

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

## Index

---

- ABA and BAB design 52–53
- affiliated values  
 in incentive compatible auctions 25–26  
 in repeated bidding rounds 80–88, 90, 92
- aliased effects 49
- anticompetitive behavior identification 5
- assignment of units to treatments 48, 51–52
- auction bids  
 comparison with hedonic ratings 256–258  
 comparison with other measures of value 258–260  
 comparison with purchase decisions 258–260  
 comparison with taste tests 255–256
- auction bids and economic theory, validity of predictions 248–252
- auction design case studies  
 calibration of real and hypothetical bidding 229–239  
 fixed or fungible preferences 217–222, 223, 224, 225  
 gift exchange 225–228, 229, 230  
 hybrid auctions and consequential bidding 239–245  
 preference learning 196–199  
 second price auction tournaments 209–214, 215, 217  
 WTP, WTA and the auction mechanism 199–204, 205, 208, 209
- auction mechanism  
 and unengaged bidders (case study) 202, 206–208, 209  
 choosing 69–76
- auction mechanism-dependent bidding  
 behavior (case study) 199–204, 205, 208, 209
- auction theory, 19 *see also* economic theory
- balanced design 49–51
- baseball card auctions (case study) 230–237
- Bayes models 4–5
- BDM (Becker-DeGroot-Marschak) mechanism  
 17, 19–20, 69–70  
 demand revealing performance 27–8, 30–32, 33  
 relaxation of expected utility theory 24–25
- beef tenderness grading system (case study)  
 113–121, 175–186  
 analytical framework 114–115  
 conclusions 120, 121  
 data and methods 117–118  
 instructions for beef steak auction experiments 175–186  
 linking theoretical model to auction bids 116–117  
 marbling and tenderness 113–114  
 results 118–121  
 US beef quality grading system 113–114
- behavioral economists, use of information on people's values 1–2
- bidding behavior  
 factors affecting 19  
 in consequential auctions (case study) 239–245
- Bradley-Terry-Luce model 111
- business managers, eliciting values for non-market goods 1
- buyers, willingness-to-pay 1
- calibration of real and hypothetical bidding (case study) 229–239
- case studies *see* auction design case studies; valuation case studies
- censored regressions with auction bids 95–100  
 double hurdle model 98–100  
 interval censored observations 96  
 left censored observations 96  
 likelihood function 97  
 right censored observations 96  
 Tobit model 97–100  
 uncensored observations 96
- censoring, quantile regression with auction bids 101, 102

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

## 298 Index

- Christmas gift giving, welfare effects (case study) 225–228, 229, 230
- cluster analysis 108–109
- coherent arbitrariness 265–267
- collective auction 69, 70
- commitment costs 43–44
- conditional mean regression, comparison with quantile regression 100–102
- confounding factors 47–49, 50, 52–54
- conjoint analysis 4–5
- consequential bidding (case study) 239–245
- context and control issues 53–54, 57–60
- balance between 174–175
- balance in experimental auctions 6–16
- context-dependent preferences 238–239
- contingent valuation 4
- control and context issues 53–54, 57–60
- balance between 174–175
- balance in experimental auctions 6–16
- controversial goods case study (demand for GM food) 154–161, 163, 191–195
- conclusions 162–163
- EU stance on GM food 154–155
- experiment 155–157
- instructions for GM food auction 191–195
- results 157–161, 162
- US stance on GM food 154–155
- use of biotechnology in food production 154
- controversial goods case study (food from animals treated with growth hormones) 169–174
- bovine somatotropin (bST) 169–170
- conclusions 173–174
- experimental design 170–171
- health controversy 169–170
- porcine somatotropin (pST) 169–170
- results and discussion 171–173
- controversial goods case study (irradiation of food) 163–169
- conclusions 167–169
- experiment 163–165
- results 165–167, 168
- welfare effects of anti-technology messages 167–169
- convergent validity 235, 255–261
- auction bids and hedonic ratings 256–258
- auction bids and other measures of value 258–260
- auction bids and purchase decisions 258–260
- auction bids and taste tests 255–256
- external validity 235, 261
- cumulative prospect theory 42–43
- CVM-X method 237
- Dasgupta and Maskin mechanism 89
- data analysis
- censored regressions with auction bids 95–100
- cluster analysis 108–109
- elementary statistical analysis 95, 112
- factor analysis 106–108
- market share simulation 109–112
- panel data regression with auction bids 103–106
- quantile regression with auction bids 100–102, 103
- demand, effects of price/availability of
- substitutes and complements 79–80, 250
- demand reduction 53, 76–80
- demand revealing, performance of incentive compatible mechanisms 27–32, 33
- diminishing marginal utility 76–80, 249
- discrete choice models 4–5
- double hurdle model 98–100
- Dutch auctions, efficiency 28
- eBay 62–63
- econometric techniques 4–5
- economic theory, evidence for predictions
- demand is affected by price/availability of substitutes and compliments 250
- diminishing marginal utility 249
- factors affecting WTP and WTA 251–252
- market price increases as demand increases 248–249
- more is preferred to less 249–250
- testing reliability at individual level 5
- the value of a dollar to a person is exactly \$1.00 252
- values will rise (fall) with positive (negative) information 250–251
- see also* auction theory
- economic value of choices 1
- economists, use of information on people's values 1–2
- efficiency of design 49–51
- endowment effect 262–263
- case study 199–204, 205, 208, 209
- endowment versus full bidding 65–68
- English auctions 17, 19–20, 24–25, 69
- demand revealing performance 27–32, 33
- ex-post regression analysis 53
- exchange institutions 1
- expected utility theory 5
- relaxation of the independence axiom 24–25
- experimental auctions
- active market environment 3–4

