Friday, October 9th – Gleacher Center Room 100

12:00 pm – 12:45 pm  Lunch

12:45 pm – 1:00 pm  Welcome

1:00 pm – 2:00 pm  Session 1

Counterfeiter as Foes or Friends? – Sales Implications of Counterfeiting
Yi Qian (Northwestern University)

This paper uses a natural experiment to estimate the differential impacts of counterfeiting on the sales of branded products of various quality levels under weak intellectual property rights. I collect new product-line level panel data from Chinese shoe companies from 1993-2004. Exploiting the discontinuity of government enforcement efforts for the footwear sector in 1995 and the differences in authentic companies’ relationships with the government, I identify heterogeneous effects of counterfeit entry on sales of authentic products of four quality levels. In particular, counterfeits have both advertising effects for the brand and substitution effects for authentic products. The advertising effect dominates substitution effect for high-end authentic product sales, and the substitution effect outweighs advertising effect for low-end product sales. I build a theoretical model with multi-product producers to generalize such impacts due to counterfeits. The aforementioned heterogeneous effects of counterfeits on branded products are also discovered in lab experiments where the presence of counterfeits is randomly assigned to a subsample of respondents. Responses allude to counterfeit’s functions in increasing brand awareness and affinity, as well as stealing demand of lower-end shoes.

Discussant: Meghan Busse (Northwestern)

2:00 pm – 3:00 pm  Session 2

A Structural Model of Sales-Force Compensation Dynamics: Estimation and Field Implementation
Sanjog Misra (Rochester University) and Harikesh Nair (Stanford University)

We present a framework that can help evaluate the dynamic effects of compensation contracts on sales-agent output, and its impact on firms' revenues. The model is flexible enough to handle quotas and bonuses, output-based commission schemes, as well as "ratcheting" of compensation based on past performance, all of which are ubiquitous in real-world contracts. We apply the model to a rich dataset that comprises the complete details of sales and compensation plans for a set of 87 sales-people for a period of
3 years at a large contact-lens manufacturer in the US. We use the model to evaluate profit-improving, theoretically-preferred changes to the extant compensation scheme. These recommendations were then implemented at the focal firm. Agent behavior and output under the new compensation plan is found to change as predicted. The new plan resulted in a 9% improvement in overall revenues, which translates to about $0.98 million incremental revenues per month, indicating the success of the field-implementation. The results bear out the face validity of dynamic agency theory for real-world compensation design. More generally, our results fit into a growing literature that illustrates that dynamic programming-based solutions, when combined with realistic empirical specifications of behavior, can help significantly improve marketing decision-making, and firms' profitability.

Discussant: K Sudhir (Yale)

3:00 pm – 3:30 pm Break

3:30 pm – 4:30 pm Session 3

Why are Bad Products So Hard to Kill?
Duncan Simester and Juanjuan Zhang (MIT)

It is puzzling that firms often knowingly continue to invest in product development projects even after receiving damning customer feedback. We argue that bad products are hard to kill because firms face an inherent conflict when designing managers’ incentives. Rewarding success encourages managers to forge ahead even when demand is low. To prevent managers from ignoring signs of low demand, the firm must also reward decisions to kill bad products. However, rewarding failure effectively undermines the rewards for success. The inability to resolve this tension forces the firm to choose between paying an even larger bonus for success or accepting continued investment in low-demand products. We explore the boundaries of this argument by evaluating different motivations for rewarding success, and comparing how the timing of demand information affects the outcome.

Discussant: Dmitri Kuksov (Wash U)

4:30 pm – 5:30 pm Session 4

Compensation and Peer Effects in Competing Sales Terms
Tat Y. Chan, Jia Li, and Lamar Pierce (Washington University in St. Louis)

We use Chinese cosmetic sales transaction data to examine how compensation and firm boundaries influence worker productivity spillovers and competition strategies. Implementing improved methodology, we find strong peer effects among workers, demonstrating important new findings. First, we find spillovers are positive under team-based compensation while negative under individual-based compensation. Second, we find peer effects across firm boundaries that depend on compensation system. Third, we find strategic price discounting and customer focus in response to high-ability peers within individual-based counters. Our results suggest that heterogeneity in worker productivity enhances team performance under team-based compensation while hurting individual-based firms.

Discussant: Raphael Thomadsen (UCLA)

5:30 pm Dick Wittink Award and QME Editor Announcement
Gleacher Center, Room 100
6:00 pm Reception/Dinner
Gleacher Center, Room 621
Saturday, October 11

8:00 am – 9:00 am  Breakfast

9:00 am – 10:00 am  Session 1

**Handicapping, Reverse Handicapping, and Random Handicapping in Multi-Period Sales Contests**

Robert Ridlon (Sungkyunkwan University)

A fundamental result of contest theory is that evenly matched contests are fought most intensely, implying that a contest designer maximizes effort from each player by artificially boosting the chances of the underdog. Such “handicapping” is credited with making sports contests more exciting, improving efficiency in internal labor markets, increasing effort from students competing to enter college, and raising revenues in auctions. I apply this to a two-period sales contest where the only information available on a salesperson’s ability is performance in the first period. If player abilities are sufficiently different, I find that favoring the first period loser in the second period increases total effort over both periods. But if player abilities are sufficiently similar, I find the opposite result that total effort is maximized by committing to a “reverse handicap” that favors the first period winner. In addition, the sales manager can increase total sales effort under certain conditions by adopting a “random handicap” strategy, and favor either employee. If the goal of the contest is to most accurately identify the best employee rather than maximize effort (e.g. promotions), then committing to a reverse handicap is always optimal.

