

## The Role of the Financial Sector in EU Emissions Trading

By Regina Betz, Johanna Cludius, and Anne Schopp\*

Emissions trading schemes theoretically lead to an efficient achievement of a given reduction target since companies with the lowest marginal cost of abatement reduce their emissions and may sell surplus permits, while companies that face high abatement costs purchase permits to cover their greenhouse gas emissions (Baumol and Oates 1975). These trading activities should achieve an efficient final allocation of permits between regulated entities where the marginal abatement costs are equalised. Textbook theory of emissions trading usually focusses on trading of regulated entities. But in reality non-regulated entities are also actively involved in the market for emission allowances. In the context of the EU Emissions Trading Scheme (EU ETS), the financial sector has been particularly active on the market for EUAs (Betz and Schmidt 2015). The total trading volume during the first trading period at 1.8 million EUAs was about five times higher than the minimum trading volume necessary for all installations to become compliant (350 million EUA, i.e. the sum across all short positions over the whole trading period). That shows that trading was not done for compliance purposes only. In fact, 45 % of the total volumes traded during the first trading period, involved one or two accounts of companies without a liability on the market (banks, brokers, traders, exchanges and investment trusts and funds). More than half of this volume goes through accounts of banks (24 % of the total), via exchanges (8 %), through a dedicated future clearing account (London Clearing House – LCH, 6 %) and the remainder via brokers, (own-account) traders and trusts and funds (7 %). Thus, our analysis of EUTL data highlights the important role of financial actors in the first trading period. We are therefore particularly interesting in the following two questions (Cludius and Betz, forthcoming): First, how has the financial sector shaped or supported the behaviour of regulated companies in the first trading phase? Second, what will be the potential implications of the new regulations for the financial sector on the roles banks have played in the past and how will this impact regulated entities?

Figure 1 shows the involvement of the different types of financial actors over time. Prominent spikes can be observed in March-April and December each year, corresponding to activity related to the allocation and surrendering of allowances and the delivery of forward and future contracts respectively.

### Plethora of Roles of Financial Sector in EU Emissions Trading

In order to investigate the role of the financial sector in EU Emissions Trading, we employ two different methods. On the one hand we analyse data from the EU Transaction Log (EUTL), giving insights into market participants and their trading behaviour during the first trading period of the EU ETS (January 2005 – April 2008, when permits for 2007 had to be submitted). In order to extend the insights gained from the data analysis, we conduct a number of semi-structured interviews with key players active in EU Emissions Trading (e.g., banks, electricity companies).

Banks and other financial actors can and have played a variety of roles in EU Emissions Trading. We differentiate six different roles that are often played by different trading accounts of the same bank. First, banks have acted as intermediaries to facilitate trading and taken on a role similar to brokers. Second, they have provided liquidity to the market by acting as market makers that provide bids and asks within a certain corridor on exchanges and get rewarded by special access conditions to these exchanges. Third, they have lowered transaction costs by aggregating trading activity of smaller entities (Heindl 2012a, 2012b). In particular, banks and other financial actors have bought allowances from small firms that were overallocated and sold them as forward contracts to – for example – electricity providers. Fourth, and connected to the previous point, banks have developed and offered derivative products to pursue cost of carry arbitrage, as they have access to cheap capital. These derivative products, e.g. EUA forward sales, helped manage price risk for regulated entities. Fifth, banks may trade on their own account in order to gener-

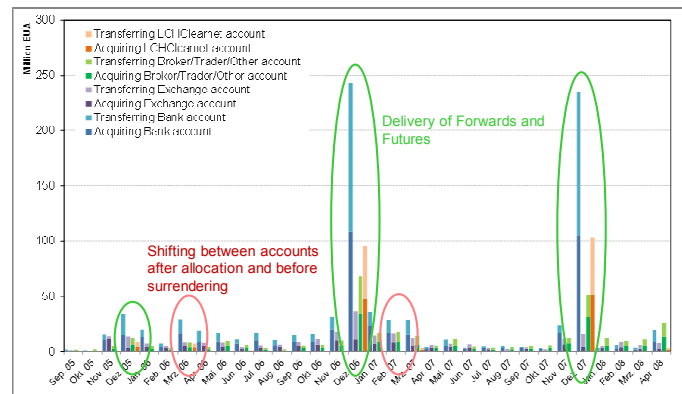


Figure 1 Market transfers involving accounts belonging to the financial sector

Source: EUTL, own estimation and illustration

Note: Transactions shown starting in September 2005 for ease of illustration and as volumes were very small beforehand; all transactions shown only involve Period I EUAs.