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

- advantage over other value elicitation methods 3–5
- applications 6, 7–14
- control/context balance 6–16
- description of heterogeneity in valuations 4–5
- determination of individual willingness to pay 4
- early work 5
- elicitation of homegrown values 6–16
- exchange mechanism 3–4
- incentive compatible mechanisms 3–4, 16–17
- induced value experiments 5–6, 15–16
- purpose 5
- two basic strategies 16
- valuation of non-market goods 3–4
- valuations are directly obtained 3–4
- see also* English auctions; BDM
  - mechanism; collective auctions; Dutch auctions;  $n$ th price auctions; random  $n$ th price auctions; second price auctions; Vickrey's second price auctions
- experimental auctions (conducting)
  - affiliation of values in repeated bidding rounds 80–88, 90, 92
  - avoiding misperceptions in participants 62–65
  - BDM mechanism 69–70
  - best practices 62
  - choosing an auction mechanism 69–76
  - collective auction 69, 70
  - Dasgupta and Maskin mechanism 89, 90
  - demand reduction 76–80
  - diminishing marginal utility 76–80
  - endowment versus full bidding 65–68
  - English auction 69
  - field substitutes 79–80
  - focus groups 62
  - initial qualitative study 62
  - learning in repeated bidding rounds 80–88, 90, 92
  - multiple good valuation 76–80
  - negative values 92–94
  - $n$ th price auction 69
  - random  $n$ th price auction 69, 70
  - repeated bidding round auctions 80–88, 90, 92
  - second price auction 69
  - training and practice for participants 62–65
- experimental auctions (preliminaries)
  - experimental design 47–54
  - sample size determination 55–57
  - study objectives 46–47
  - study setting and context (field versus laboratory) 57–60
  - use of students as subjects 46–47
- experimental design 47–54
  - ABA and BAB design 52–53
  - aliased effects 49, 50
  - assignment of units to treatments 48, 51–52
  - balanced design 49–51
  - common expectation among participants 53
  - confounding factors 47–49, 50, 52–54
  - control of design variables 47–51
  - definition of experimental unit 51–52
  - demand reduction 53
  - efficiency of design 49–51
  - ex-post regression analysis 53
  - extraneous variables 52–54
  - finding designs 51
  - fractional factorial design 48–51
  - full factorial design 47–48, 49
  - issues of control and context 53–54
  - main-effects only design 48–51
  - orthogonal design 49–51
  - randomization 48, 52
  - replication of treatments 51–52
  - software 51
  - within-subject design 48, 52–53
- experimental unit, definition 51–52
- external validity 261
- face validity of data 6–16
- factor analysis 106–108
- farm financial records valuation (case study) 149–154, 186–190
  - benefits of farm recordkeeping 149–150
  - conclusions 152–154
  - data and methods 150–151
  - instructions for financial records auction 186–190
  - results 151–152, 153
- field substitutes, effects of 79–80, 250
- 'first choice' or 'highest utility' rule 110–111
- first price auction 23–24
  - efficiency 28
- fixed or fungible preferences (case study) 217–222, 223, 224, 225
- focus groups 62
- food from animals treated with growth hormones (case study) 169–174
  - bovine somatotropin (bST) 169–170
  - conclusions 173–174
  - experimental design 170–171
  - health controversy 169–170
  - porcine somatotropin (pST) 169–170
  - results and discussion 171–173

