



California ISO

California Independent System Operator Corporation

California ISO

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**Report on results of 2019 congestion  
revenue rights auction  
Updated**

**June 24, 2020**

Prepared by Department of Market Monitoring



# 1 Summary

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From 2009 to 2018, the California ISO’s auction for congestion revenue rights (CRRs) resulted in a net loss of over \$800 million for transmission ratepayers.<sup>1</sup> Over this ten year period, only 50 cents in auction revenue was collected per dollar paid to auctioned CRRs. In 2017 and 2018, losses from sales of CRRs totaled \$100 million and \$131 million, respectively.

In response to these systematic losses from sales of CRRs, the ISO instituted significant changes to the auction starting in the 2019 settlement year. These changes include the following:

- Track 0 – Increasing the number of constraints enforced by default in the CRR models, identifying potential enforcement of “nomogram” constraints in the day-ahead market to include in the CRR models, and other CRR process improvements.<sup>2</sup>
- Track 1A – Limiting allowable CRR source and sink pairs to “delivery path” combinations.<sup>3</sup>
- Track 1B – Limiting CRR payments to not exceed congestion rents actually collected from the underlying transmission constraints.<sup>4</sup>

In 2019, ratepayer losses from CRR auctions totaled over \$22 million. About \$16 million of the \$22 million in ratepayer losses occurred in Q4. Transmission ratepayers received about 80 cents in auction revenue per dollar paid out to CRRs purchased in the auction in 2019. In an earlier version of this report a coding error caused the 2019 ratepayer losses to be overestimated at \$34 million.<sup>5</sup>

Financial entities received profits of \$23 million and paid 63 cents in auction revenues per dollar of CRR payouts received. Marketers had profits of about \$3 million and paid 92 cents per dollar of CRR revenue received. Physical generators incurred losses of about \$3 million and paid \$1.20 into the auction per dollar of CRR payments received.

DMM estimates that Track 1B CRR deficit offsets, which limit CRR payments from exceeding the congestion rent collected on the underlying constraints, reduced payments to CRRs auctioned to non-

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<sup>1</sup> Department of Market Monitoring, *Problems in the performance and design of the congestion revenue right auction*, November 27, 2017 p.11: [http://www.caiso.com/Documents/DMMWhitePaper-Problems\\_Performance\\_Design\\_CongestionRevenueRightAuction-Nov27\\_2017.pdf](http://www.caiso.com/Documents/DMMWhitePaper-Problems_Performance_Design_CongestionRevenueRightAuction-Nov27_2017.pdf)

Department of Market Monitoring, *2018 Annual Report on Market Issues and Performance* p.202, May 2019: <http://www.caiso.com/Documents/2018AnnualReportonMarketIssuesandPerformance.pdf>

<sup>2</sup> California ISO, *Congestion Revenue Rights Auction Efficiency Track 1B Straw Proposal*, April 19, 2018: <http://www.caiso.com/InitiativeDocuments/StrawProposal-CongestionRevenueRightsAuctionEfficiencyTrack1B.pdf>

<sup>3</sup> California ISO, *Congestion Revenue Rights Auction Efficiency Track 1A Draft Final Proposal Addendum*, March 8, 2018: <http://www.caiso.com/InitiativeDocuments/DraftFinalProposalAddendum-CongestionRevenueRightsAuctionEfficiency-Track1.pdf>

<sup>4</sup> California ISO, *Congestion Revenue Rights Auction Efficiency Track 1B Draft Final Proposal Second Addendum*, June 11, 2018: <http://www.caiso.com/InitiativeDocuments/DraftFinalProposalSecondAddendum-CongestionRevenueRightsAuctionEfficiencyTrack1B.pdf>

<sup>5</sup> This error involved settlement changes implemented in 2019 and did not affect results for prior years.

*Report on results of 2019 congestion revenue rights auction*, Department of Market Monitoring, January 27, 2020. <http://www.caiso.com/Documents/ReportonResultsof2019CongestionRevenueRightsAuction-Jan272020.pdf>

load serving entities by about \$44 million for the year. Thus, Track 1B changes had a significant impact on reducing losses from CRRs sold in 2019.

Track 1A changes limiting the types of CRRs that could be purchased in the auction appear to have also helped to reduce losses from CRRs sold in 2019. However, the impact of these Track 1A changes cannot be quantified.

A third factor contributing to lower losses from sales of CRRs in 2019 was relatively lower congestion than in prior years. Total day-ahead congestion rent for 2019 was about \$355 million -- down from about \$628 million in 2018. Ratepayer auction losses in 2019 totaled almost 6% of total day-ahead congestion rents in 2019, compared to about 20% of congestion rents in 2018. This reduction in CRR losses as a percentage of total day-ahead congestion rents likely reflects the impact of CRR changes made by the ISO beginning in 2019.

Section 3 of this report includes a variety of metrics which highlight trends and correlations between total congestion rents and CRR auction results. DMM will provide additional analysis and discussion of 2019 auction results in its quarterly report for Q4 2019 and annual report for 2019.

DMM continues to recommend that the ISO discontinue auctioning CRRs on behalf of ratepayers. If the ISO believes it is highly beneficial for the ISO to actively facilitate hedging of congestion costs by suppliers, DMM recommends that the ISO modify the CRR auction into a market for financial hedges based on clearing of bids from willing buyers and sellers.

## 2 Chart descriptions

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### **Ratepayer auction revenues compared to payments to auctioned CRRs**

Figure 1 and Figure 2 show the auction revenues received by ratepayers (blue bars), ratepayer payments to auctioned CRRs (green bars), and total ratepayer auction losses (yellow line).

### **Auction revenues and payments by entity type**

Figure 3 through Figure 10 show the auction revenues paid (blue bars), payments to auctioned CRRs received (green bars), and profits (yellow line) for auction participants by type. The load serving entity charts are meant to show how much of the ratepayer auction losses are caused by load serving entities selling CRRs into the auction (as opposed to the ISO making CRRs available through the auction transmission models). With the implementation of the Track 1B policy, the value of CRRs sold by load serving entities cannot be known. This is because one cannot know precisely who the counterparty is that bought a particular CRR from an LSE. As a result, the additional 1B offsets that the counterparty must pay because the counterparty bought the CRR from the LSE cannot be calculated. The final day-ahead market payout on the CRR is the congestion payout minus the 1B offset. Therefore, if the 1B offset owed on the CRR cannot be known, then the value of the CRR cannot be accurately calculated. The load serving entity charts do not include any estimate of the 1B offsets from the CRRs that were allocated to LSEs and subsequently sold by the LSEs. As a result, losses (gains) caused by the load serving entity sales will be over (under) estimated.

