The Welfare Effects of Ticket Resale

Phillip Leslie & Alan Sorensen

Stanford GSB

Ticket Resale

- Repugnant to many (non-economists)
- Internet-driven growth
  - 22% of web buyers purchased an event ticket online in Q1 2007 (Forrester Research)
  - 13% purchased from an online secondary source (Forrester Research)
  - eBay acquired StubHub for $310M, TicketMaster acquired TicketsNow for $265M, Kleiner Perkins invested $26M in RazorGator
  - Transparent, accessible, legitimate, efficient …
- Trend of deregulation
  - Connecticut, Pennsylvania, Minnesota, Missouri & New York repealed anti-scalping laws in 2007

Welfare Effects

- Voluntary transactions
- Reallocation of goods to high value consumers

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- Two complications

  1) Initial allocation in resale market is endogenous

  2) Brokers – create & capture value

Complexity of Welfare Consequences

1) Resale reallocates tickets to people with highest values
2) Resale increases prices paid by attendees
3) Resale generates profits for brokers
4) Consumers may also profit from reselling
5) Resale causes some people to buy in the primary market who otherwise would not have (possibly increasing primary market sales)
6) Resale causes some people to wait (possibly reducing primary market sales)
7) Resale increases competition for tickets in the primary market, lowering the chances of any particular individual getting a ticket, & promoting costly rent-seeking behavior
8) Resale may cause producers to increase prices (or otherwise modify price schedules)

Complexity of Welfare Consequences

1) Resale reallocates tickets to people with highest values **Value Creation**

2) Resale increases prices paid by attendees

3) Resale generates profits for brokers **Redistributions**

4) Consumers may also profit from reselling

5) Resale causes some people to buy in the primary market who otherwise would not have (possibly increasing primary market sales)

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7) Resale increases competition for tickets in the primary market, lowering the chances of any particular individual getting a ticket, & promoting costly rent-seeking behavior

8) Resale may cause producers to increase prices (or otherwise modify price schedules)