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

300

Index

- forecasting market share of a new product
  - (case study) 119, 137–141, 175–186
  - calculating market share 137–139
  - data and methods 119, 139
  - instructions for beef steak auction experiments 175–186
  - results 139–141
- fractional factorial design 48–51
- fresh food with multiple quality attributes
  - (case study) 141–149
  - experimental design 142–145
  - results and discussion 145–149
  - study objectives 141
  - summary 149
- full bidding versus endowment 65–68
- full factorial design 47–48, 49
- future research in experimental auctions
  - ability to forecast retail behavior 272–273
  - comparison with choice-based methods 273–274
  - diversification of purposes and contexts 7–14, 269–270
  - experimental design issues 274–275
  - interaction of emotions and auction institutions 276–277
  - personality traits and bidding behavior 276
  - potential for pattern recognition 275–276
  - prediction markets 277–278
  - rationality of statements of value 270–271
  - relationship to real world behavior 271–272
  - testing economic theory 274
- gift exchange, welfare effects (case study) 225–228, 229, 230
- GM (genetically modified) food demand (case study) 154–161, 163, 191–195
  - conclusions 162–163
  - EU stance on GM food 154–155
  - experiment 155–157
  - instructions for GM food auction 191–195
  - results 157–161, 162
  - US stance on GM food 154–155
  - use of biotechnology in food production 154
- GM food tolerance (case study) 129–137
  - conclusions 136–137
  - controversy over GM foods 129–130
  - experiment 130–134
  - GM labelling and tolerance standards 129–130
  - results 134–136
- hedonic ratings, comparison with auction bids 256–258
- homegrown values elicitation 6–16
  - explanation of the dominant strategy 33
  - validity of measurements 247–248
- hybrid auctions and consequential bidding
  - (case study) 239–245
- hypothetical bidding, tendency to overstate
  - (case study) 229–239
- incentive compatible auctions 19–20
  - assumptions underlying the theory 24–27
  - BDM (Becker-DeGroot-Marschak) mechanism 19–20
  - bidders' goals outside experimental context 26–27
  - effects of affiliated values 25–26
  - English auction 19–20
  - explanation of the dominant strategy 33
  - $n$ th price auction 19–20
  - random  $n$ th price auction 19–20
  - relaxation of expected utility theory 24–25
  - second price auctions 19–20
  - separate what people say from what they pay 19–20
  - situations when not incentive compatible 24–27
  - theory of 20–27
  - Vickrey's second price auction 19–23
  - weakly dominant strategy 19–20
- incentive compatible mechanisms 3–4
  - BDM (Becker-DeGroot-Marschak) mechanism 17
  - demand revealing performance 27–32, 33
  - English auction 17
  - random  $n$ th price auction 17
  - second price auction 16–17
  - testing in induced value studies 27–32, 33
  - Vickrey auction 16–17
  - Vickrey  $n$ th price auction 17
- induced value auctions, testing of incentive compatible mechanisms 27–32, 33
- induced value experiments 5–6, 15–16
- informing policy case study (beef tenderness grading system) 113–121, 175–186
  - analytical framework 114–115
  - conclusions 120, 121
  - data and methods 117–118
  - instructions for beef steak auction experiments 175–186
  - linking theoretical model to auction bids 116–117
  - marbling and tenderness 113–114
  - results 118–121
  - US beef quality grading system 113–114
- informing policy case study (tolerance for GM food) 129–137
  - conclusions 136–137

