

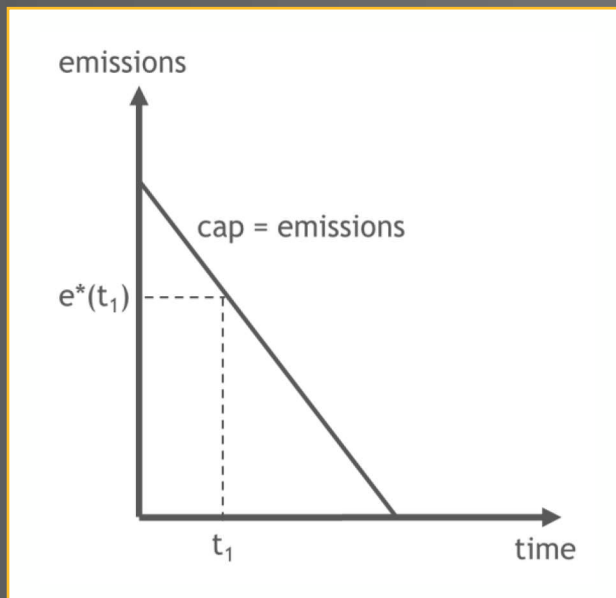
# Impact of the MSR cancellation mechanism

Theresa Wildgrube | Strommarkttreffen | 16 November 2018

# ewi Economic theory behind the EU ETS (1/2)

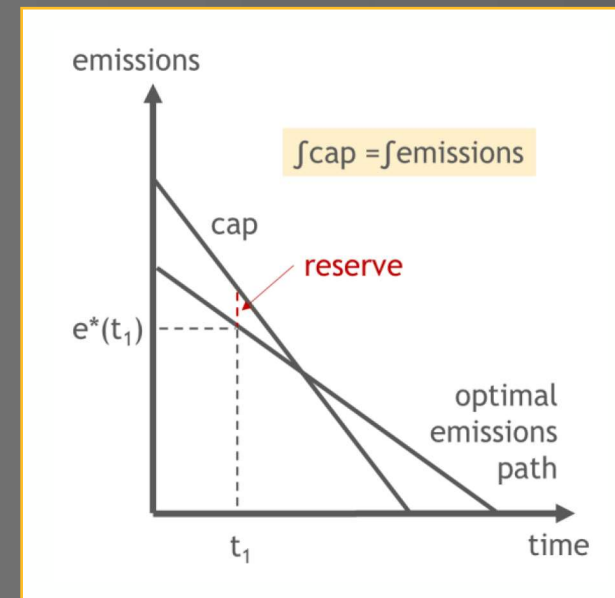
## Annual optimization

- Emitters react to a yearly cap/price
- Emissions < cap  $\rightarrow$  surplus, i.e. emitters do not abate



## Intertemporal optimization

- Emitters form an expectation on the development of prices and minimize their costs intertemporally
- A high private reserve is not necessarily just a surplus