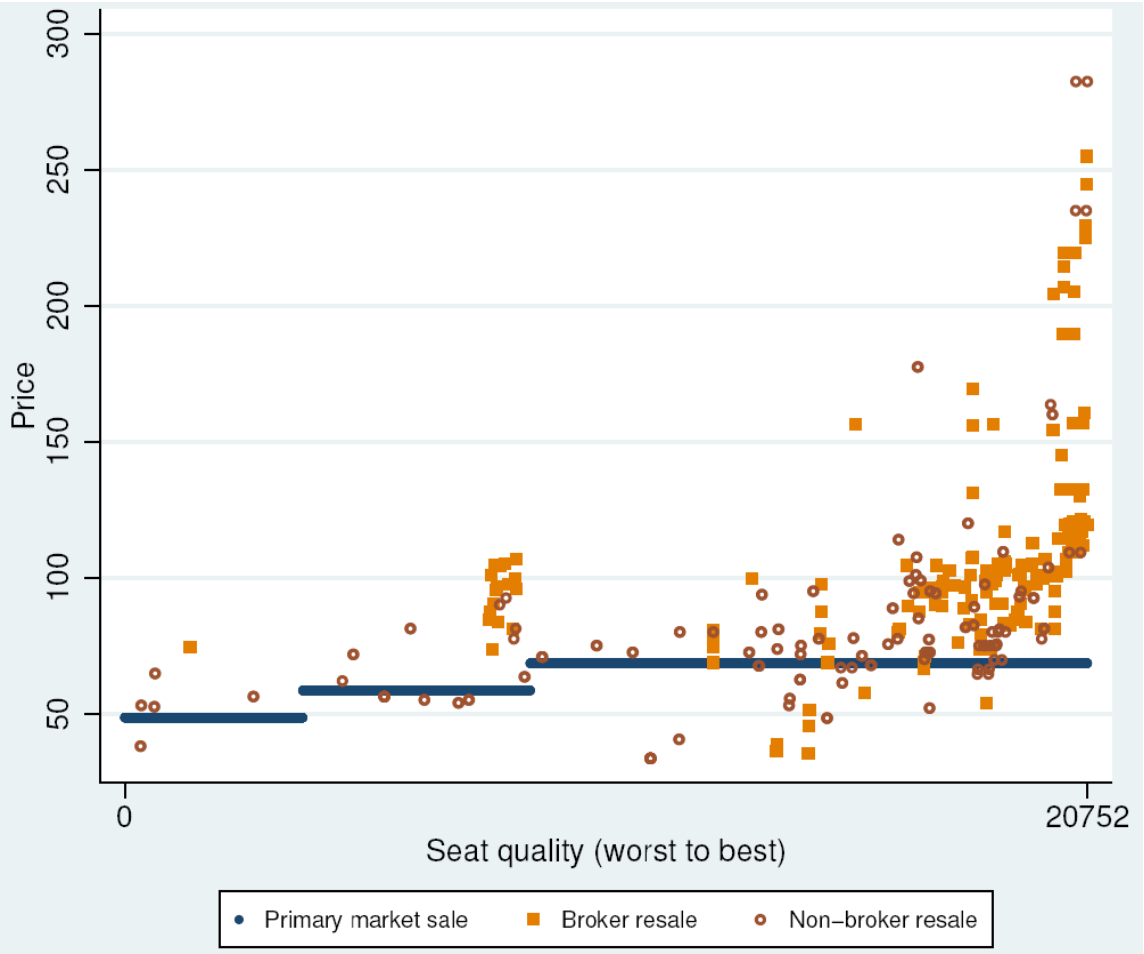
Our Goals

- Quantify the welfare effects of resale markets for event tickets
  - How much does resale increase aggregate welfare, relative to a world without any resale? Who wins & who loses?
  - How would changes (e.g. lower transaction costs) in the resale market affect payoffs to sellers, consumers & brokers?
  - How would resale markets be affected by changes in primary market pricing practices?
- We estimate a structural model using transaction-level data on 103 rock concerts from the summer of 2004

Preview of Structural Model

- Two periods
- Buyers are either brokers or consumers
- Buyers have rational expectations of secondary market equilibrium
- Frictions in resale market:
  - Transaction costs (different for brokers & consumers)
  - Random participation in resale auctions
- Uncertainty about overall level of demand in primary market

