At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for interested and qualified students to conduct a

Master's thesis

on the topic:

Procurement under Price Uncertainty

An increasing number of companies purchases commodities like metals, oil or electricity on spot markets and reduce purchasing based on long-term contracts. Spot market purchasing is on the one hand characterized by a high flexibility, but on the other hand by a high price risk due to annualized spot price volatilities of up to 40%.

Stochastic programming is a well-established method to consider uncertainty in decision-making. Nevertheless, most of the stochastic programming approaches deal with uncertainty in demand or supply. Only a minority of researchers address uncertainty in procurement prices. The main goal of this thesis is to review literature on stochastic programming models solving (procurement) problems under uncertain prices, to develop and implement an appropriate model and to provide a numerical study / case study for a specific commodity procurement situation.

Selected research tasks:

- To perform a literature review
- To develop a model and implement it in Xpress
- To provide a numerical study / case study

Details and further suggestions will be discussed during a kick-off meeting at the chair.

Requirements:

This master’s thesis is particularly suitable for candidates who are in the TUM-BWL Master program with a major in Supply Chain Management and have a strong interest in stochastic modeling and optimization. Programming experiences (i.e. Xpress) are required. The thesis must be prepared in English.

Begin: from now on
Advisor: Christian Mandl (christian.mandl@tum.de)

For further questions and selected literature on the topic, please see me in room 1563.
Please send your application together with your curriculum vitae and transcript of records to logtheses.wi@tum.de