

Bachelor Thesis

Price Drivers of the EU ETS Emission Allowances – Focus on Correlation with Energy Prices



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Fields of study: Banking and Finance
Submission: 23.08.2012

Executive Summary

Subject

The European Union agreed under the Kyoto Protocol to reduce the level of greenhouse gas emission from human activities. With the launch of the Emission Trading Scheme in 2005 the EU has created a cap-and-trade market system for CO₂ certificates, the so-called EU Allowances, on a company level. The aim of the scheme is to accomplish the emission reduction targets in the most cost effective way giving companies with low abatement costs an incentive to abate their emission. Participating companies in the scheme have to comply in terms of CO₂ emission by handing in one EU Allowance for each emitted metric tonne of CO₂. Therefore it is crucial for them to have an instrument for the price determination of the EU Allowances.

Phase I (2005-2007) of the scheme was considered as a pilot phase for Phase II (2008-2012) and marked by high volatility and over-allocation. Main price drivers were identified and analysed in the literature. Giving the high presence of the electricity generation sector in the EU Emission Trading Scheme, energy and electricity prices are assumed to have a big influence on the price evolution of the EU Allowance price. Hence, it is important to examine the interaction of energy and EU Allowance prices during Phase II and determine important price drivers of EU Allowance prices.

Structure

In the first part of the thesis, the EU Emission Trading Scheme and its mechanism is introduced and explained together with an analysis of the price evolution during the past trading period. In a following step, the literature on emission permit markets is reviewed. In a third step, the short term abatement option for companies in the electricity generation sector is discussed. In the last part of the thesis, important price drivers of Phase II are identified and their influence on EU Allowance prices is estimated.

Procedure

The switching and the abatement costs for coal-fired power plants are analytically derived and calculated in Excel.

The influence during Phase II of theoretically derived price drivers is estimated. The calculations are based on two main OLS multiple regression models for the time period between 25.03.2008–11.06.2012.

Results

The calculations reveal that EU Allowance future prices are influenced by the price of electricity year ahead futures, coal month ahead futures and natural gas. Electricity and natural gas prices have a positive influence, whereas an increase of coal prices causes a decrease of EU Allowance prices. Various weather factors affect the energy demand and the electricity prices. Therefore, they are as well categorised as an important price driver of EU Allowance prices.