Kenny Chesney, Tacoma Dome (WA), 17 June, 2004



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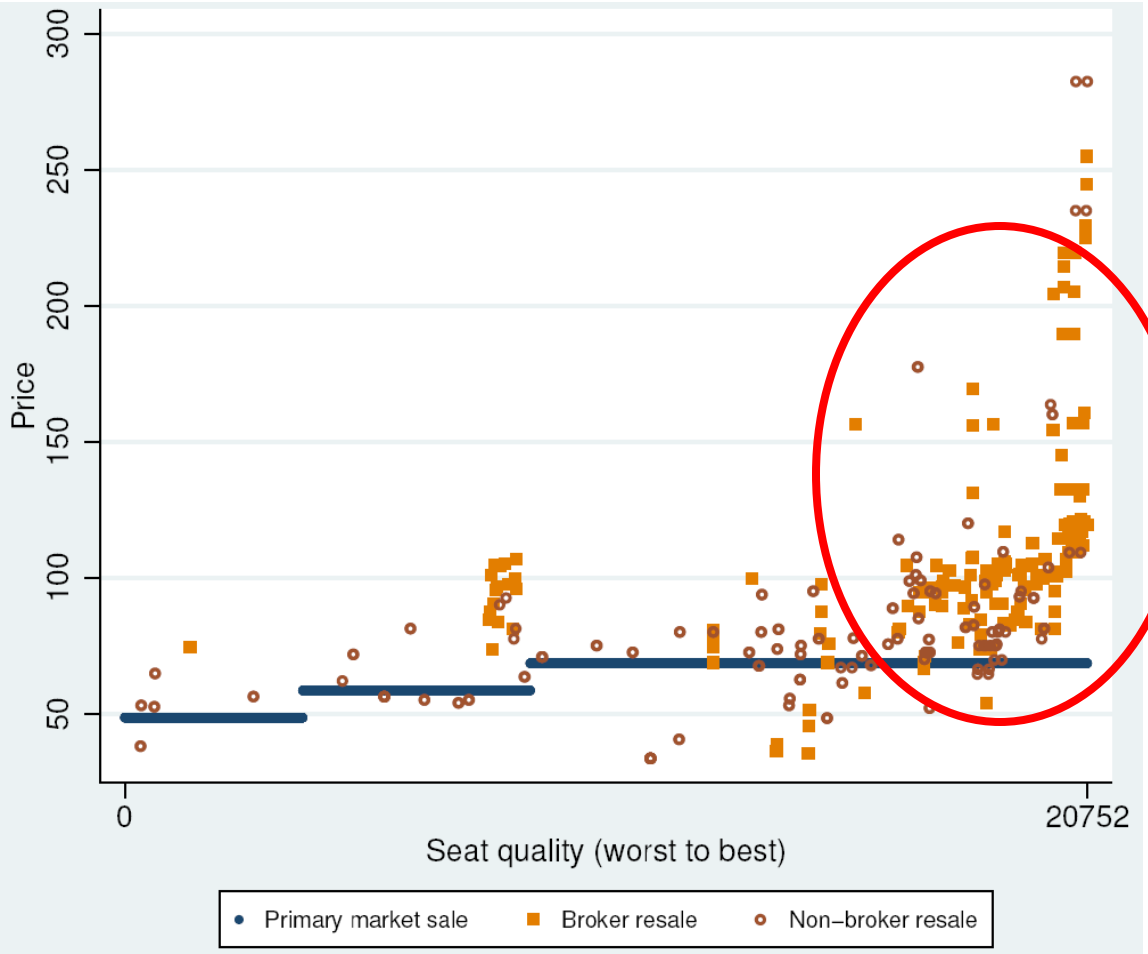

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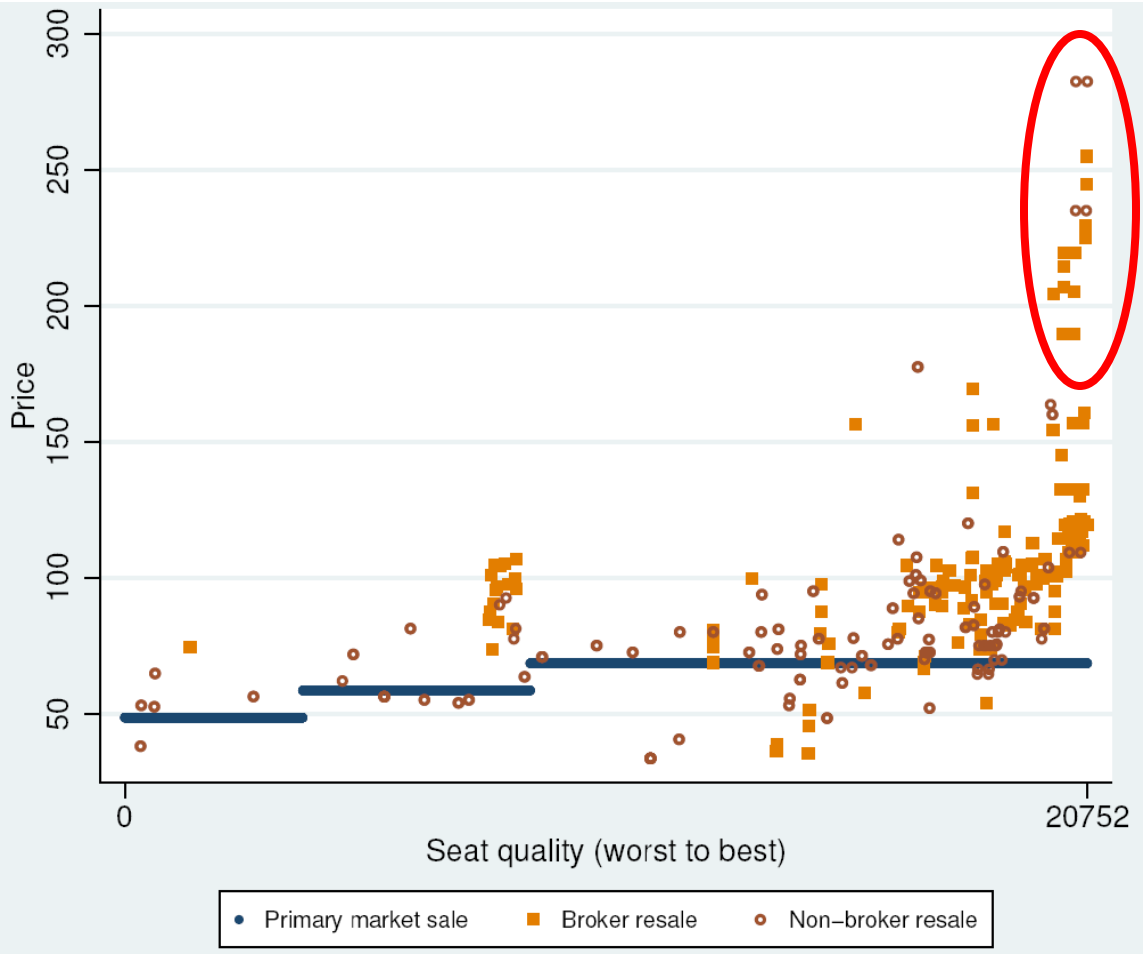

