

# Chapter 12

## Price Relationships in the EU Emissions Trading System

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### ABSTRACT

*The European Union Emissions Trading Scheme (EU ETS) constrains industrial polluters to buy/sell CO<sub>2</sub> allowances depending on a regional depolluting objective of -8% of CO<sub>2</sub> emissions by 2012 compared to 1990 levels. Companies may also buy carbon offsets from developing countries, funding emissions cuts there instead, under a Kyoto Protocol Clean Development Mechanism (CDM). This chapter critically analyzes the price relationships in the EU emissions trading system. The United Nations Framework Convention on Climate Change (UNFCCC) delivers credits that may be used by European companies for their compliance needs. Certified Emissions Reductions (CERs) from CDM projects are credits flowing into the global compliance market generated through emission reductions. EUAs (European Union Allowances) are the tradable unit under the EU ETS. Besides, the EU Linking Directive allows the import for compliance into the EU ETS up to 13.4% of CERs on average. This chapter details the idiosyncratic risks affecting each emissions market, be it in terms of regulatory uncertainty, economic activity, industrial structure, or the impact of other energy markets. Besides, based on a careful analysis of the EUA and CER price paths, this chapter assesses common risk factors by focusing more particularly on the role played by the CER import limit within the ETS.*

### INTRODUCTION

The Emissions Trading Scheme (ETS) is the EU's flagship climate policy, forcing industrial polluters to buy/sell CO<sub>2</sub> allowances above a pre-

specified emissions cap. Companies may cut the costs imposed on the industry by buying relatively cheaper carbon offsets from developing countries, funding emissions cuts there instead, under the Kyoto Protocol's Clean Development Mechanism (CDM). As the latest Intergovernmental Panel on Climate Change (IPCC, 2007) report pointed out

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the huge potential for the growth of CO<sub>2</sub> emissions and associated pollutants in non-Annex B countries of the Kyoto Protocol, this chapter critically analyses to what extent the link between the EU ETS and the CDM will contribute to cut CO<sub>2</sub> emissions by 2020. As reviewed by Lecocq and Ambrosi (2007), the CDM is controversial. By contrast, this chapter does not consider some viewpoints that oppose or demand more reforms for the CDM. Instead, we adopt a financial market approach and detail the characteristic of emission assets stemming from the CDM.

According to the article 12 of the Kyoto Protocol, projects under the Clean Development Mechanism consist in achieving greenhouse gases emissions reduction in non-Annex B countries. After validation, the United Nations Framework Convention on Climate Change (UNFCCC) delivers credits that may be used by Annex B countries for use towards their compliance position. Certified Emissions Reductions (CERs) from CDM projects are credits flowing into the global compliance market generated through emission reductions. EUAs (EU Allowances) are the tradable units under the EU ETS. Albeit being determined on distinct emissions markets, CERs and EUAs may be exchanged based on their representative trading unit. One CER is equal to one ton of CO<sub>2</sub>-equivalent emissions reduction, while one EUA is equal to one ton of CO<sub>2</sub> emitted in the atmosphere.

Besides, the EU *Linking Directive*<sup>2</sup> allows the import of CERs into the EU ETS up to 13.4% of their compliance needs on average. The import limit is equal to 1.7 billion tonnes of offsets being allowed into the EU ETS from 2008-2020, that is, an absolute maximum of 50% of the depolluting effort fixed by the scheme will be achievable through the CDM. Overall, our results shed light on the importance of the link between the EU ETS and the CDM to foster investments in infrastructure technology in developing countries, thereby facilitating the transition to a low-carbon future.

The remainder of the chapter is organized as follows. First, we provide background information on the price development of EUAs and CERs. Then, we detail the idiosyncratic risks affecting each emissions market, be it in terms of regulatory uncertainty or economic factors. Based on a careful analysis of the EUA and CER price paths, we assess common risk factors by focusing more particularly on the role played by the CER import limit within the EU ETS. A brief summary concludes the chapter.

## **BACKGROUND**

In this section, we comment first on the price developments of EUAs and CERs.

Primary CERs (pCERs, which are generated from the project in the developing country) have a delivery risk, while secondary CERs (sCERs, which have been sold on the secondary credits market) are already generated and issued by the CDM Executive Board, and are hence risk-free. The risks attached to primary CERs are linked to the United Nations' "International Transaction Log" (ITL) connection, the import limit, and the performance for operating projects, to which we may add a high volume of registered projects, as well as registration and methodological risks for proposed projects. The risks attached to secondary CERs are the ITL connection, the import limit, and eligibility criteria to be met for transfer of a CER from one EU registry to another. In the exchange contract (sCER), the seller agrees to pay EUAs or cash in case of non-delivery.

The CER and EUA price series in Figure 1 shows that we are in presence of correlated emissions markets. The CER-EUA spread presented at the bottom of Figure 1 represents arbitrage opportunities for traders who are able to identify pricing anomalies between the quoted spread price and the two emissions markets.<sup>3</sup> The EUA spread over the secondary CER widened to nearly €10 in Figure 1, and was even higher for most primary

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