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Name of company	Volume purchase (M EUA)	Volume sales (M EUA)	Number of accounts (PHA/OHA)	Accounts opened in registries
BARCLAYS PLC	77	83	9 / 3	GB, NL, DE, FR, ES, DK, IT
UBS AG	74	71	4 / 0	FR, GB
AGEAS SA/NV	44	44	9 / 3	NL, GB, FR
Calyon Financial	40	40	2 / 0	FR, GB
BNP PARIBAS	24	22	3 / 1	GB, FR
MORGAN STANLEY	23	20	11 / 1	GB, DK, NL, DE, FR
SOCIETE GENERALE	19	18	4 / 0	GB, CZ, FR
COMMERZBANK AG	17	17	3 / 0	FR, DE, GB
GOLDMAN SACHS GROUP, INC	16	16	8 / 0	ES, GB, NL, DK
ROYAL BANK OF SCOTLAND	11	15	3 / 1	GB, NL

Table 1 Most active banks in Period 1 EU Emissions Trading

Source: EUTL, Jaraite et al. (2013), own estimation

Notes: EUI ownership links dataset (Jaraite et al. 2013) used to match accounts to parent companies, enhanced with own analysis

The fact that Barclays Bank and the Royal Bank of Scotland seemingly sold more EUAs than they bought is due to transactions missing from the dataset whose 'status' changed from 'not completed' to 'completed', and which were therefore not recorded on the EUTL (personal communication with the Commission).

the same registry if trading was to take place with these exchanges. The majority of banks do not hold any OHA accounts. One prominent exception is Unicredit that holds OHA accounts of sugar making factories.

#### ...they may no longer be able to play those roles in the future

However, following new requirements from the Markets in Financial Instruments Directive (MiFID), many banks have closed down their commodity trading desks (including for carbon) as of the start of the third trading period and it is unclear how this will impact their future role in the market. Some banks had already left the market earlier on which may have been due to the fact that it is likely that a number of banks made losses in the market for (e.g., due to a wrong strategy/expectations or less information compared to regulated participants). Arguably, if banks leave the market, this may decrease liquidity, as their trading activities - encompassing the brokering of trades to reduce transaction costs or being a market maker and thus increasing market liquidity directly - would cease. Given the frequent and high auction volumes under the EU ETS since the start of the third trading period in 2013, the liquidity of the market seems to be less of a worry at present. However, banks also reduce the cost of carry and help to hedge price risks by serving as hedging counterparties mainly for the electricity industry. It is unclear at this stage if banks will continue to play this role or if other service and trading companies will take over their role as hedging counterparties since they do not fall under the new EU regulations regarding financial markets. Finally, the role of actively aggregating EUAs from small companies and selling them on exchanges / as derivatives, which helped to reduce the number of expired EUAs, may be given up by banks and if not taken over by others may reduce the efficiency of the EU ETS.

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ate profits (speculation). Sixth, they may borrow permits from companies and return them with a certain interest rate (not buying them, but rather using them as speculative capital) or may also directly manage the permits for clients using their own accounts. Finally, banks have provided information to the market (market analysis) through publications such as newsletters (e.g., Deutsche Bank, Barclays).

Taking a look at the most active banks participating during the first period of the EU ETS (Table 1) reads like a who-is-who of the financial world. Banks often opened accounts in the British or French registries, which has to do with the fact that important exchanges or clearing houses were situated in those countries. Often it was a requirement to hold an account in