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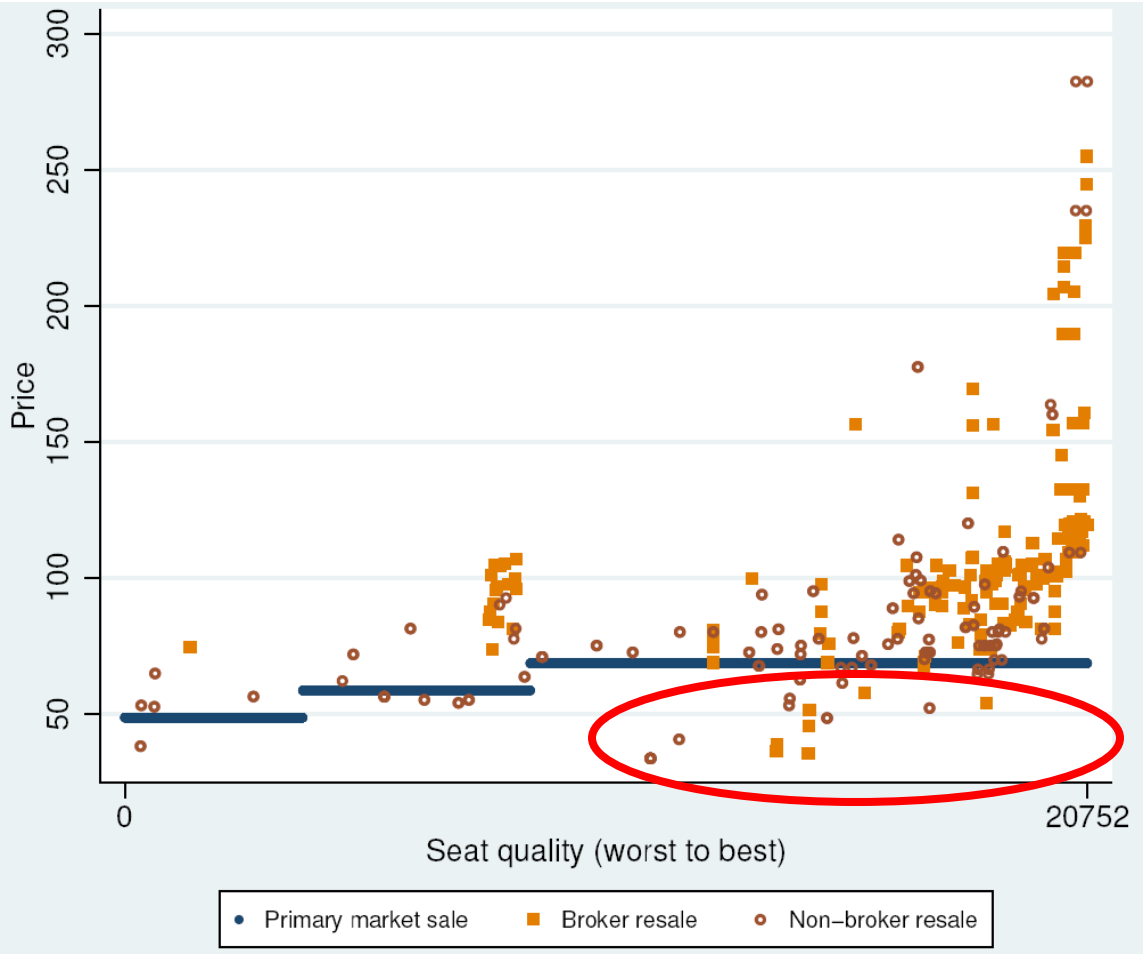