### **Ratepayer auction losses and day-ahead congestion rent**

Figure 11 and Figure 12 show the ratepayer CRR auction loss (blue bars), Track 1B revenue deficit offsets (light blue bars), and day-ahead congestion rent (yellow line). These charts provide a comparison of losses from sales of CRRs and the reduction in losses due to Track 1B changes compared to day-ahead congestion rent and each other.

### **Day-ahead congest rent, auction revenues, payments, and ratepayer losses**

Figure 13 and Figure 14 show day-ahead congestion rent (grey line) compared with payments to auctioned CRRs (yellow line), auction revenues (blue line), and ratepayer auction losses (red line).

Figure 15 and Figure 16 show payments to auctioned CRRs (yellow line), auction revenues (blue line), and ratepayer auction losses (red line) all divided by day-ahead congestion rent.

These charts provide a comparison of auction revenues, auctioned CRR payments, and ratepayer losses relative to day-ahead congestion rent.

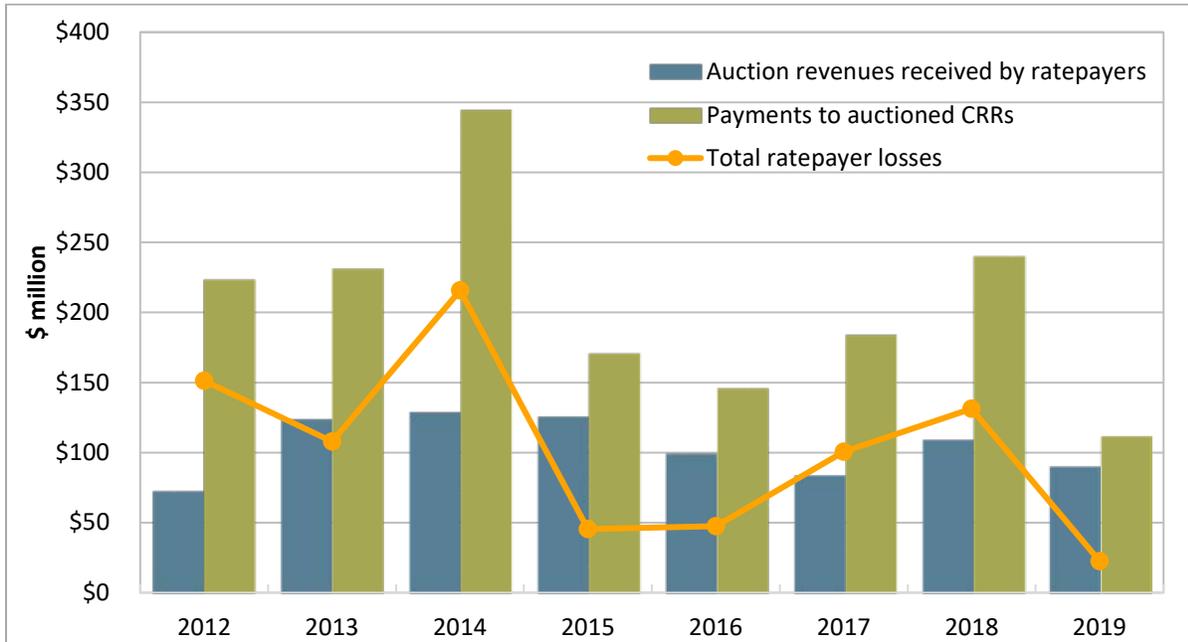
### **Auction revenues paid divided by payments to CRRs**

Figure 17 and Figure 18 show auction revenues paid by auction participants as a percentage of total CRR payments received from entities purchasing CRRs. These charts show how much it cost in the auction, on average, to purchase one dollar of CRR payments, broken out by participant type.

