analysis for Financial Engineering*. Chapter 18.
   - Bollerslev (1987). Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics* 31, pp. 307–327.
3. Statistical Monitoring of Thousands of Data Streams
   - Zhu & Shasha (2002). StatStream: Statistical Monitoring of Thousands of Data Streams in Real Time. *In Proceedings of the 28th international conference on Very Large Data Bases (VLDB)*, Hong Kong, China, pp. 358–369.
   - Agrawa, Faloutsos & Swami (1993). Efficient Similarity Search In Sequence Databases. *In Proceedings of the 4th International Conference of Foundations of Data Organization and Algorithms (FODO)*, pp. 69–84.
4. Long Memory and Asset Returns
   - Butler, Gerken and Okada (2011), A Test for Long Memory in the Conditional Correlation of Bivariate Returns to Stock and Bond Market Index Futures, Working paper, available at `http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1905065`.
   - Granger and Hyung (2004), Occasional structural breaks and long memory with an application to the S&P 500 absolute stock returns, *Journal of Empirical Finance*, 11:399–421.
   - Grau-Carles (2000), Empirical evidence of long-range correlations in stock returns, *Physica A*, 287:396–404.
   - Greene and Fielitz (1977), Long-term dependence in common stock returns, *Journal of Financial Economics*, 4:339–349.
   - Lo (1991), Long-term memory in stock market prices, *Econometrica* 59(5): 1279-1313
   - Teverovsky, Taqqu, and Willinger (1999). A critical look at Los modified R/S statistic, *Journal of Statistical Planning and Inference*, 80:211–227.
5. Pairs Trading
   - Gatev, Goetzmann & Rouwenhorst (2006). Pairs Trading: Performance of a Relative Arbitrage Rule. *Review of Financial Studies* 19(3), pp. 797–827.
6. Credit Risk & Survival Analysis
   - Therneau & Grambsch (2000). *Modeling Survival Data: Extending the Cox Model*. Springer, New York.

- Lando (2004). *Credit Risk Modeling: Theory and Applications*. Princeton University Press. Chapters 4, 5.
- Duffie & Singleton (2003). *Credit Risk: Pricing, Measurement, and Management*. Chapter 3, 5.

General Requirements for 9 ECTS Credits:

(1) writing a term paper (at least 50,000 characters)

(2) presenting the term paper at the seminar (about 30 minutes)

(3) complete attendance

Modus Operandi:

(1) Working language is either German or English (depending on the supervisors' preference).

(2) The topics and additional organizational matters will be addressed in the preparatory meeting at 05:00 pm s.t. on October 09 in room 144 (Ludwigstr. 33).

(3) Every student must pick three topics, list them in a preferential ordering (highest to lowest), and send this list no later than noon of October 13 to one of the above organizers.

(4) The organizers will assign topics according to (highest) preferences (if possible) or by lottery. Students will be informed about the outcome of this assignment process on October 14.

(5) Every student is required to meet with the responsible advisor within the first two weeks after the assignment process is completed.

(6) This seminar will be held as a one-day workshop on January 16 in room 349, Theresienstr. 39.

(7) Term paper submission no later than noon of January 09. No exceptions granted!