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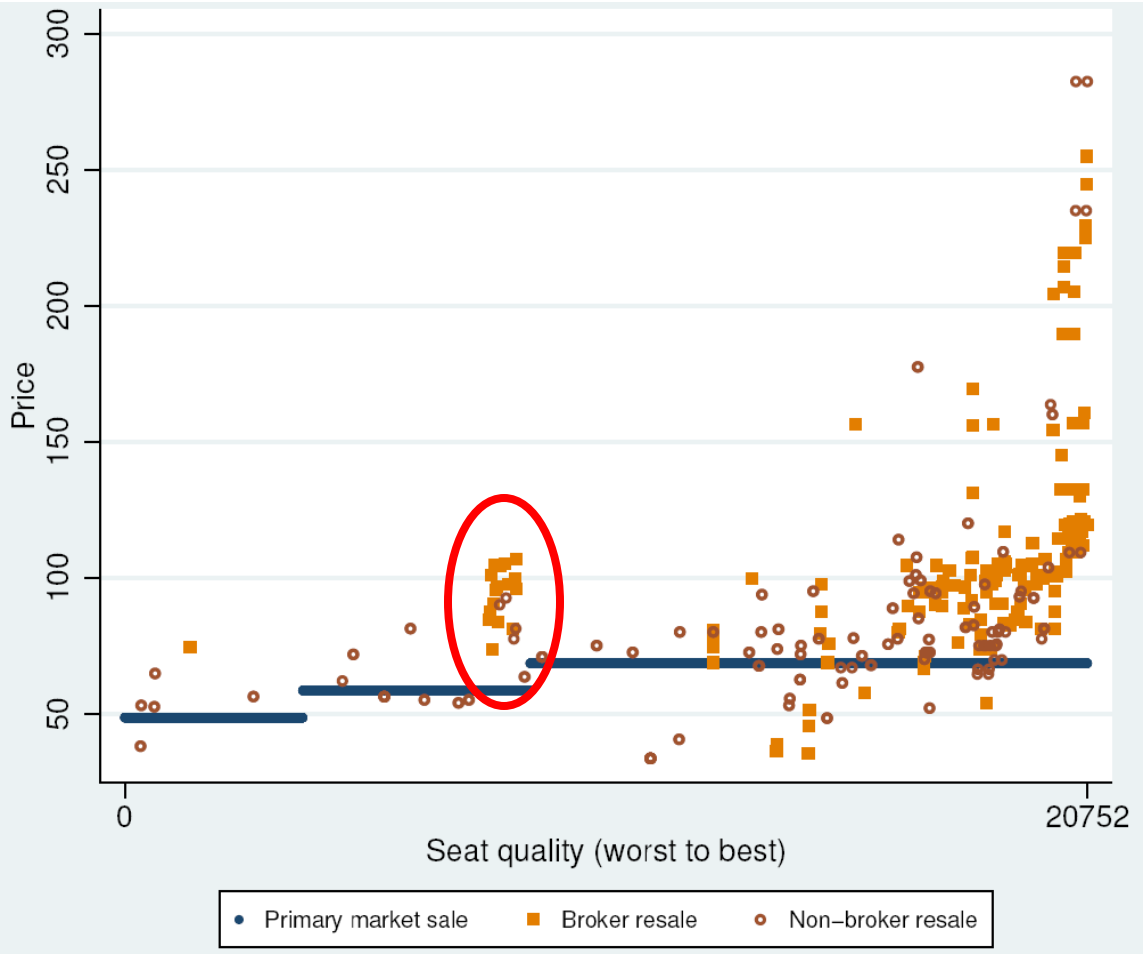