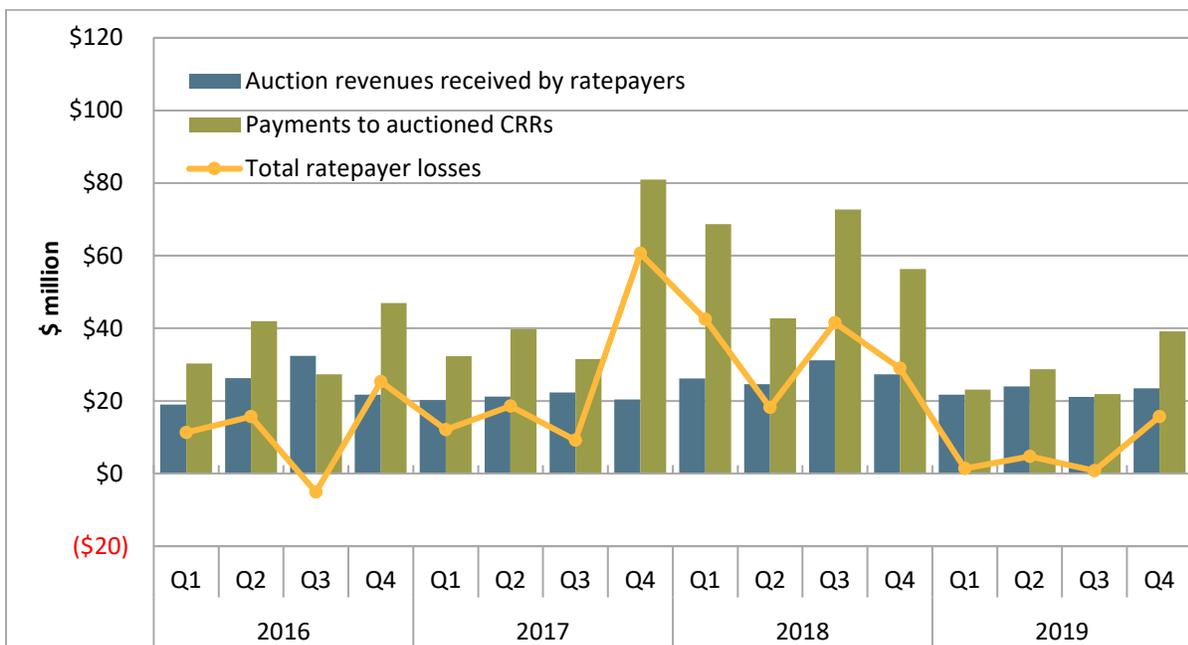


### 3 Charts

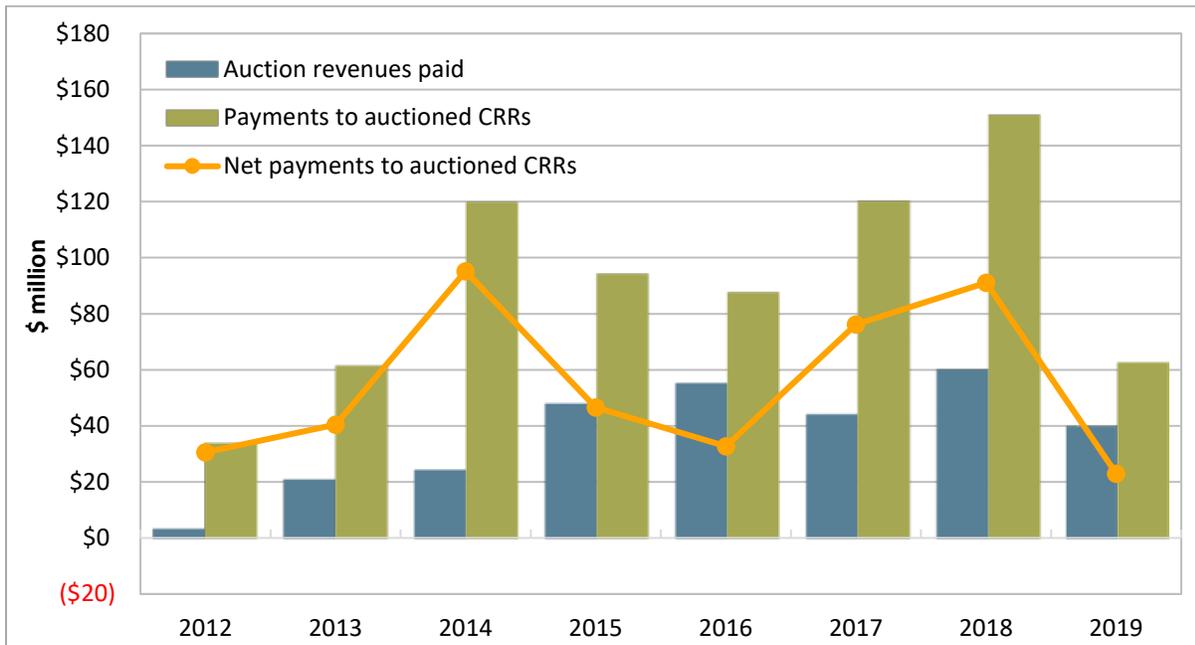
**Figure 1. Auction revenues compared to payments to auctioned CRRs (annual)**



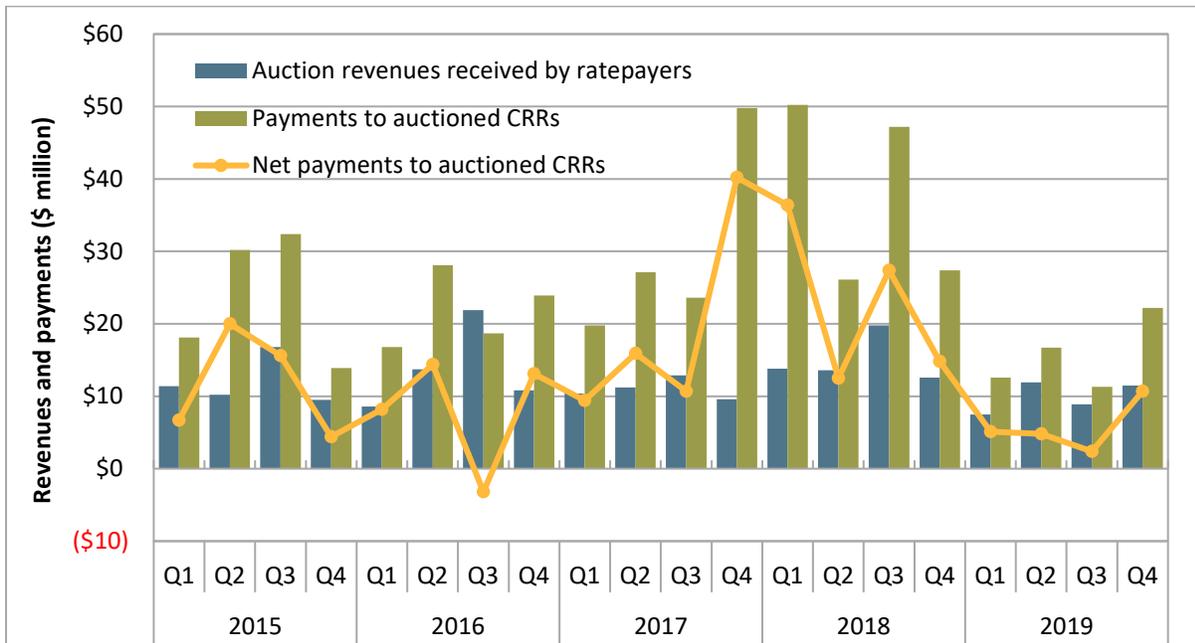
**Figure 2. Auction revenues compared to payments to auctioned CRRs (quarterly)**



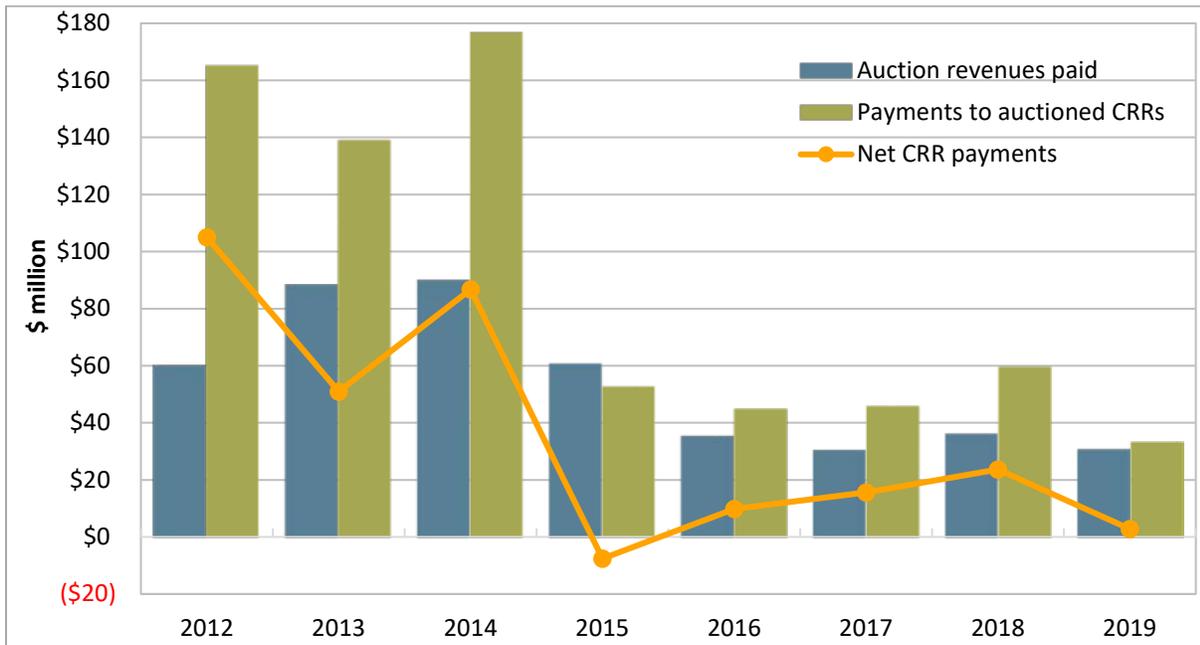
**Figure 3. Auction revenues and payments - financial entities (annual)**



