

# Equilibrium Pricing of Contingent Claims in Tradable Permit Markets\*

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**Abstract.** In this paper, we construct a permit market model to derive a pricing formula of contingent claims traded in the market in a general equilibrium framework. It is shown that prices of contingent claims exhibit significantly different properties from those in the ordinary financial markets. In particular, if the social cost function kinks at some level of abatement, the forward price as well as the spot price can be subject to the so-called price spike. However, this price-spike phenomenon can be weakened if the system of banking and borrowing is properly introduced.

**JEL classification:** Q56, G13, G38.

**Keywords:** Tradable permits, emission trading, state price density.