Summary Stats – Resold Tickets, N = 68,828

			Percentiles				
	Mean	Std. Dev.	Min	.25	.50	.75	Max
Resale price	111.66	78.39	3.03	65.00	91.25	134.98	2000.00
Markup	21.83	66.35	-308.65	-3.28	18.90	43.89	1686.40
% Markup	0.39	0.75	-0.98	-0.04	0.29	0.65	14.86
Seat quality	0.62	0.27	0.00	0.38	0.69	0.87	1.00
Days to event	41.89	41.75	0.00	7.00	24.00	73.00	208.00
Sold by broker	0.55	0.50	0.00	0.00	1.00	1.00	1.00
Sold below face value:							
by broker	0.24	0.42	0.00	0.00	0.00	0.00	1.00
by non-broker	0.33	0.47	0.00	0.00	0.00	1.00	1.00

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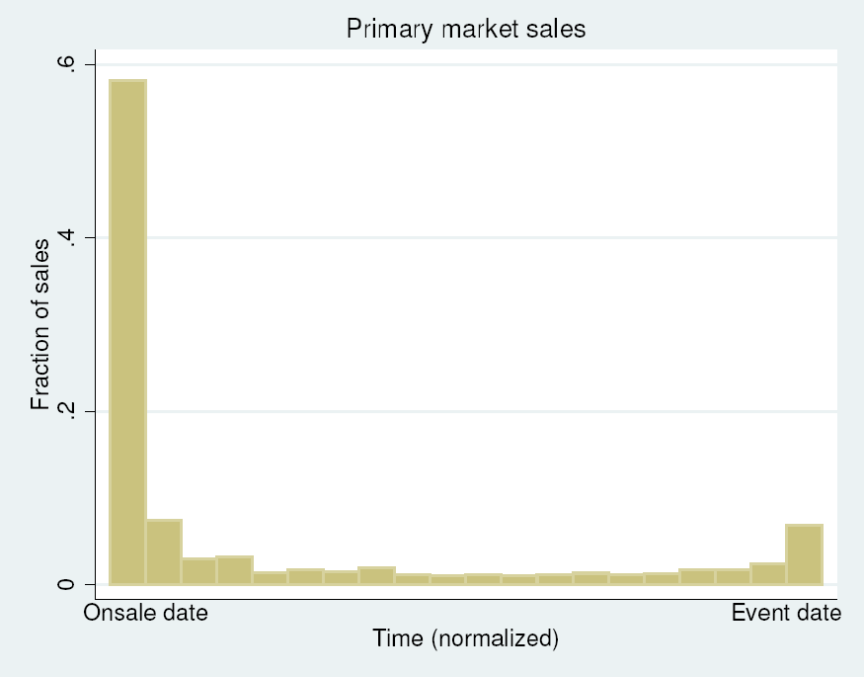
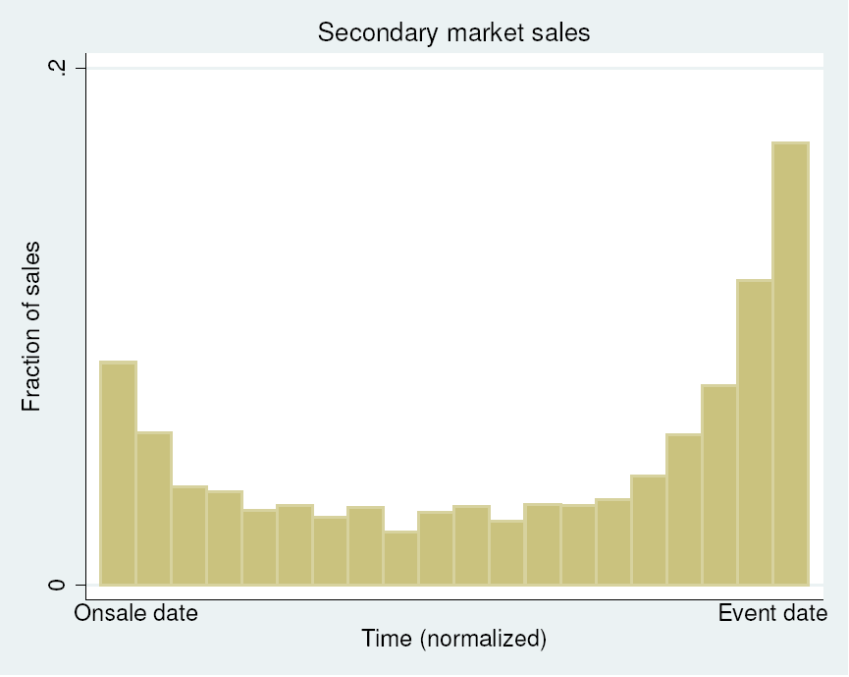
Transaction Timing