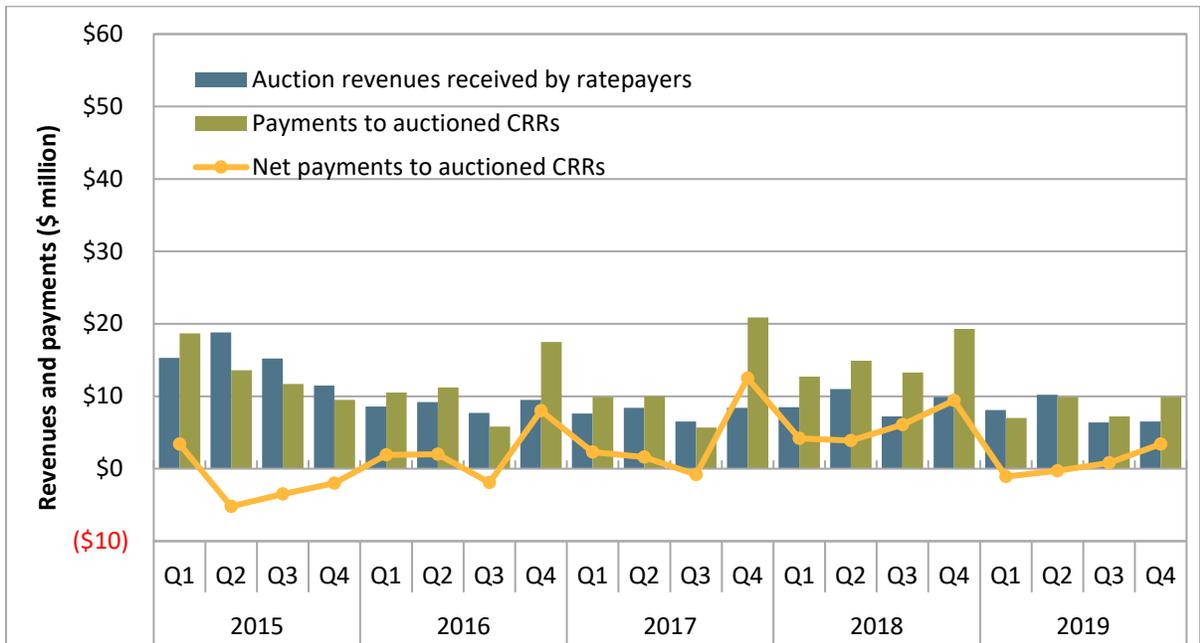
**Figure 4. Auction revenues and payments - financial entities (quarterly)**



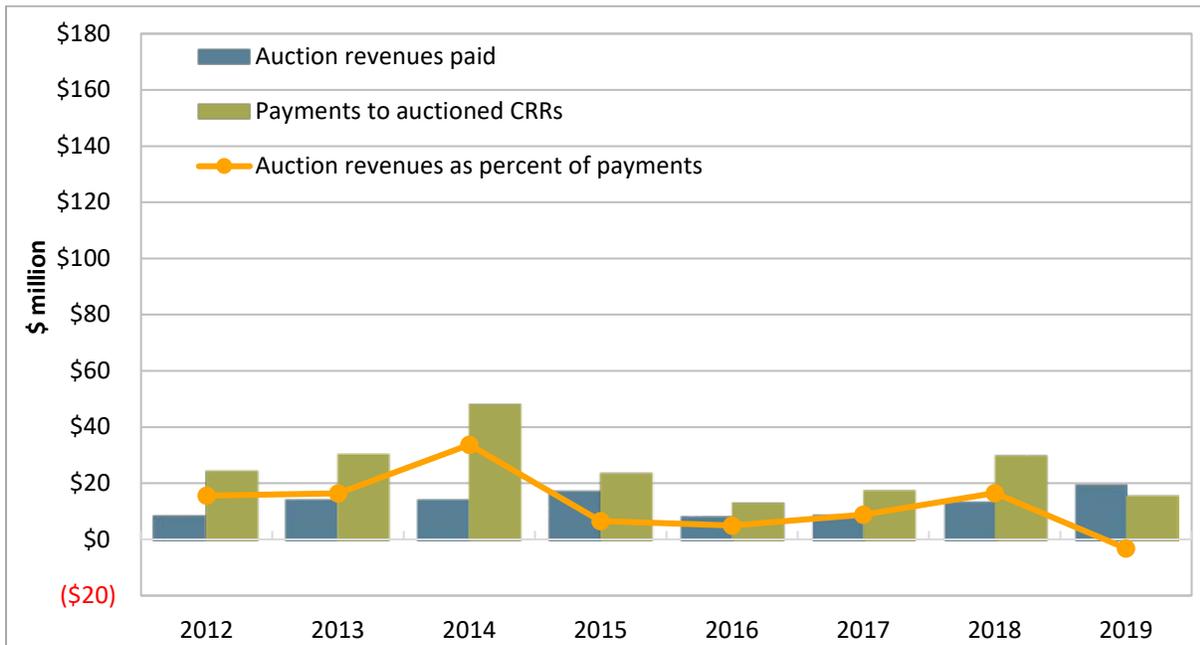
**Figure 5. Auction revenues and payments - marketers (annual)**