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

- controversy over GM foods 129–130
- experiment 130–134
- GM labelling and tolerance standards 129–130
- results 134–136
- informing policy case study (valuing safer food) 121–127, 128, 129
  - conclusions 129
  - experiment 124–125
  - prevalence of food-borne diseases 121–122
  - results 126–127, 128, 129
  - study objectives 122–124
- insincere bidding, and auction treatment (case study) 209–214, 215, 217
- irradiation of food (case study) 163–169
  - conclusions 167–169
  - experiment 163–165
  - results 165–167, 168
  - welfare effects of anti-technology messages 167–169
- learning in repeated bidding rounds 80–88, 90, 92
- likelihood function, censored regressions with auction bids 97
- logit model 111
- main-effects only design 48–51
- market price increases as demand increases (theory) 248–249
- market segmentation, effects of valuation heterogeneity 5
- market share simulation 109–112
  - Bradley-Terry-Luce model 111
  - ‘first choice’ or ‘highest utility’ rule 110–111
  - logit model 111
  - money-metric utility 110
  - share of preference model 111
- marketing case study (forecasting market share) 119, 137–141, 175–186
  - calculating market share 137–139
  - data and methods 119, 139
  - instructions for beef steak auction experiments 175–186
  - results 139–141
- marketing case study (fresh food with multiple quality attributes) 141–149
  - experimental design 142–145
  - results and discussion 145–149
  - study objectives 141
  - summary 149
- marketing case study (value of farm financial records) 149–154, 186–190
  - benefits of farm record keeping 149–150
  - conclusions 152–154
  - data and methods 150–151
  - instructions for financial records auction 186–190
    - results 151–152, 153
  - marketing experts, use of information on people’s values 1–2
  - mixed logit models 4–5
  - money-metric utility 110
  - more is preferred to less (theory) 249–250
  - multiple good valuation 76–80
- negative values, effects of 92–94
- non-expected utility behavior 41–43
- non-market goods
  - valuation in experimental auctions 3–4
  - value elicitation 1–2
- n*th price auctions 19–20, 69
  - non-expected utility preferences 24–25
  - see also* random *n*th price auctions
- off-the-margin bidders
  - and auction mechanism (case study) 202, 206–208, 209
  - effects of tournament auction (case study) 209–214, 215, 217
- orthogonal design 49–51
- panel data regression with auction bids 103–106
  - individual-specific model 88, 105–106
  - one-way fixed and random effects models 104–105
  - random coefficients model 106
  - two-way fixed and random effects models 105
- parallel-forms reliability 253–254, 255
- participants
  - affiliation of values in repeated bidding rounds 80–88, 90, 92
  - avoiding misperceptions in 62–65
  - create common expectation 53
  - explanation of weakly dominant strategy 33
  - influenced by being watched 60
  - learning in repeated bidding rounds 80–88, 90, 92
  - negative values 92–94
  - training and practice 62–65
  - use of students as subjects 46–47
- policymakers, eliciting values for non-market goods 1 *see also* informing policy case studies
- prediction markets 277–278

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

## 302 Index

- preference learning for unfamiliar goods (case study) 196–199
- preference reversals 263–265
  - case study 217–222, 223, 224, 225
- preferences
  - construction 218
  - fixed or fungible (case study) 217–222, 223, 224, 225
  - stability (case study) 217–222, 223, 224, 225
- price discrimination models, effects of
  - valuation heterogeneity 5
- psychologists, use of information on people's values 1–2
- public policy, determination of welfare effects
  - 5 *see also* informing policy case studies
- purchase decisions, comparison with auction bids 258–260
- quantile regression with auction
  - bids 100–102, 103
  - censoring 101, 102
  - comparison with conditional mean regression 100–102
- random *n*th price auctions 17, 19–20, 69, 70
  - demand revealing performance 27–28, 30–32, 33
  - see also* *n*th price auctions
- random parameter models 4–5
- randomization 52
- rank-dependent expected utility theory 24–25, 42
- reliability
  - consistency across context 254–255
  - consistency across repeated rounds 253
  - definition 252
  - of experimental auction measurements 252–255
  - parallel-forms reliability 253–254, 255
  - relation to validity 252
  - test-retest 252–253
- repeated bidding round auctions 80–88, 90, 92
  - affiliation of values 80–88, 90, 92
  - consistency across rounds 253
  - learning in 80–88, 90, 92
- replication of treatments 51–52
- revealed preference methods, implicit
  - values 2–3
- risk, definition 37
- risk aversion 39–41
- risk perception 39–41
- risk preference 39–41
- risk premium (WTP to avoid a risky good) 40
- sample size determination 55–57
  - comparison of means from two independent samples 55–56
  - distribution of a valuation in the population 56–57
- second price auctions 16–17, 19–20, 69
  - demand revealing performance 27–32, 33
  - non-expected utility preferences 24–25
  - see also* Vickrey's second price auction
- second price auction tournaments (case study) 209–214, 215, 217
- sellers, willingness to accept 1
- share of preference model 111
- stated preference methods 2–3
  - unreliability of values elicited 3
- students, use as subjects 46–47
- study objectives 46–47
- study setting and context (field versus laboratory) 57–60
  - participants influenced by being watched 60
- substitute availability, effects on
  - demand 79–80, 250
- taste tests, comparison with auction
  - bids 255–256
- test-retest reliability 252–253
- Tobit model 97–100
- tournament auction
  - comparison with standard auction (case study) 209–214, 215, 217
  - demand revelation (case study) 209–214, 215, 217
  - effects on insincere bidding (case study) 209–214, 215, 217
- unengaged bidders
  - and auction mechanism (case study) 202, 206–208, 209
  - effects of tournament auction (case study) 209–214, 215, 217
- unfamiliar goods, preference learning (case study) 196–199
- validity
  - definition 247
  - external 235, 261
- validity of experimental auctions 247–248
  - anomalies 261–267
  - auction bids and economic theory 248–252
  - coherent arbitrariness 265–267
  - convergent validity 235, 255–261
  - endowment effect 262–263
  - measurement of homegrown values 247–248
  - object of measurement 247–248

