

## Chen He

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CONTACT INFORMATION	Department of Econometrics and OR Tilburg University Warandelaan 2 5037 AB Tilburg, the Netherlands	Office: +31 13 466 2430 Mobile: +31 64 356 0863 Email: c.he@uvt.nl
PERSONAL INFORMATION	Gender: Male Nationality: Chinese Date of birth: July 16, 1988 Languages: Chinese (Native or bilingual proficiency), English (Full professional proficiency), Dutch (Elementary Proficiency) Hobbies: Piano (Chinese Musician Association: level 8 (highest level: 10)), Badminton	
RESEARCH INTERESTS	empirical industrial organization, structural econometrics, applied microeconomics, quantitative marketing	
EDUCATION	Tilburg University, Tilburg, the Netherlands  Ph.D. in Economics, 2014-2018 (expected) <ul style="list-style-type: none"><li>Advisors: Tobias J. Klein and Bart J. Bronnenberg</li></ul> Research Master in Economics, 2012-2014 <ul style="list-style-type: none"><li>Thesis: <i>A Model of Advertising Demand in a Two-Sided Market</i></li><li>Advisor: Tobias J. Klein</li></ul> BSc in Economics, 2009-2012 <ul style="list-style-type: none"><li>Thesis: <i>Stochastic No-Ponzi-Game Condition and Government Debt Dynamics</i></li><li>Advisor: Lex Meijdam</li><li>Cum laude</li></ul>	
RESEARCH EXPERIENCE	Research Assistant Department of Econometrics and Operations Research, Tilburg University Supervisor: Jaap Abbring	October 2013 to August 2014
HONORS AND AWARDS	Excellent Scholarship for best undergraduate students, Tilburg University CentER Honors Program for best undergraduate students, Tilburg University Koopmans Scholarship for graduate students, CentER, Tilburg University Research funding for Research Assistantships, CentER, Tilburg University	2012 2012 2012–2014 2013–2014
WORKING PAPERS	1. Optimizing Online Sales using Targeted Advertising (Chen He) [ <b>Job Market Paper</b> ] <b>Abstract</b> Advertising can affect consumer behavior at the consideration and the purchasing stage. This paper uses high frequency data on TV and radio advertising from different channels together with website traffic and online sales data to measure the effects of advertising. The high frequency nature of the data allows me to cleanly identify these effects and to show that they depend on the channel on which the firm advertises. I find positive effects of advertising on consideration and conversion that last for up to 4 hours. I then point out that the observed increase in the conversion rate could be due to the fact that those who are motivated to visit the website through advertisements are different from those who usually visit. The former ones have a higher probability to buy given that they	

visit. Ignoring this and studying consideration and conversion separately could result in an underestimated conversion rate and thus a suboptimal advertising strategy, in particular when advertising on different channels reaches different audiences. Motivated by this, I propose and estimate a new integrated model of consideration and conversion. In the model, consumers first decide whether or not to visit the website. This decision is driven by an option value. Importantly, this option value is allowed to depend on unobserved consumer characteristics. Therefore, unlike standard discrete choice models, the model allows consumers who visited the website to have a higher probability of buying than those who did not visit the website and consequently it can generate the observed pattern in the data even if advertising had no direct effect on consumers once they visit the website. My estimates show that one would overestimate both the effects of advertising and the cost of visiting the website if one would ignore this selection. Finally, I show that shifting advertising across channels could lead to increased sales.

2. Advertising as a Reminder: Evidence From the Dutch State Lottery (Chen He and Tobias Klein)

**Abstract** We use high frequency data on TV and radio advertising together with online sales data for lottery tickets to measure the short run effects of advertising. Advertisements remind consumers to buy a ticket. We find the effects of advertising to be strong and to last up to about 4 hours. They are the bigger the less time there is until the draw. Based on these findings, we point out a tradeoff the firm faces. On the one hand, if it allocates all the advertising budget very late, then it may not reach certain consumers, for instance because they will not watch TV on these days; on the other hand, if it spreads advertising expenditures out over time in order to reach more consumers, then it may forego the possibility to effectively spend the money at later points in time. This means that total sales will crucially depend on the dynamic advertising strategy and that it would be valuable to assess the dependence of sales on counterfactual advertising strategies. For this, we develop a tractable structural model of consumer behavior. At a given point in time, consumers either buy a ticket for the following draw or postpone the decision to do so, with the possibility that they then either forget to buy a ticket or consciously decide not to do so. This means that in our model, advertisements act as a reminder. Our counterfactual experiments suggest that the firm puts too much weight on advertising early and spreading advertisements over time. Shifting advertising expenditures to the days before the draw could be a strategy to increase sales for a given advertising budget.

PRESENTATIONS	Structural Econometrics Group lunch seminar, Tilburg Univeristy GSS workshop, Tilburg University Structural Econometrics Group lunch seminar, Tilburg Univeristy	February 2015 May 2016 October 2016
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TEACHING EXPERIENCE	Teaching Assistant 30J209 - Statistics 2 for International Business Administration Instructors: Pavel Cizek and Bettina Drepper Undergraduate Level Teaching Assistant 230316 - Empirical Research in Business (CentER) Instructors: Martin Salm and Bettina Drepper Graduate/Ph.D. Level	2014–2016     2014-2016
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SOFTWARE SKILLS Matlab, Stata, R, SPSS

SERVICE

Organizer of the Structural Econometrics Group lunch seminars, Tilburg University,  
2016 –

REFERENCES

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