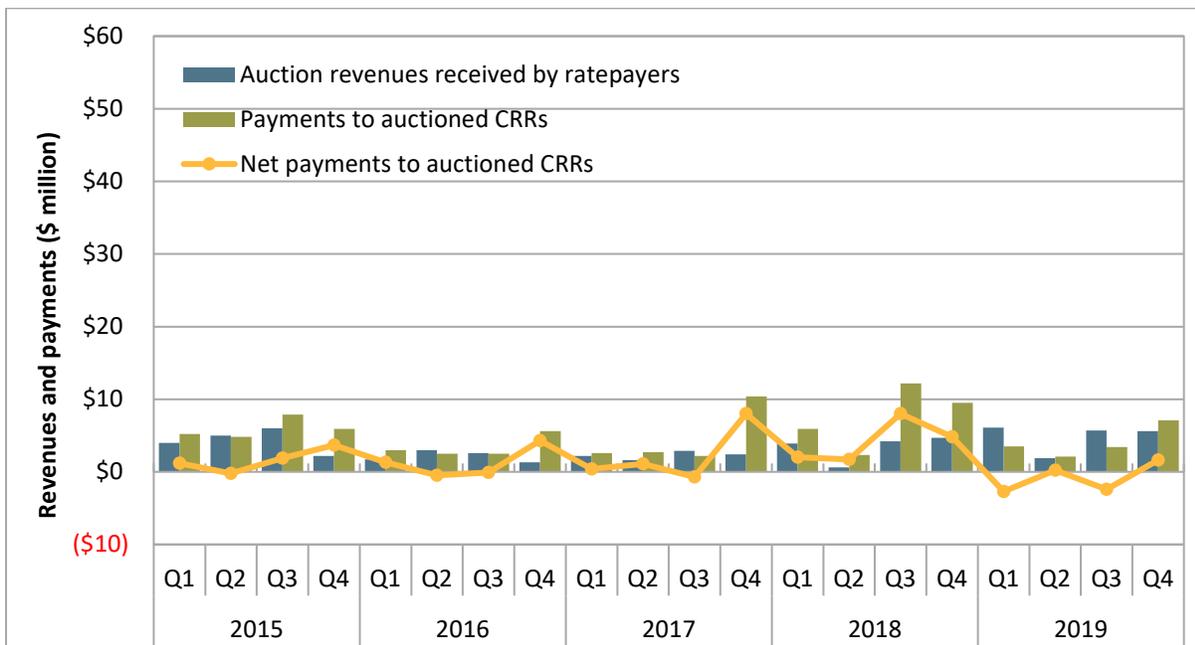
**Figure 6. Auction revenues and payments - marketers (quarterly)**



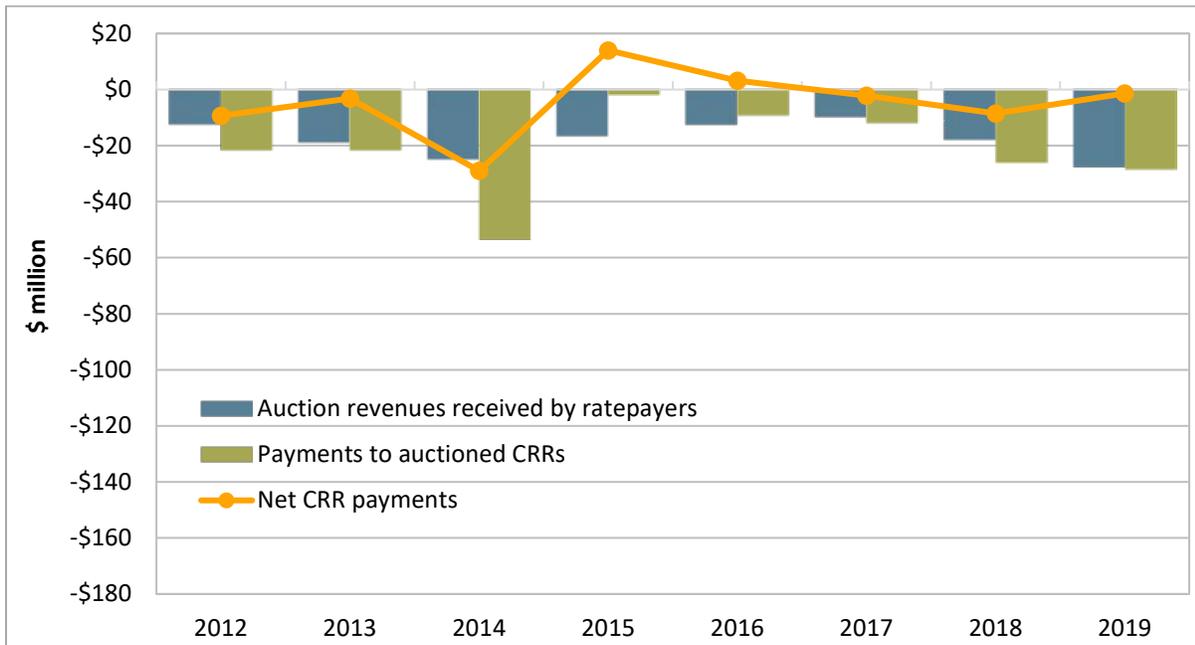
**Figure 7. Auction revenues and payments - generators (annual)**



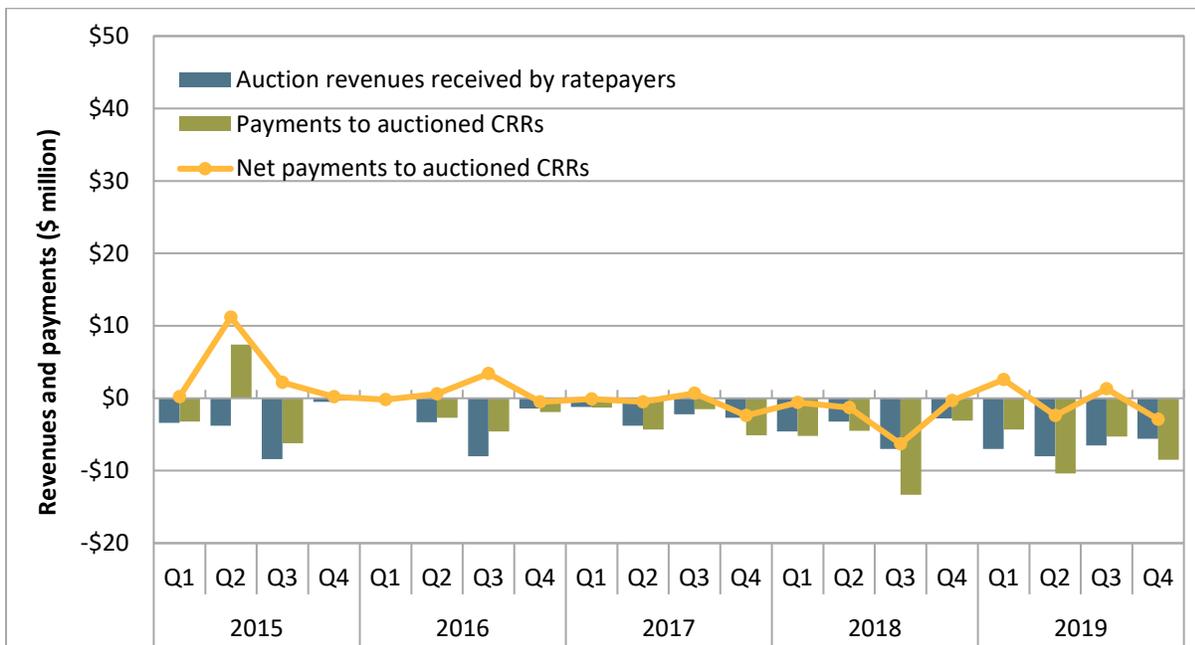
**Figure 8. Auction revenues and payments - generators (quarterly)**



