Power Auctions

Initial Analysis of the FCC Incentive Auction*

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Overview

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- Bidding in the first-ever incentive auction concluded on March 30, 2017
- The objective of the auction was to repurpose low-band spectrum from broadcasting to mobile broadband through a voluntary mechanism
- The auction has successfully repurposed 84 MHz of low-band spectrum, including 70 MHz of licensed spectrum and 14 MHz for unlicensed use
- The auction has been successful in achieving efficient clearing
- The gross proceeds were $19.77 billion; the net proceeds were $19.31 billion
- The clearing cost was $10.05 billion
- The auction outcome should strengthen competition in the wireless market: 95% of spectrum (by value) was won by bidders that were reserve-eligible in all PEAs

Auction Format

- The Incentive Auction comprised a reverse auction and a forward auction
- In the reverse auction, television broadcasters bid to voluntarily relinquish their spectrum usage rights in a (descending) clock auction
- The forward auction was an (ascending) clock auction for generic blocks, followed by an assignment phase to assign physical frequencies
  - Only about 0.7% of the proceeds came from the assignment phase, suggestive that all seven blocks were viewed by bidders as nearly equivalent and that it was appropriate to treat all blocks as generic spectrum
- Both the reverse and forward auctions were conducted by the FCC using the PowerAuctions™ software platform, the premier software for clock auctions

Efficient Clearing

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- The incentive auction mechanism allowed the quantity of cleared, licensed spectrum to be any number up to ten (paired) blocks
- Based on all publicly-available information, the auction achieved exactly the efficient amount of clearing:
  - The cost of clearing spectrum for the seven-block band plan was $10.05 billion
  - The cost of clearing spectrum for the eight-block band plan was revealed to be $40.31 billion (the result of Stage Three of the auction)
  - Thus, the incremental cost of clearing an 8th block would have been $30 billion—more than buyers' combined bids for the first 7 blocks, or almost $10 per MHz-pop!
- Meanwhile, the resulting seven blocks are: unimpaired, contiguous to one another, and configured well for international alignment (Canada and Mexico)

Proceeds

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- The level of proceeds in the Incentive Auction are explained by three factors:
  - Verizon did not bid in the auction
  - AT&T suddenly changed its bidding to drop out of the auction (variously attributed to Time Warner deal or FirstNet contract)
  - Dish and U.S. Cellular did not invest in entities seeking bidding credits in this auction
- The revenues of the Incentive Auction have been compared (unfavorably) to the revenues of the AWS-3 Auction (FCC Auction 97, in 2015), which generated net proceeds of $41.33 billion
- However, if these same three factors had come into play in the AWS-3 Auction, our estimate is that the AWS-3 auction would have generated net proceeds of less than $16.5 billion

Comparison with AWS-3 Auction

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- Net payments by winning bidders in the AWS-3 Auction of 2015:

Winning Bidder	Actual Net Payment
AT&T	$18,189,285,000
Verizon	$10,430,017,000
Dish / SNR Wireless / Northstar	$ 9,995,567,775
U.S. Cellular / Advantage Spectrum	$ 338,304,000
T-Mobile	$ 1,774,023,000
2014 AWS Spectrum Bidco	$ 291,810,000
Puerto Rico Telephone Company, Inc.	$ 170,901,300
All other bidders	$ 139,765,250
Total	**$41,329,673,325**

Comparison with AWS-3 Auction

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- Simulated net payments if AT&T and Verizon had (not) bid as in Incentive Auction:

Winning Bidder	Actual Net Payment	Simulated Net
AT&T	~~$18,189,285,000~~	$ 896,501,000
Verizon	~~$10,430,017,000~~	$ 0
Dish / SNR Wireless / Northstar	~~$ 9,995,567,775~~	$ 9,989,998,000
U.S. Cellular / Advantage Spectrum	~~$ 338,304,000~~	$ 338,289,000
T-Mobile	~~$ 1,774,023,000~~	$ 3,499,989,000
2014 AWS Spectrum Bidco	~~$ 291,810,000~~	$ 817,271,000
Puerto Rico Telephone Company, Inc.	~~$ 170,901,300~~	$ 125,188,000
All other bidders	~~$ 139,765,250~~	$ 797,664,000
Total	**~~$41,329,673,325~~**	**$16,464,900,000**

These Slides

- These slides contain our initial analysis of the FCC Incentive Auction
- They will be superseded in due course by a full paper, “Market Design and the FCC Incentive Auction”

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