

CRR Prices and Pay Outs: Are CRR Auctions Valuing CRRs as Hedges or as Risky Financial instruments?

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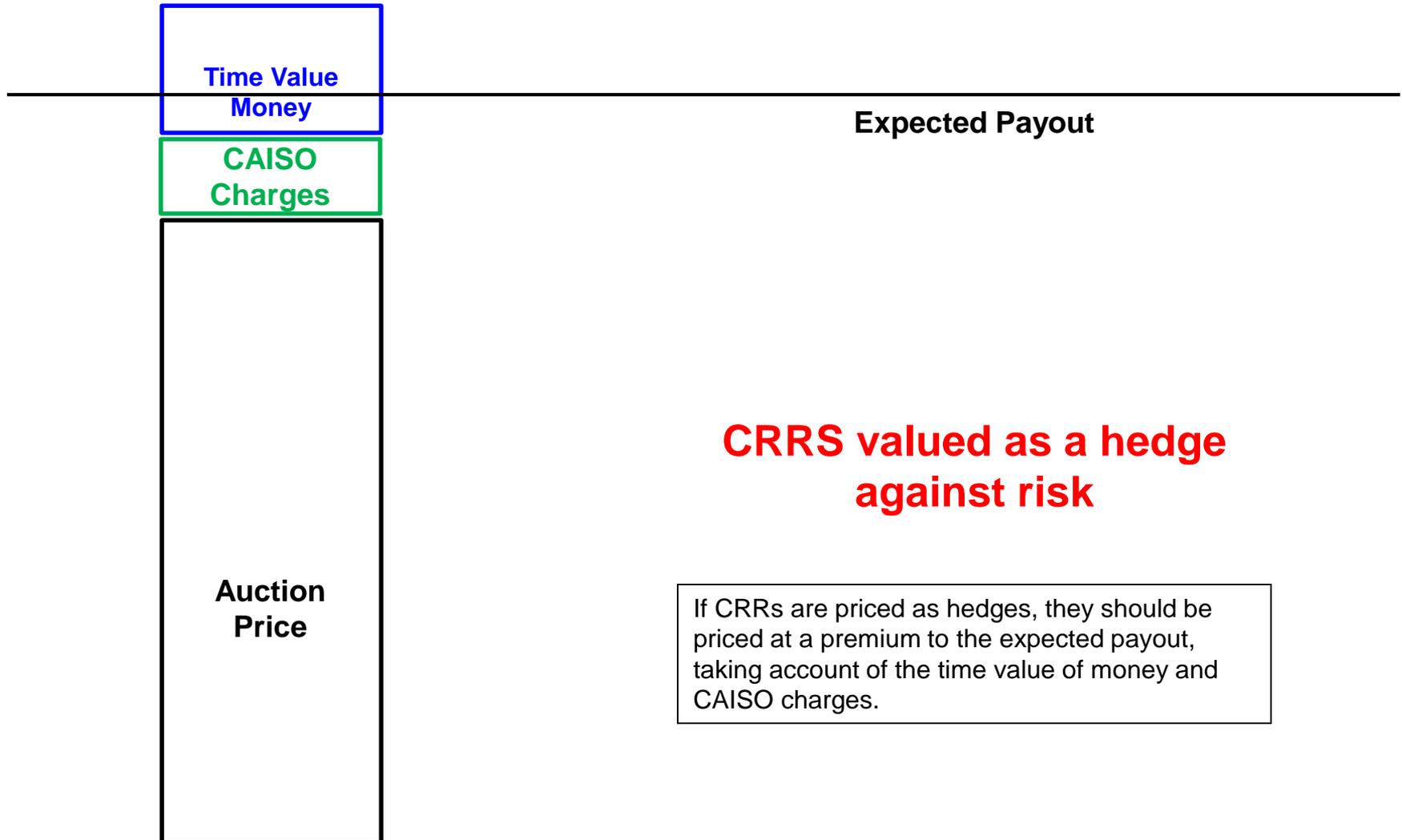


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CRRS VALUED AS HEDGES

If positively priced financial transmission rights are held at the margin by load serving entities, generators or traders that use the financial transmission rights to hedge congestion charges they could incur in covering forward financial contracts, or in covering physical or financial load serving obligations, then we expect financial transmission rights auction prices to exceed by at least a little the expected payment to the financial transmission right holder, taking account of time value of money costs and other costs imposed on financial transmission right holders.

CRRS VALUED AS HEDGES



CRRS VALUED AS HEDGES

CRRs valued in auctions as hedges, at a premium to the expected payout, is not an abstract hypothetical:

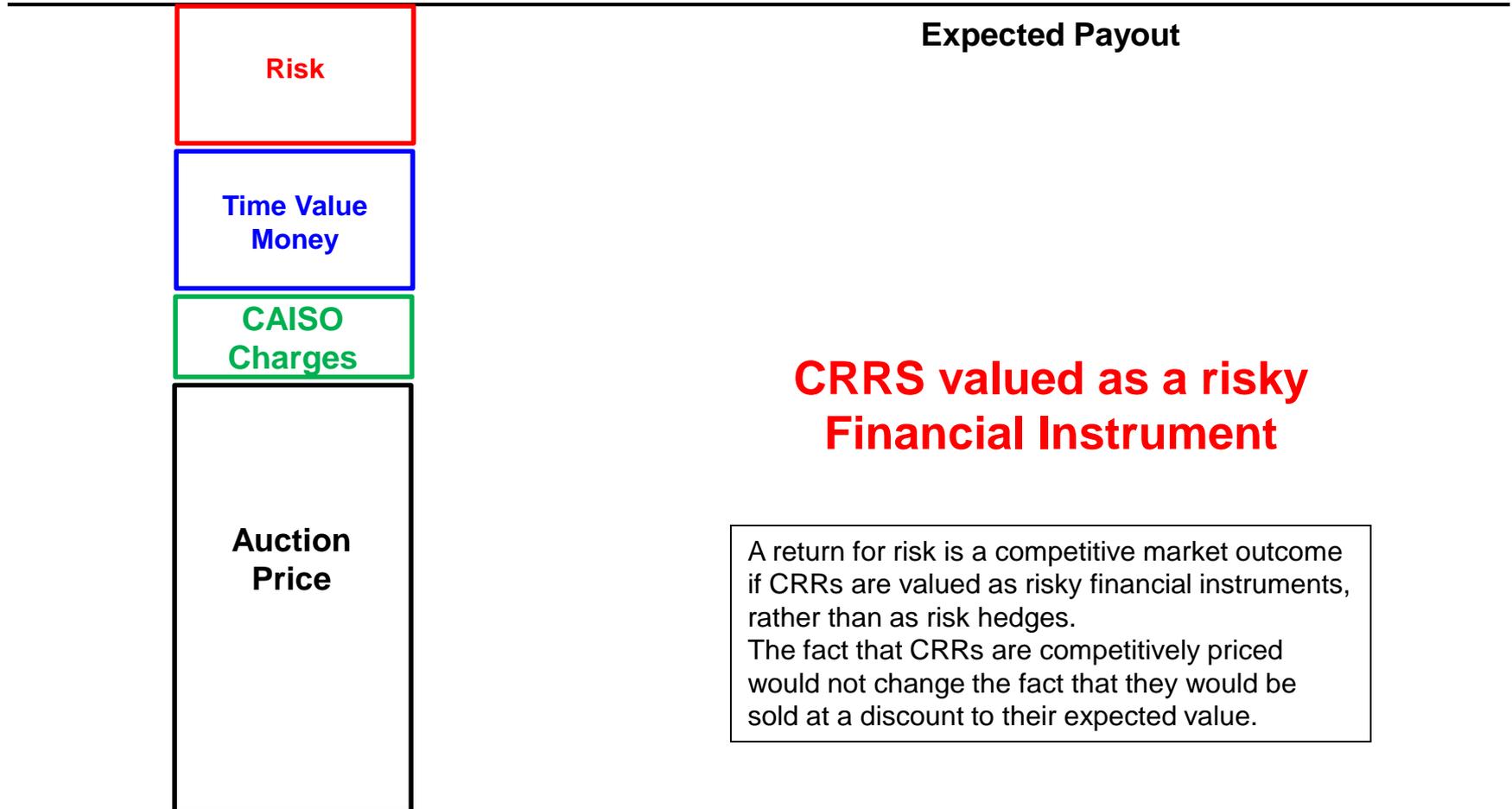
- The monthly auction price of a New York ISO Zone G to Zone J TCC has averaged 111.7% of the day-ahead market payout over the period June 2000 through December 2016.
- The monthly auction price of a PJM western hub to PECO FTR has averaged 137% of the day-ahead market target payout over the period May 1999 through December 2016.
- The monthly auction price of a PJM western hub to PECO FTR has averaged 143% of the day-ahead market prorated payout over the period January 2005 through December 2016.

These valuations are consistent with these particular TCCs and FTRs being valued as hedges, priced at a premium to the expected payout, even without accounting for charges imposed on FTR and TCC holders.

CRRS VALUED AS RISKY FINANCIAL ASSETS

If positively priced financial transmission rights are held at the margin by financial market participants that do not use them to hedge other positions, the financial transmission rights will be valued to provide a return to those holding them, i.e. as risky financial instruments, and the auction price will reflect a discount to the expected day-ahead market pay out.

CRRS VALUED AS RISKY FINANCIAL ASSETS



CRR VALUATION IN THE CAISO

It is possible to use historical data to assess the extent to which categories of CRRs are being valued as risk hedges or as risky financial instruments.

One can compare the auction price to the day-ahead market payout for various categories of CRRs such as low valued CRRs or generator to generator CRRs.

Because all CRRs are valued in the monthly auctions, one could reduce the impact of the time value of money on the valuation of seasonal CRRs by valuing them at monthly auction prices.

The CAISO could also compute the as bid value of various categories of CRRs to better assess their value to the market and to market participants, rather than just their market value.

CRR VALUATION IN THE CAISO

These valuation calculations could be applied to CRRs distributed through the allocation process.

Because all CRRs are valued in the monthly auctions, the valuation of allocated CRRs could be compared to their historical payout to assess whether the auction is appropriately valuing CRRs that are presumably purchased as hedges.

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