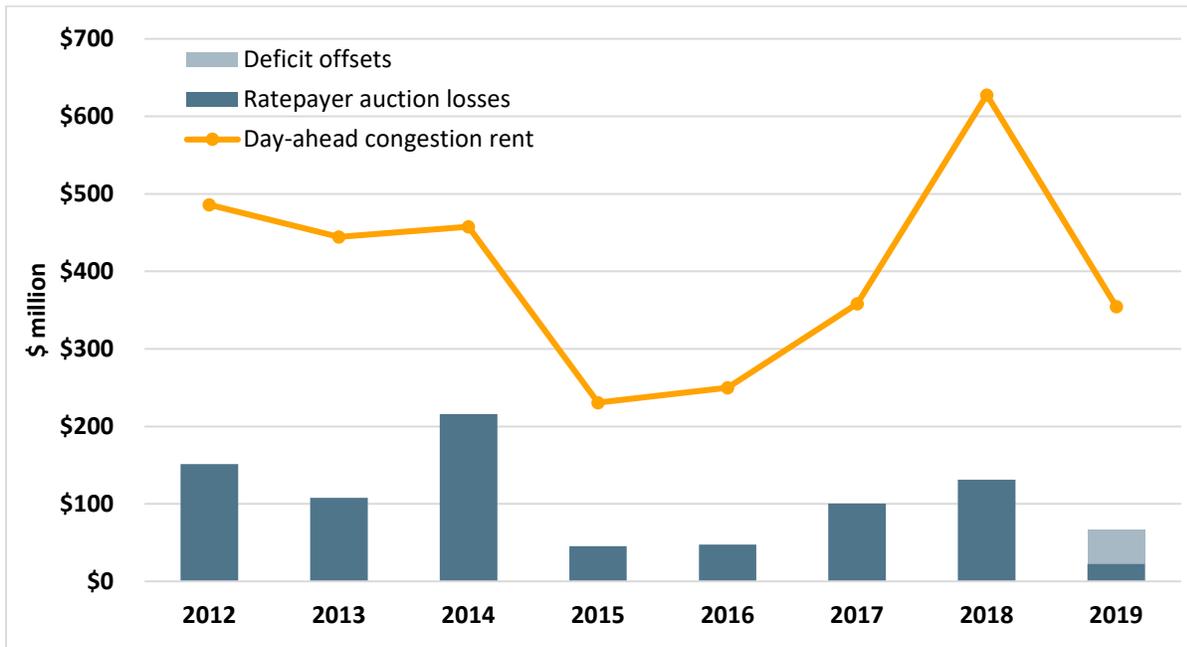
**Figure 9. Auction revenues and payments – load serving entities (annual)**



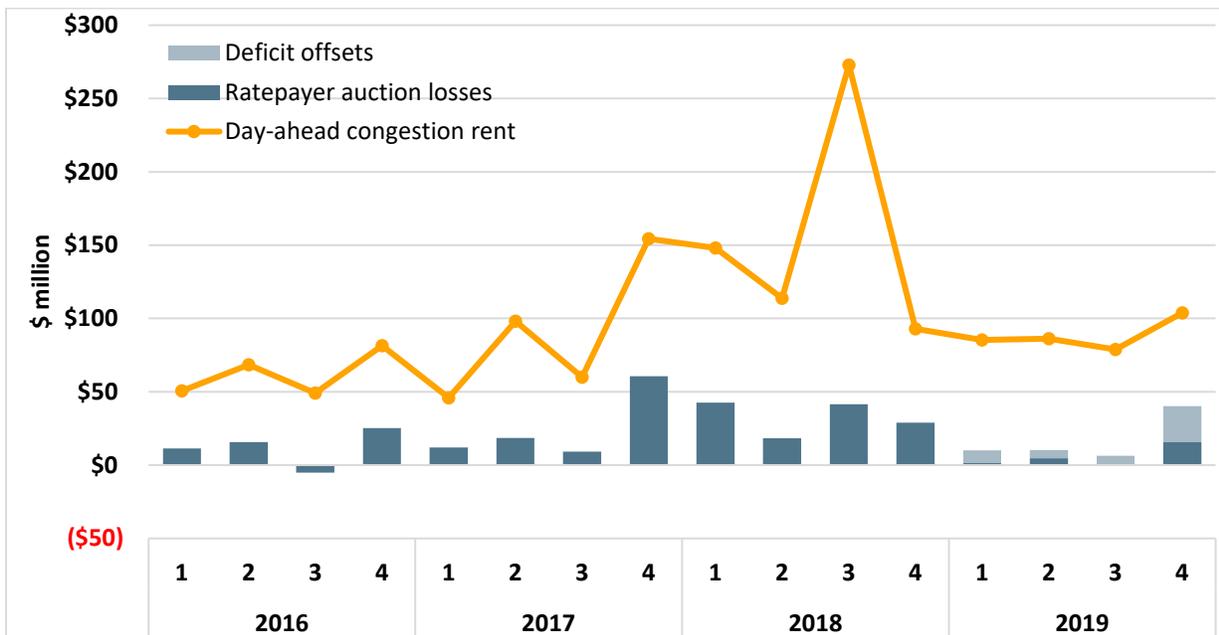
**Figure 10. Auction revenues and payments – load serving entities (quarterly)**