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

## Index

303

- preference reversals 263–265
- reliability of measurements 252–255
- WTP versus WTA disparity 262–263
- valuation
  - assumption that economic value does exist 34
  - WTA (willingness to accept) 34
  - WTP (willingness to pay) 34
- valuation case studies
  - balance between control and context 174–175
  - controversial goods I (demand for GM food in three countries) 154–161, 163, 191–195
  - controversial goods II (irradiation of food) 163–169
  - controversial goods III (food from animals treated with growth hormones) 169–174
  - informing policy I (beef tenderness grading system) 113–121, 175–186
  - informing policy II (valuing safer food) 121–127, 128, 129
  - informing policy III (tolerance for GM food) 129–137
  - marketing I (forecasting market share of a new product) 119, 137–141, 175–186
  - marketing II (fresh food with multiple quality attributes) 141–149
  - marketing III (value of farm financial records) 149–154, 186–190
- valuation case studies (appendices)
  - instructions for beef steak auction experiments 175–186
  - instructions for financial records auction 186–190
  - instructions for GM food auction 191–195
- valuation heterogeneity, need to understand 4–5
- valuation in a dynamic environment with uncertainty, limited information and irreversibility
  - commitment costs 43–44
  - dynamic WTA 44
  - dynamic WTP 43–44
- valuation under certainty 34–37
  - producer profit maximization 36
  - WTA (willingness to accept) 34–35, 36–37
  - WTP (willingness to pay) 34–36
- valuation under uncertainty 37–43
  - cumulative prospect theory 42–43
  - effects of new information 38–39
  - non-expected utility behavior 41–43
  - rank-dependent expected utility theory 42
  - risk (definition) 37
  - risk aversion 39–41
  - risk perception 39–41
  - risk preference 39–41
  - risk premium 40
  - threats with low-probability and high damage 41–43
  - WTA (willingness to accept) 38
  - WTP (willingness to pay) 37–38
  - WTP to avoid a risky outcome 40
  - WTP to obtain a risky good 39–40
- value elicitation
  - applications for information 1–2
  - non-market goods 1–2
  - WTA (willingness to accept) 34
  - WTP (willingness to pay) 34
- value elicitation methods
  - revealed preference 2–3
  - stated preference 2–3
- value measures, comparison with auction bids 258–260
- values theory, rise (fall) with positive (negative) information 250–251
- valuing safer food (case study) 121–127, 128, 129
  - conclusions 129
  - experiment 124–125
  - prevalence of food-borne diseases 121–122
  - results 126–127, 128, 129
  - study objectives 122–124
- variables
  - control of 47–51
  - extraneous 52–54
- Vickrey, William 16–17, 19
- Vickrey's *n*th price auction 17
- Vickrey's second price auction 16–17, 19–20
  - comparison with first price auction 23–24
  - demonstration of incentive compatibility 20–23
  - formal utility maximization framework 20–21
  - intuitive, heuristic framework 21–23
  - tournaments (case study) 209–214, 215, 217
  - see also* second price auctions
- weakly dominant strategy
  - explanation to participants 33
  - in incentive compatible auctions 19–20
  - in second price auctions 16–17
- willingness to accept *see* WTA
- willingness to pay *see* WTP
- within-subject design 48, 52–53

Cambridge University Press

978-0-521-67124-8 - Experimental Auctions: Methods and Applications in Economic and Marketing Research

Jayson L. Lusk and Jason F. Shogren

Index

[More information](#)

## 304 Index

- WTA (willingness to accept) 1, 38  
 dynamic 44  
 valuation under certainty 34–35, 36–37  
 value measure 34  
 when to use 34–35
- WTP (willingness to pay) 1, 37–38  
 determination of 4  
 dynamic 43–44  
 overstatement in hypothetical bidding (case study) 229–239
- to avoid a risky good (risk premium) 40  
 to obtain a risky good 39–40  
 valuation under certainty 34–36  
 value measure 34  
 when to use 34–35
- WTP and WTA  
 disparity 262–263  
 factors affecting 251–252  
 gap and the auction mechanism (case study) 199–204, 205, 208, 209