Cambridge University Press 978-0-521-85516-7 - 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 - 245preference 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

297

Cambridge University Press 978-0-521-85516-7 - 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 - 169convergent 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 - 260auction 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 978-0-521-85516-7 - Experimental Auctions: Methods and Applications in Economic and Marketing Research Jayson L. Lusk and Jason F. Shogren Index More information

#### Index

299

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 - 17induced 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 nth price auction 69 random nth 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 - 190results 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 978-0-521-85516-7 - 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 - 130results 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 - 27effects of affiliated values 25-26 English auction 19-20 explanation of the dominant strategy 33 nth price auction 19-20 random nth 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 nth price auction 17 second price auction 16-17 testing in induced value studies 27-32, 33 Vickrey auction 16-17 Vickrey nth 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 978-0-521-85516-7 - Experimental Auctions: Methods and Applications in Economic and Marketing Research Jayson L. Lusk and Jason F. Shogren Index More information

#### Index

301

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 - 169learning 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 nth price auctions 19-20, 69 non-expected utility preferences 24-25 see also random nth 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 978-0-521-85516-7 - 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 nth price auctions 17, 19-20, 69, 70 demand revealing performance 27-28, 30-32, 33 see also nth 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 - 248object of measurement 247-248

Cambridge University Press 978-0-521-85516-7 - 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 nth price auction 17 Vickrey's second price auction 16-17, 19 - 20comparison with first price auction 23 - 24demonstration of incentive compatibility 20 - 23formal utility maximization framework 20 - 21intuitive, 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 978-0-521-85516-7 - 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