At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for an interested and qualified student to conduct his/her Master Thesis on the topic:

**External Factors Affecting Demand Volatility of the Engine Portfolio at BMW**

Like many industries, automobile manufacturers face shorter product life-cycles and increased volatility and uncertainty on global markets. In order to plan for just-in-sequence production and to reduce risks, companies aim at deriving production volumes as early as possible. The thesis seeks to develop a volatility forecasting model to support capacity planning that shall be grounded on various external factors (that cause high volatility). The model shall be investigated and tested at volume-scenarios for the overall production of engines. What are influence factors for the volatility in the market? How to quantify the volatility? What are the strategic implications for the production facilities and inventory of BMW Group? The project partner provides necessary data and further support. For example, expected volumes for car sales - as stated in internal long-term plans – are available.

**Selected research tasks:**
- To perform a literature review on measuring volatility and its influence factors
- To evaluate existing methods and processes that BMW currently employs in this area
- To measure how external and internal factors influence volatility (and thus capacity) using expert interviews and advanced statistical methods (e.g., factor analysis, regression analysis)
- To build a model that combines the different factors and derives tangible scenarios that can be tested (e.g., with an ex-post approach) to identify cost savings
- To compare the new model with currently used methods and derive implications on the strategic alignment of the engine production

**Company description:**
BMW is one of the leading premium car manufacturers in the world. In 2012, the BMW Group sold over 1.8 million cars, generating revenues of over €76 billion. BMW employs more than 105,000 employees worldwide, with production facilities all over the world.

**Requirements:**
This Master thesis is particularly suitable for a candidate who has a strong interest in logistics and production strategy and ideally has good knowledge of VBA programming in MS Excel. Work experience in the automotive industry is of advantage. The thesis can be prepared in German.

**Begin:** September 2013

**Advisor:** Dr. Martin Stößlein (martin.stoesslein@tum.de)

For further questions and selected literature on the topic, please see me in room 1569. Please send your application together with your curriculum vitae and transcripts of records by email.