

# **Incentive Auctions for Repurposing Broadcasting Spectrum**

Evan Kwerel  
Federal Communications  
Commission

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# Problem

- Develop a *voluntary* market mechanism to efficiently repurpose broadcast spectrum

# Repurposing Broadcast Spectrum: Two Auction Designs

## ■ Sequential auctions

- ◆ Incentive auction – binding offers to sell spectrum (supply curve)
- ◆ “Forward” auction – binding bids to buy spectrum (demand curve)
- ◆ Determine amount of spectrum cleared (supply = demand)
- ◆ Repack broadcasters and consummate winning offers

## ■ Double auction (Exchange)

- ◆ Conduct first three steps above simultaneously
- ◆ Repack broadcasters and consummate winning offers

## ■ Approaches essentially equivalent

- ◆ Amount of spectrum cleared, winning sellers and buyers determined using full information about *both* supply and demand
- ◆ But sequential approach is easier to implement

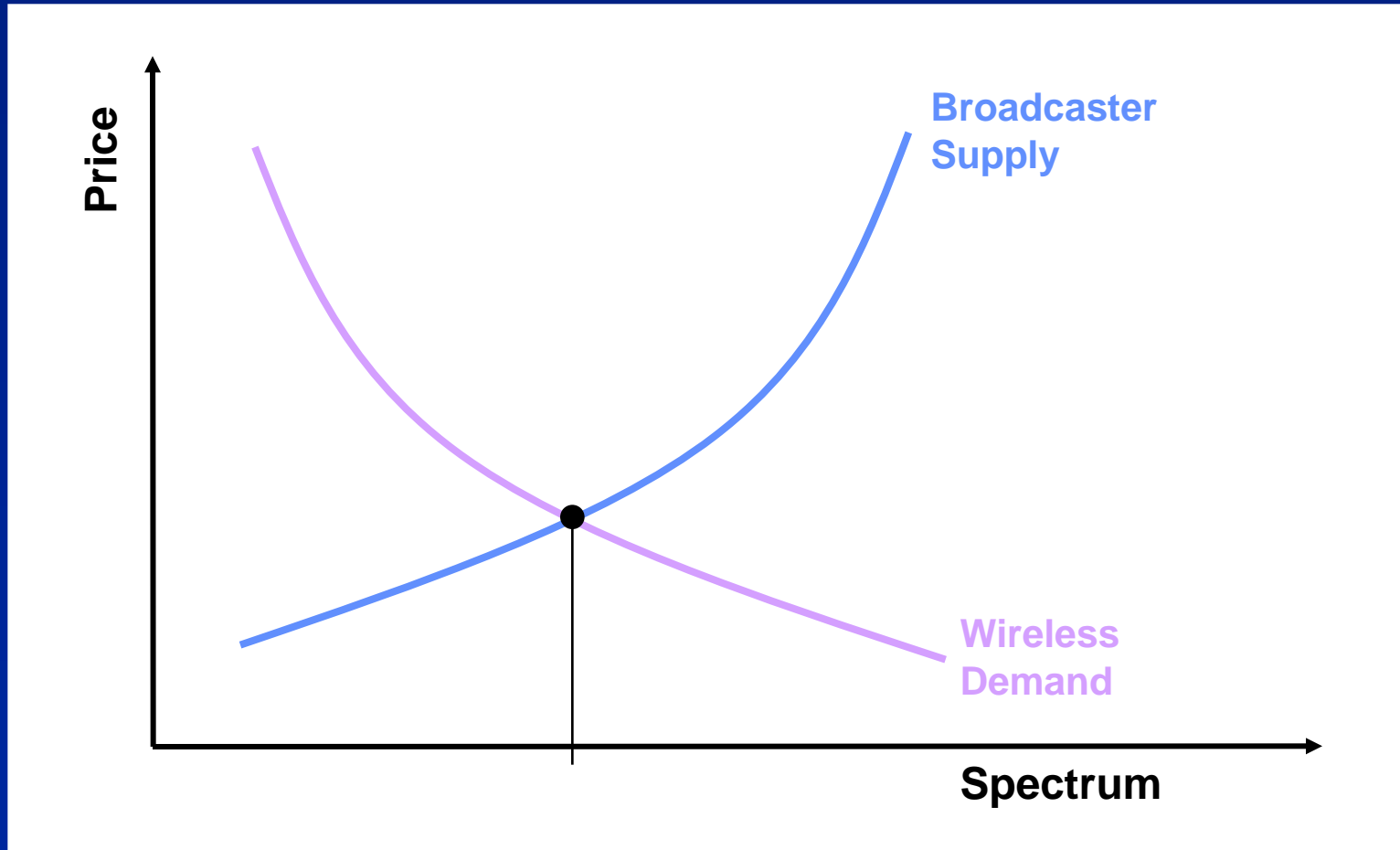
# Incentive auction to clear spectrum

- Incumbents make voluntary binding offers to release spectrum
  - ◆ Share a channel in same market through multicasting with other broadcasters, while retaining must-carry rights for primary program stream
  - ◆ Discontinue OTA broadcasting
  - ◆ Move to upper VHF or lower VHF band
- Find the least costly way to clear various amounts of contiguous spectrum in each market based on the price offers from incumbents (create supply curves)
  - ◆ FCC can involuntarily repack TV channels within each band to clear contiguous blocks