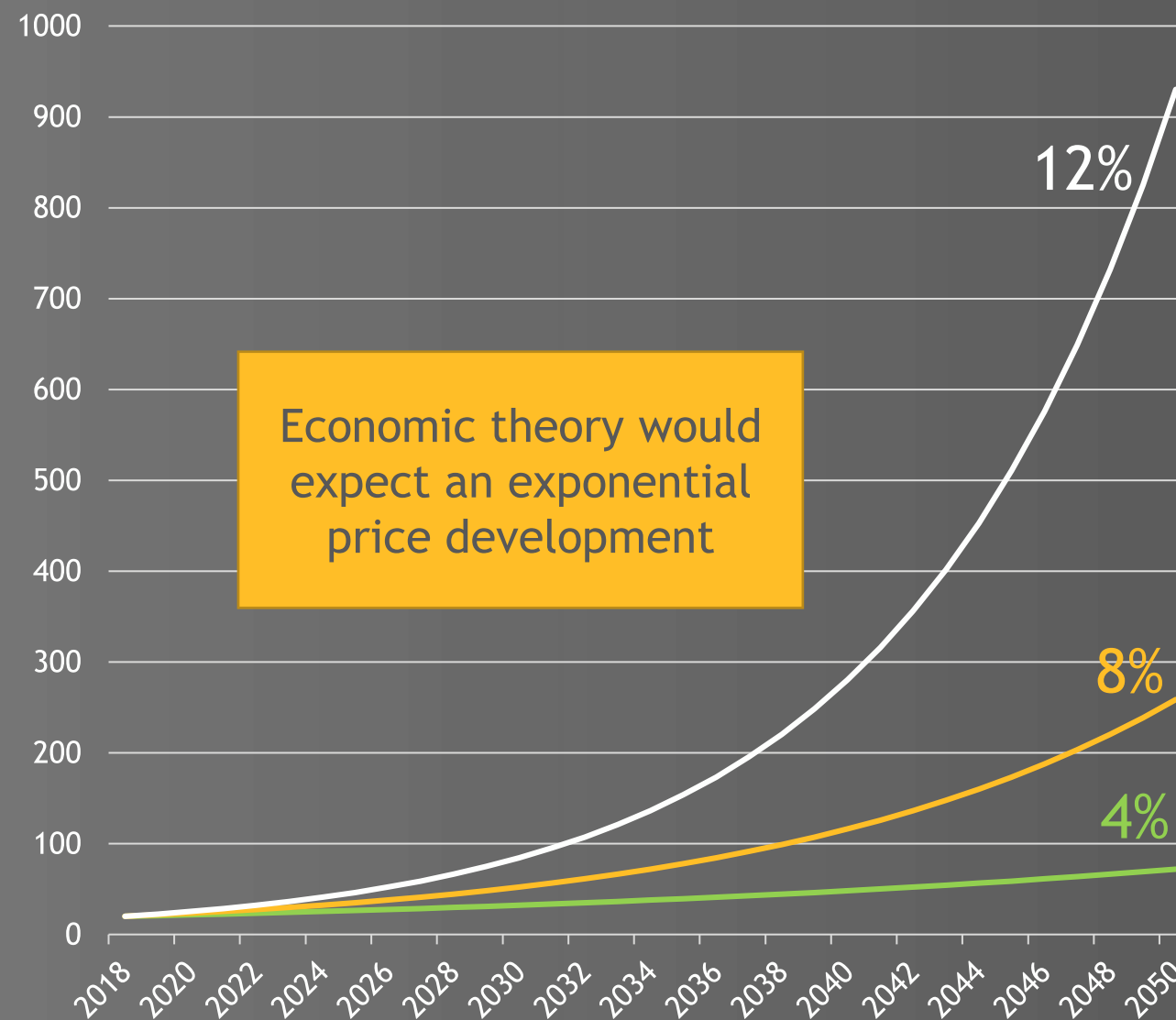


- Reserve can be interpreted as companies' savings for later (anticipating price increases)

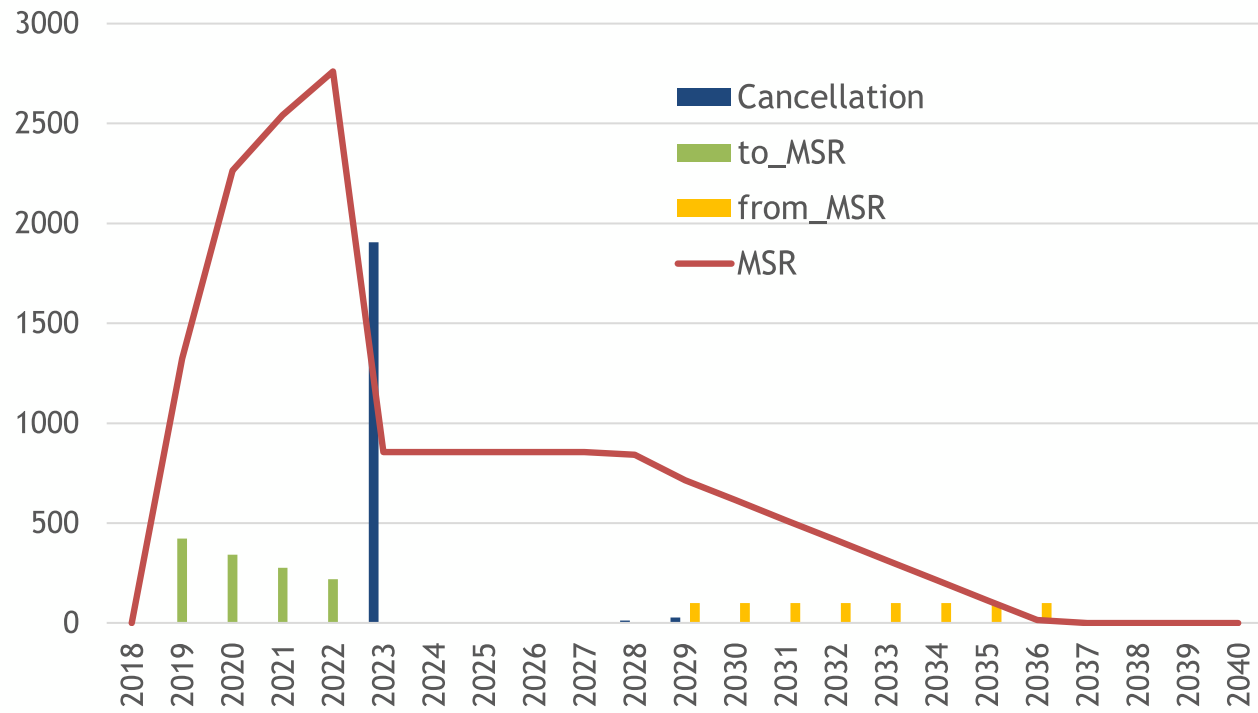
How do emitters choose the optimal emissions path?