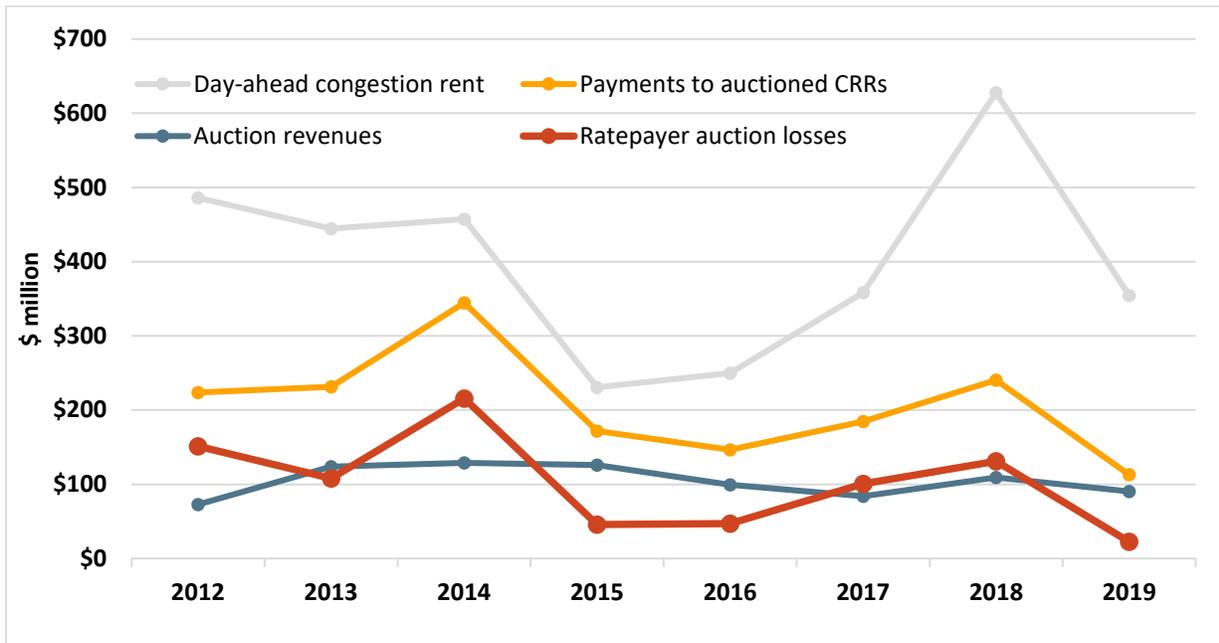
**Figure 11. Ratepayer auction losses and day-head congestion rent (annual)**



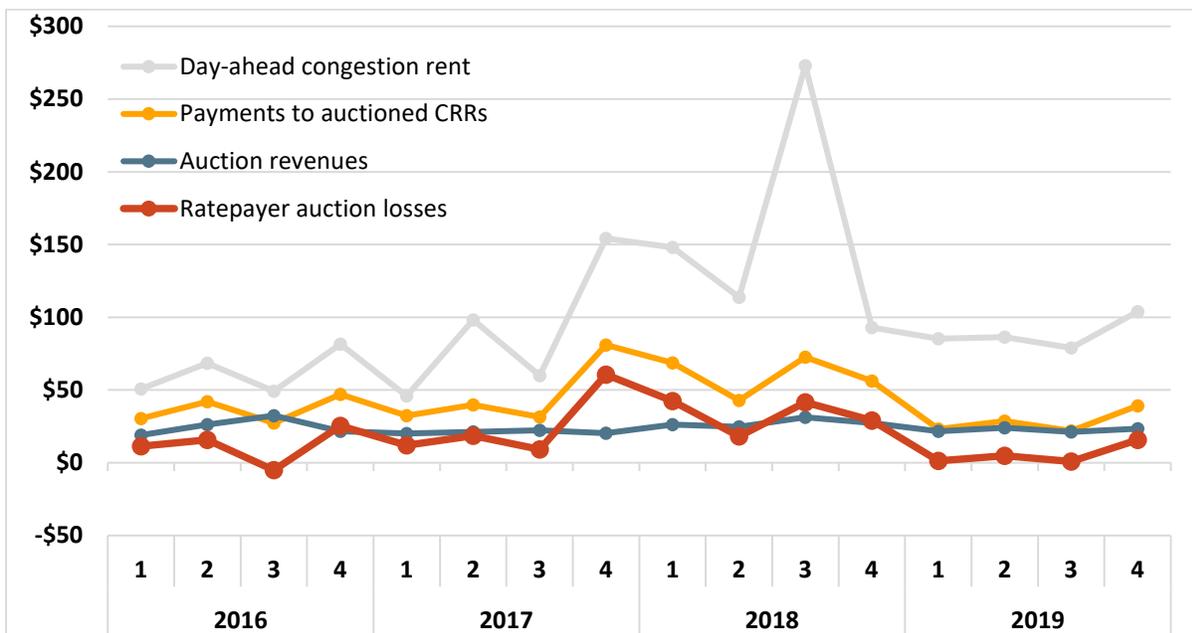
**Figure 12. Ratepayer auction losses and day-head congestion rent (quarterly)**



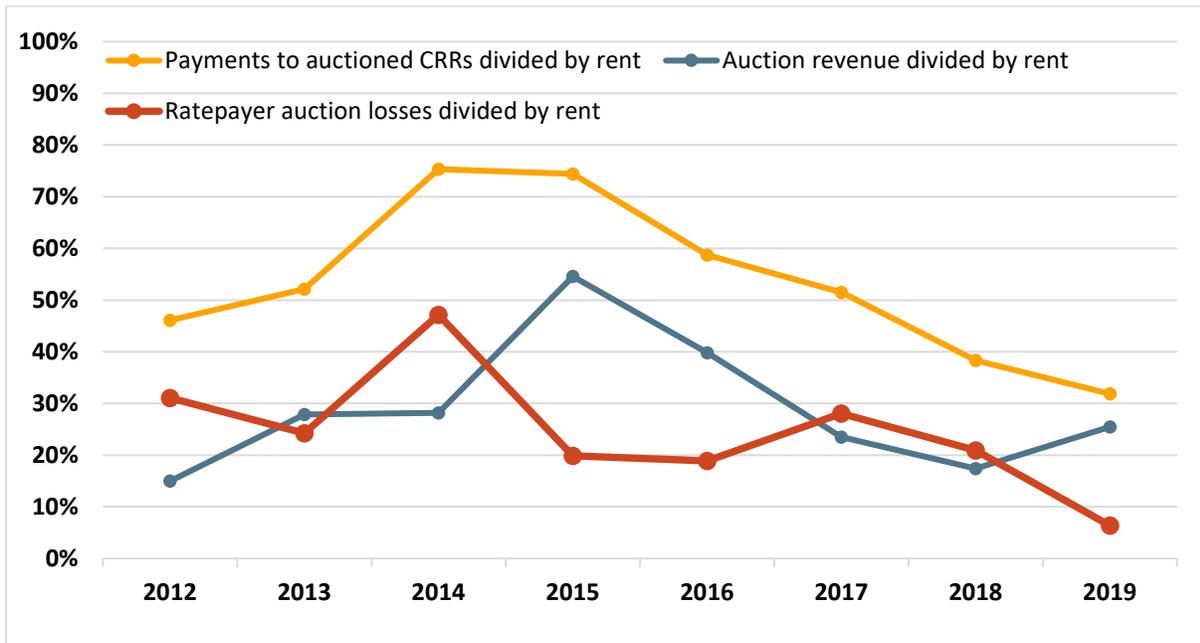
**Figure 13. Rent, auction revenues, payments, and ratepayer losses (annual)**