Model Overview

Period 1 – Primary Market

Brokers & consumers arrive in random sequence

All have expectations about resale value of each seat

Consumers vary in WTP for themselves

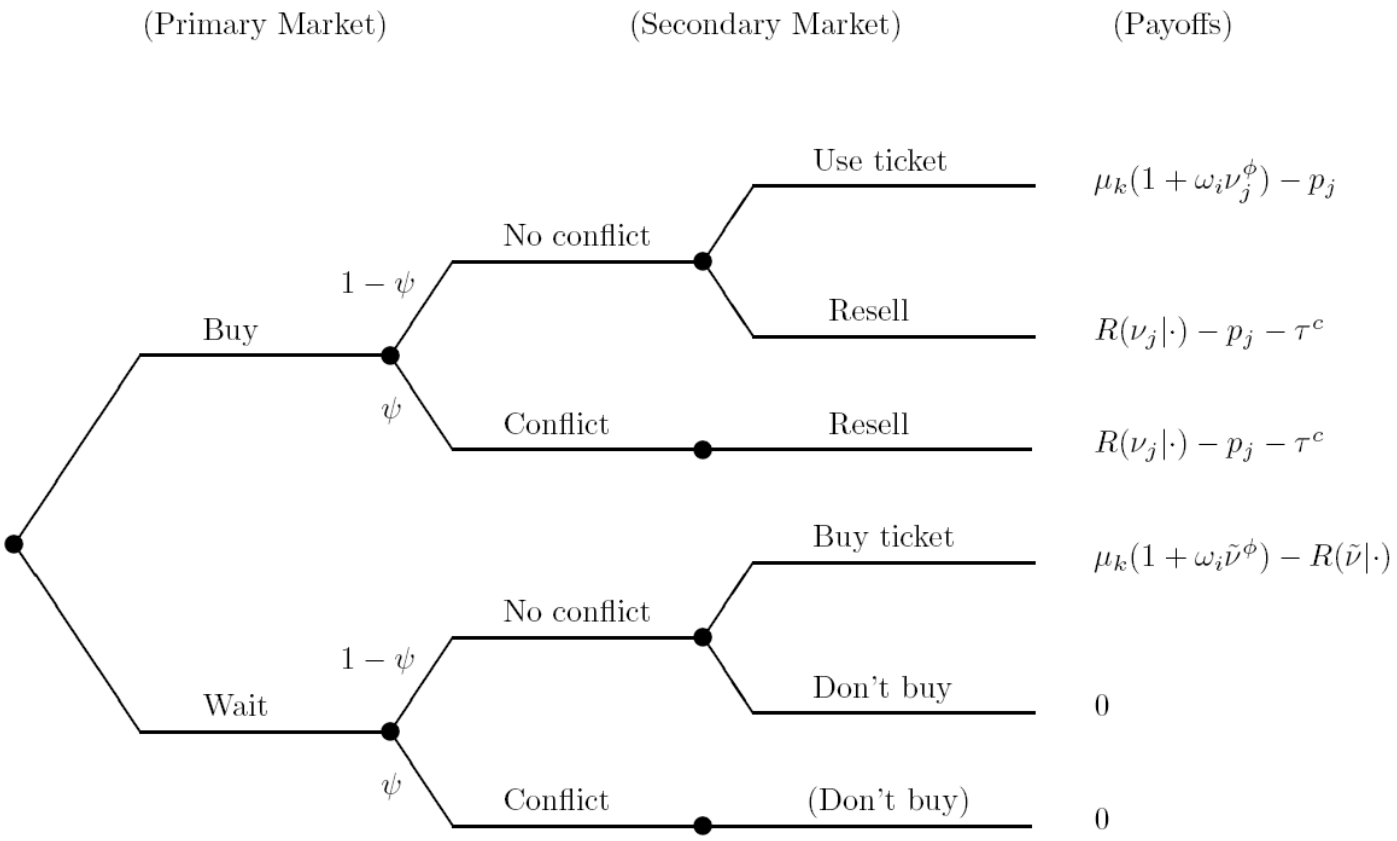
Period 2 – Resale Market

Start with an initial allocation among brokers & consumers

Sequence of auctions with random participation

No option to return to primary market

Consumers' Decision Tree



Preliminary Estimates

Parameter	Notation	Estimate	Standard Error
Consumers' transaction cost	τ^c	68.3776	0.353
Brokers' transaction cost	τ^b	11.6386	0.866
Curvature	ϕ	0.2818	0.060
Mean of $\log(\lambda)$	$\bar{\lambda}$	0.5060	0.136
SD of $\log(\lambda)$	σ_λ	0.0899	0.089
Prob(conflict)	ψ	0.0017	0.056
Prob(broker)	β	0.0065	0.015
Select event fixed effects:	μ_k		
Minimum		19.9984	
25th percentile		27.7693	
50th percentile		30.7877	
75th percentile		35.6734	
Maximum		65.6311	

- Assumes $L = 5$ (num. bidders)

Preliminary Counterfactuals

	(1) Base case	(2) Zero trans cost	(3) 10% lower trans cost	(4) No resale	(5) No brokers	(6) Double # bidders	(7) 100 bidders zero τ	(8) Best 10% re-priced
Number of tickets sold	16350.94	16369.76	16352.83	16394.91	16321.03	16400.25	15123.10	16150.10
Fraction of tickets resold	0.02	0.42	0.02	0.00	0.01	0.04	0.71	0.03
Average resale price	97.05	68.95	97.42	–	132.07	117.03	110.45	109.19
Average resale quality	0.53	0.31	0.52	–	0.52	0.53	0.50	0.52
Producer revenues	1106.56	1102.75	1106.82	1109.22	1105.11	1109.61	1053.64	1172.00
Broker profit	-2.10	0.63	-1.93	0.00	0.00	1.58	4.59	0.04
Consumer surplus	512.92	722.90	512.71	520.13	517.17	515.19	817.33	458.27
Total surplus	1617.38	1826.28	1617.61	1629.35	1622.28	1626.36	1875.56	1630.31
CS of attendees	508.37	577.37	506.45	520.13	512.70	499.36	286.35	449.98
CS of non-attendees	4.56	145.53	6.26	0	4.46	15.83	530.98	8.29

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Conclusions

- Coarse pricing in the primary market is a (the?) key driver of resale activity
  - As artists utilize more sophisticated pricing, resale activity will diminish
- Resale markets redistribute surplus in subtle ways
  - Observed levels of resale activity not large enough to make a big difference to overall welfare
  - But large reductions in transaction costs would generate substantial gains in total welfare
  - With near-frictionless resale markets, consumers who attend the events are the biggest losers