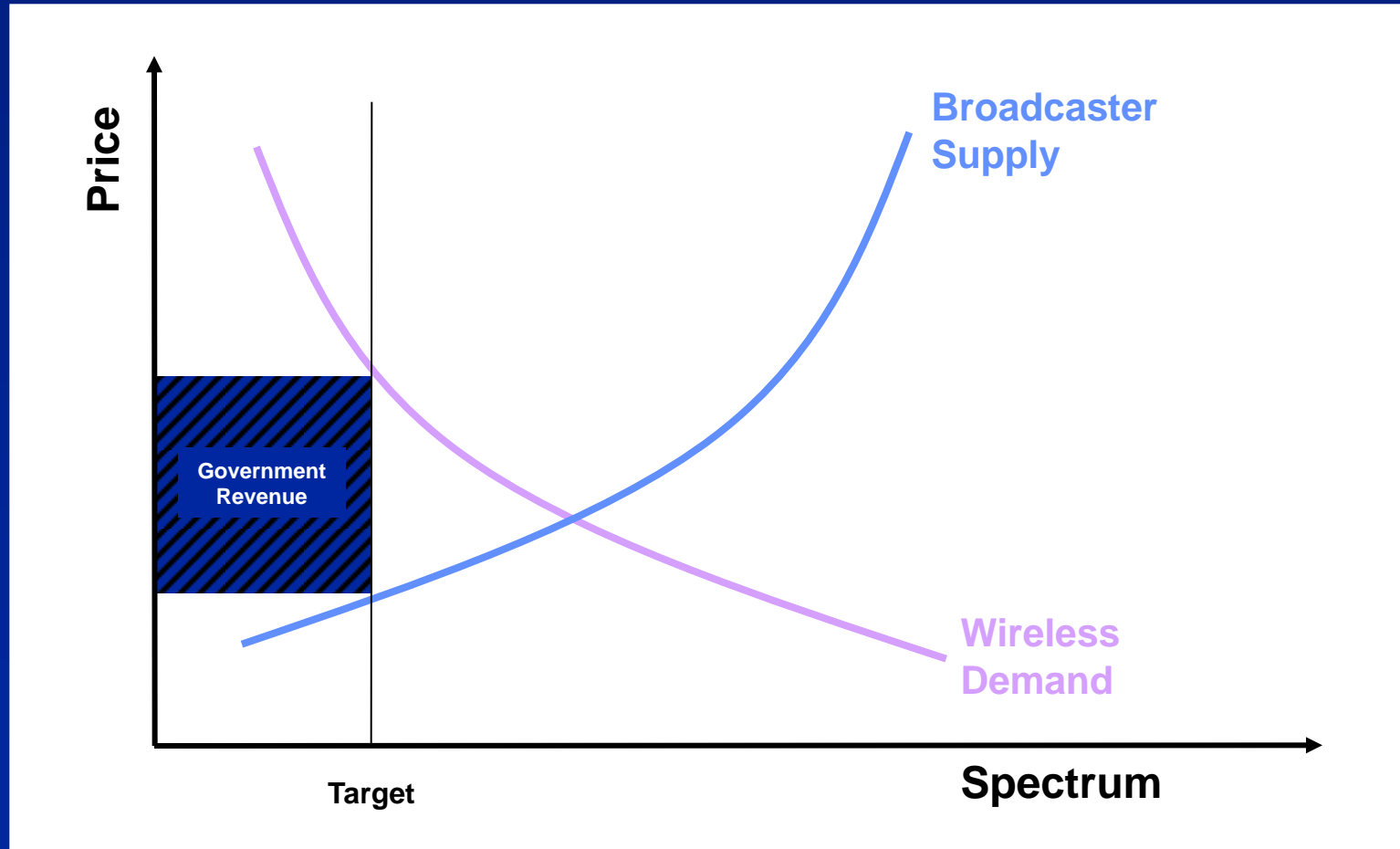
# **“Forward” auction for cleared spectrum**

- Determine alternative band plans (depending on amount of spectrum made available) for new flexible uses, e.g., mobile broadband
- Participants make binding bids to buy spectrum licenses (create demand curves)

# Determine amount of spectrum cleared



# A Market Where Target Achieved When Clearing Cost Less Than Auction Revenue



# Consummated winning offers and repack broadcasters

- Collect payments from winners of forward auction and assign licenses
- Make payments to winners of incentive auction
- Reassign channels to broadcasters remaining on the air and compensate for moving cost
- Deposit remaining auction revenue in Treasury

# Alternative – Double Auction (Exchange) to Simultaneously Clear and License

- FCC conducts an exchange in which broadcasters offer spectrum (by channel sharing, discontinuing OTA broadcasting or moving to VHF) and mobile operators bid on new unencumbered licenses *simultaneously*.
- Exchange simultaneously determines winning sellers, winning buyers and the amount of spectrum cleared.

# Thank You

For further information

[evan.kwerel@fcc.gov](mailto:evan.kwerel@fcc.gov)