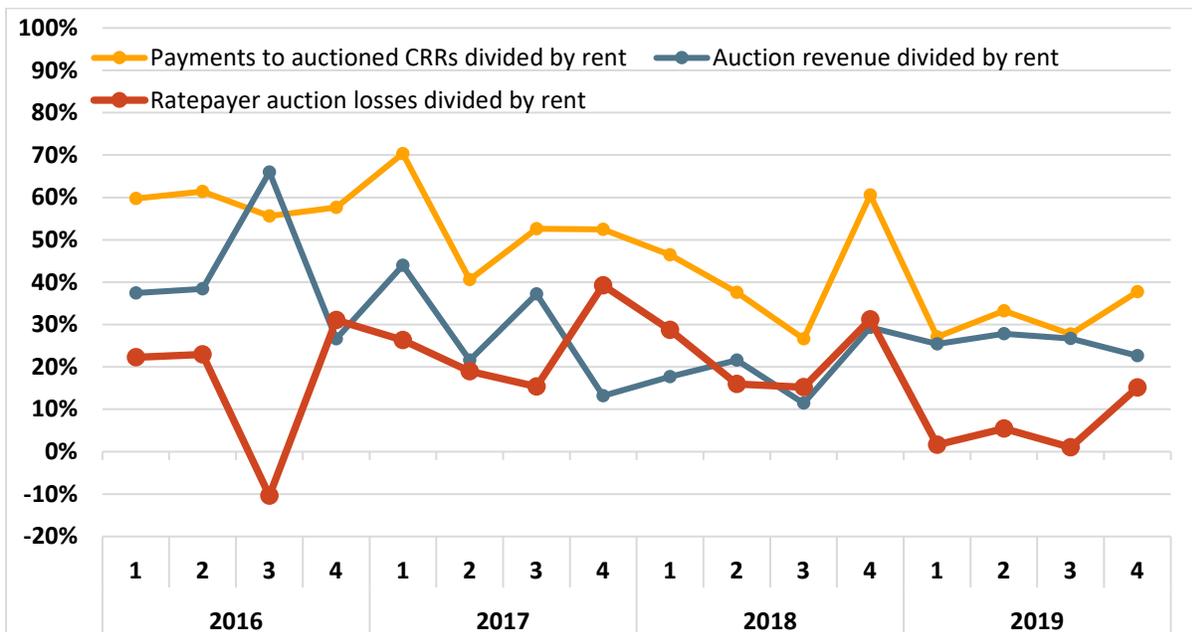
**Figure 14. Rent, auction revenues, payments, and ratepayer losses (quarterly)**



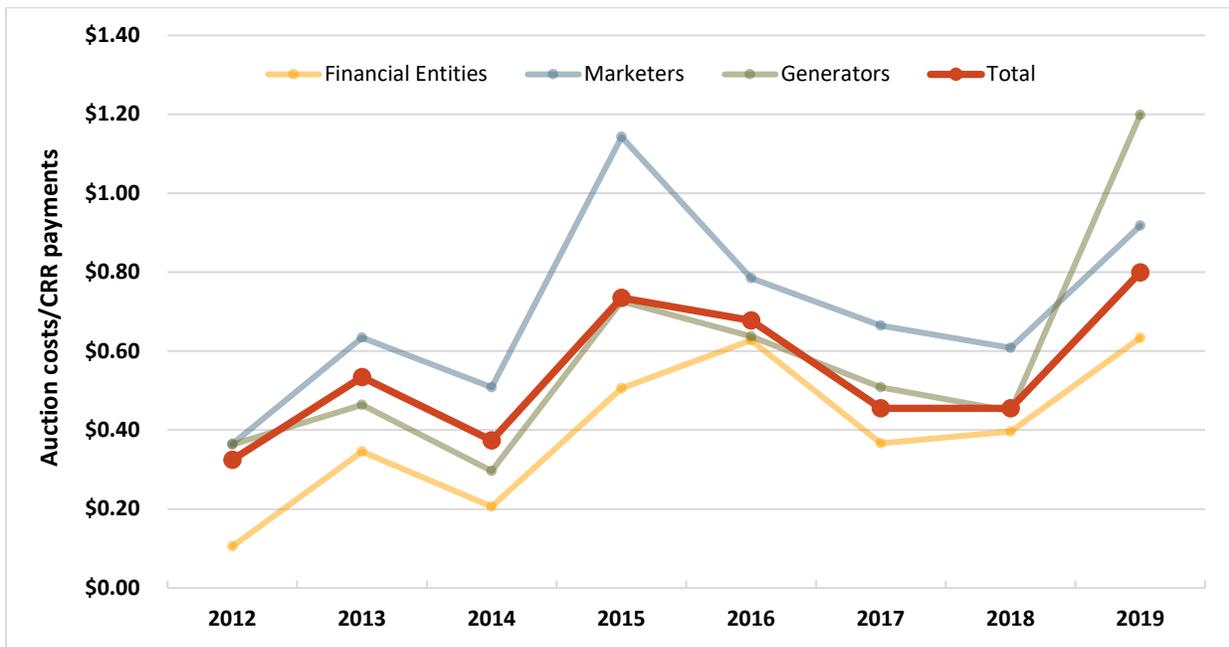
**Figure 15. Auction revenues, payments, and losses divided by rent (annual)**



**Figure 16. Auction revenues, payments, and losses divided by rent (quarterly)**



**Figure 17. Auction revenues paid divided by payments to auctioned CRRs (annual)**



**Figure 18. Auction revenues paid divided by payments to auctioned CRRs (quarterly)**