**Hotelling's rule:** The price of exhaustible resources (available allowances) increases with the interest rate

- Investors are indifferent between investing their capital at the interest rate or exploiting the resource
- As long as private reserve exists, firms can choose their optimal path of emissions and abatement; Hotelling's rule applies



MSR movements [million EUA]

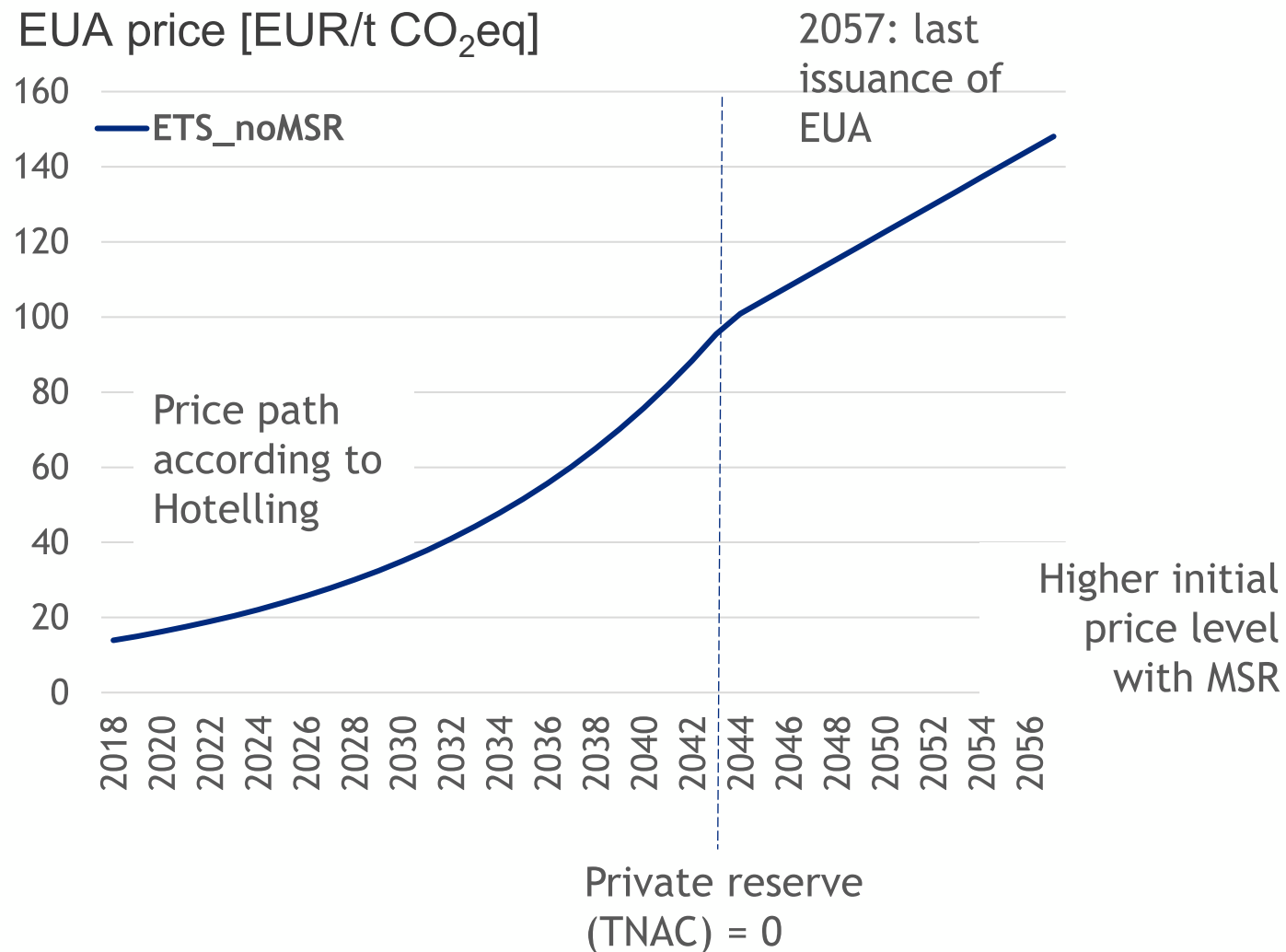


Source: Own model results

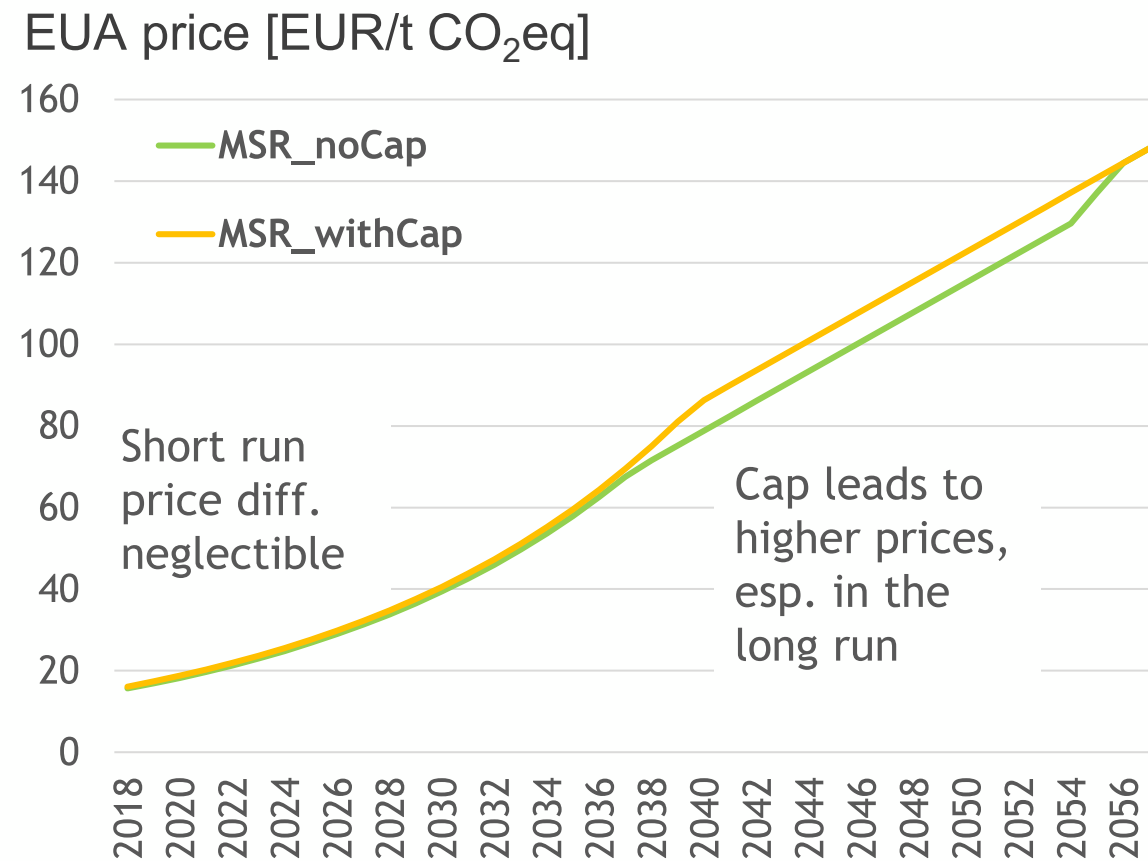
## MSR cap can have a significant impact

- MSR builds up to 2760 million allowances
- 1945 million allowances cancelled in total (5% of all allowances issued from now on)
- From 2029 onwards, allowances are returned to the market
- Under a cap, the MSR is depleted in 2037
- Without cap, MSR rises to 2750 in 2022 and depletes steadily from 2028 to 2054

## EU ETS without MSR



## EU ETS with MSR



### Takeaways

- Significant cancellation expected; the MSR cap has a potentially high impact in terms of total emissions
- The theoretical model does not explain the sharp price increase in the last year; however, impact on prices is expected in the long run

### Further discussion

- Do emitters react „rationally“? Do they act shortsightedly?
- With or without MSR: How will politicians, emitters and the public react to high CO<sub>2</sub> prices?
- Cancellation only after review: Is it a credible threat? Commitment problem



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