Identifying market participants

- Bidding markets
  - The idea
    - In some markets, large supply contracts are let out for bid
      - For example, when General Motors is developing a new car, it has to arrange for a supply of the parts necessary to manufacture the car. Many times, these parts are custom designed and not interchangeable with the parts for existing models. General Motors will issue a "request for proposal" (RFP) asking potential suppliers to bid to supply a particular part. General Motors will ultimately awarded the agreement contract to one or perhaps two bidders.
    - Where the contracts are large and extend over multiple years, the bidding can be intense and involve multiple bidders
    - Only one bidder, however, will ultimately obtain the contract and that bidder will supply 100% of the contract
    - Giving the winning bidder a 100% share and the other bidders a zero share gives an inaccurate picture of the competition for the contract
  - The solution
    - In these situations where each bidder has a realistic chance of winning the bid, each of the *n* bidders is assigned a share in the bidding market of 1/n
  - Example
    - Say off-shore oil drilling leases are a relevant market. The federal government bids out these leases and ten firms regularly bid for them. Five firms currently operate drilling operations on the leases they have won. Regardless of their market shares (say, based on oil production or oil reserves), all ten regular bidding firms would be deemed to be participants in the in the market and each would be assigned a share of 10%.

Aggregate diversion/recapture analysis

- Multiple margins in differentiated candidate markets
  - If percentage margins differ in the candidate market, then use the revenue share-weighted percentage margin as *m* in calculating R_{cl} in either the one-product or uniform SSNIP version of the aggregate diversion ratio tests
  - Alternatively, if information is not available to calculate the revenue share-weighted percentage margin, then you can use the *smallest* margin to create another sufficiency test
    - The smallest margin in the candidate market will create the largest critical recapture ratio
    - Again, this is only a sufficient condition, not a necessary one
    - The revenue-share weighted percentage margin approach will produce lower critical recapture ratios than the smallest margin approach

Critical loss: Differentiated margins

- Multiple margins in differentiated markets
  - In the critical loss formulas in the earlier slides, the percentage margins in the candidate markets were all assumed to be equal
  - In many differentiated candidate markets, however, the percentage margins will differ among products
  - There are two modifications of the formulas to handle multiple margins
    1. Revenue share-weighted margins
       - Replace *m* in the above formulas with the revenue share-weighted average margin of the products in the candidate market
       - This essentially assumes that unit losses by the hypothetical monopolist as a result of a uniform SSNIP are proportional to revenue shares within the candidate market
    2. The maximum margin as a sufficient condition
       - Replace *m* in the above formulas with the maximum margin of the products in the candidate market
       - A *sufficient* condition for the candidate market to be a relevant market is if the actual loss by the hypothetical monopolist is less than the critical loss using the maximum margin
         - This essentially assumes the worst case: that all unit losses by the hypothetical monopolist as a result of a unfirm SSNIP all come from the product with the highest margin and hence yields the maximum profit loss
         - May use the test if data for a revenue-share-weighted margin is not available
       - This is a sufficient condition only: failure to satisfy the test does not mean that the candidate market is not a relevant market, since if some losses come from lower margin products the true critical loss is lower than the critical loss calculated using the maximum margin

Critical loss: Differentiated margins

1. Revenue share-weighted average margins (standard approach)
   - Replace *m* in the above formulas with the *revenue share-weighted average margin* of the products in the candidate market
   - Example:

> The differentiated candidate market contains three products with different margins given in the table below. For a 5% SSNIP, the hypothetical monopolist would lose 8% of its sales. Is the candidate market a relevant market?

   - The data:

Product	Revenue share	Margin
A	0.5	0.4
B	0.3	0.7
C	0.2	0.3

   - Calculate the revenue share-weighted average margin:

$$m_{ave} = (0.5)(0.4) + (0.3)(0.7) + (0.2)(0.3) = 0.47$$

   - Calculate the percentage critical loss:

$$(\%CL =)\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m_{ave}} = \frac{0.05}{0.05 + 0.47} = 9.62\%$$

   - Since the actual percentage loss (8%) is less than the percentage critical loss calculated using revenue share-weighted margins, the candidate market is a relevant market

Critical loss: Differentiated margins

2. Maximum margin approach (sufficient condition)
   - Replace *m* in the above formulas with the maximum margin of any of the products in the candidate market
   - Example:

> The differentiated candidate market contains three products with different margins given in the table below. For a 5% SSNIP, the hypothetical monopolist would lose 8% of its sales. Is the candidate market a relevant market?

- The data:

Product	Revenue share	Margin
A	0.5	0.4
B	0.3	0.7
C	0.2	0.3

- Identify the maximum margin: $m_{max} = 0.7$
- Calculate the percentage critical loss:

$$(\%CL =)\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m_{\max}} = \frac{0.05}{0.05 + 0.7} = 6.67\%$$

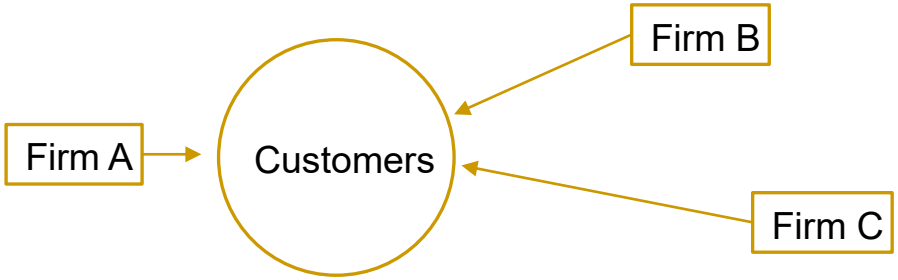
- Since the actual percentage loss (8%) is greater than the critical loss calculated using the maximum margin, the candidate market fails this test
- BUT this does not mean that the candidate market is not a relevant market, since it assumes the worst possible losses for the hypothetical monopolist. Using a revenue share-weighted margin (prior slide), we saw that the candidate market is a relevant market

1. Second price auction model

- Basic theory:
  - Lowest cost pays a price just below the bid by the second lowest cost firm
  - Anticompetitive unilateral effect when the two lowest cost firms merge unless the third-lowest cost firm is very close to the second lowest
  - If data on costs are not available, then can use historical bid prices as proxies for the cost relationships

1. Second price auction models

- Example
  - Consider three firms that are the only firms that ship a homogeneous product to a customer-based relevant geographic market



	F.O.B	Shipping Cost	Delivered cost
A	100	7	107
B	100	12	112
C	100	15	115

  - Bertrand model predictions
    - Premerger, firm A wins the bids at a price just below firm B's delivered cost of $112
    - If A and B merge, then the combined company wins the bid at a price just below C's delivered cost of $115 → Merger increases prices to customers in the relevant market
    - If A and C merge, then the identity of the second lowest cost firm does not change and there is no postmerger price increase

1. Second price auction models

- The antitrust practice
  - The agencies and the courts do not believe that this model predicts actual winning bid prices, but they do accept that the winning bid prices are positively correlated with the predictions

    This means that if the lowest cost bidder acquires the second lowest cost bidder and the third lowest cost bidder is materially more distant, the agencies will accept a second price auction analysis as prima facie evidence of an anticompetitive price increase if A were to acquire B

  - Since the agencies and the court accept that delivered prices are correlated with delivered costs, the second price auction model may be applied to delivered prices if delivered costs are not available
    - That is, if one only observed the following delivered prices

	Delivered price
A	111
B	113
C	117

    - The agencies and the courts would accept a second price auction analysis as prima facie evidence of an anticompetitive price increase if A were to acquire B and C had a materially higher bid price than B