Discussant: Ram Rao (UT Dallas)

10:00 am – 11:00 am  Session 2

**Retail Advertising Works! Measuring the Effects of Advertising on Sales via a Controlled Experiment on Yahoo!**

Randall Lewis (MIT) and David Reiley (University of Arizona)

A randomized experiment performed in cooperation between Yahoo! and a major retailer allows us to measure the effects of online advertising on sales. We exploit a match of over one million customers between the databases of Yahoo! and the retailer, assigning them to treatment and control groups for an online advertising campaign for this retailer and then measuring each individual’s weekly sales at this retailer, both online and in stores. By combining a controlled experiment with panel data on purchases, we find statistically and economically significant impacts of the advertising on sales. The treatment effect persists for weeks after the end of an advertising campaign, and we estimate the total effect on revenues to be more than eleven times the retailer’s expenditure on advertising during the study. Additional results explore differences in the number of advertising impressions delivered to each individual, age and gender demographics, online and offline sales, and the effects of advertising on those who click the ads versus those who merely view them. Our results provide the best measurements to date of the effectiveness of image advertising on sales, and we shed light on important questions about online advertising in particular.

Discussant: Jennifer Brown (Northwestern)
11:00 am – 11:30 am  Break

11:30 am – 12:30 pm  Session 3

*How Much Do Consumers Know About the Quality of Products? Evidence from the Diaper Market*
Andrew Ching (University of Toronto), Tülin Erdem (New York University), and Michael Keane (University of Technology Sydney and Arizona State University)

The majority of applied brand choice studies estimate the quality of brands by assuming that consumers have complete information, and use revealed preference data to recover the vertically differentiated quality levels. Nevertheless, it is common that consumers do not know the quality of all brands available to them, and just choose a small subset of brands that they are familiar with, even though the actual quality of other brands could be higher. To address this problem, academic research in marketing and economics has extended traditional static brand choice models to explicitly allow for consumer learning. However, one common criticism of this approach is that the exact structure imposed (e.g., consumers are assumed to be Bayesian learners) may not be a good proxy for the actual learning behavior. As a result, the estimates obtained from these structural models could be biased due to model misspecification. Moreover, this type of structural models is difficult to estimate for reasons involving both computational burdens, as well as challenging empirical identification issues.

In this paper, we provide an alternative way to examine how much consumers know about the quality of durable products. Our key insight is that for products depreciate over time and require repeated purchases, observed individuals' inter-purchase spells provide an objective measure of brand qualities in terms of durability. This is simply because the higher the durability, the longer a product can last in general, and hence its observed inter-purchase spells should also be longer. Based on this argument, we use a scanner panel data set for diapers to estimate both the subjective perceived brand qualities (based on revealed preference data) and the objective brand qualities (based on brand-specific inter-purchase spells). Our estimates allow us to compare these two measures of qualities and infer the extent of incomplete information faced by parents. With our results, we can address questions such as: Do parents make the right choice in the diapers category? Can they save some money by switching from a store brand to a national brand, or the other way around? How much savings can they get?

Discussant: Matt Osborne (US Department of Commerce)

12:30 pm – 1:30 pm  Lunch

1:30 pm – 2:30 pm  Session 4

*Estimating Durable Goods Adoption Decisions from Stated Preference Data*
Jean-Pierre Dubé, Günter J. Hitsch, and Pranav Jindal (University of Chicago)

We propose a new approach to estimating a durable goods adoption model from survey data. Our approach avoids some of the strong assumptions that have been made in the recent durable goods adoption literature, particularly regarding the consumers' discount function and expectations formation process.

Discussant: Wes Hartmann (Stanford University)
2:30 pm – 3:30 pm Session 5

**Online Demand Under Limited Consumer Search**
Jun B. Kim (UCLA), Paulo Albuquerque (Rochester), and Bart Bronnenberg (Tilburg)

Using aggregate product search data from Amazon.com, we jointly estimate consumer information search and online demand for durable goods. To estimate demand and search primitives, we introduce an optimal sequential search process into a model of choice and treat the observed market-level product search data as aggregations of individual-level optimal search sequences. The model builds on the dynamic programming framework by Weitzman (1979) and combines it with a choice model. At the individual level, the model has several attractive properties including closed-form expressions for the probability distribution of alternative search sets and breaking the curse of dimensionality. Using numerical experiments, we verify the model’s ability to identify consumer tastes and search cost from product search data. Empirically, the model is applied to the camcorder online market and is used to answer manufacturer questions about market structure and competition, and to address policy maker issues about the effect of recommendation tools on consumer surplus outcomes. We find that consumer search for camcorders is typically limited to about 10 choice options, and that this affects the estimates of own and cross elasticities. We also find that the vast majority of the households benefit from the Amazon.com’s product recommendations via lower search costs.

Discussant: Chad Syverson (University of Chicago)

3:30 pm – 4:00 pm Break

4:00 pm – 5:00 pm Session 6

**A Dynamic Demand Model with Consideration Set Formation**
Stephan Seiler (London School of Economics)

Prices for grocery items differ across stores and time because of promotion periods. Consumers therefore have an incentive to search for the lowest price. When a product is purchased infrequently though, the hassle of checking the price on every shopping trip might outweigh the benefit of spending less. I propose a structural model for storable goods, that takes inventory holdings and search into account. The model is estimated using data on laundry detergent purchases. I find that search costs play a large role in explaining purchase behavior, with a large proportion of consumers not being aware of the price of detergent in a given time period. Trip characteristics such as the amount of money spent on other items and the number of products purchased in the same product category cause the search cost to vary across shopping trips. I also compute between-store price elasticities and find that temporary promotions have little impact on competing stores. There is no post-promotion dip in sales. Permanent price reductions lead to a significant shift in market share towards the store that lowered its price. The adjustment of market shares is almost immediate.

Discussant: Michaela Draganska (Stanford University)