Consumer Protection Economics Symposium
December 7, 2018 | Washington, DC
Opening Remarks
Bruce Kobayashi, Federal Trade Commission
Panel: The State of Consumer Protection Economics
The State of Consumer Protection Economics: Contributions and Challenges

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Consumer Protection Economics Symposium
Federal Trade Commission
Washington, DC
December 7, 2018

The views presented here are those of the presenter and do not necessarily represent the views of the Federal Trade Commission or any individual Commissioner.
What is Consumer Protection?

Consumer Protection is a broad term:

• What is “the” consumer?
  • People are different, with different goals and constraints.

• What is the consumer being protected from?
  • Harmful practices by firms?
  • Her own decisions, judged by regulators to be harmful to themselves or society?

• How is the consumer being protected?
  • Classic paradigm of consumer protection policy options:
    Status Quo, Inform Consumers, Educate Consumers, Regulate Product Characteristics?
  • Additional option to “nudge” using defaults or other new remedies from behavioral economics.

Today, I will borrow Muris’ terminology:

*What I refer to today as “consumer protection” is coextensive with the FTC’s “unfair and deceptive acts and practices” jurisdiction, (cite omitted) which generally can be thought of as policing the market against acts and practices that distort the manner in which consumers make decisions in the market place”* (Muris, 2002, p. 3).
Main Points

• FTC economists have contributed to consumer protection policy drawing from many fields of economics.

• But there is a long way to go, especially compared to antitrust.

• Key law & economics principle of consumer injury still not well defined.

• Time for those working in the field to develop an “Economics of Consumer Protection Handbook” to refine analysis and transfer learning to the next generation to build upon.
Economist Roles and Contributions to Consumer Protection at the Federal Trade Commission
Federal Trade Commission

• Only federal agency overseeing broad sectors of the economy with the dual mission to
  – Protect Consumers
  – Promote Competition

• Created by Congress in 1914
  – Five Commissioners
  – No more than three Commissioners from same political party

• Approximately 1140 employees with annual budget of approximately $306 MM
  – $170 MM to consumer protection mission
  – Remainder to competition mission
Federal Trade Commission

- Commissioner Noah Joshua Phillips
- Commissioner Christine S. Wilson
- Chairman Joseph J. Simons
- Commissioner Rohit Chopra
- Commissioner Rebecca Kelly Slaughter

- Bureau of Competition
- Bureau of Economics
- Bureau of Consumer Protection

- Independent Voice
- Approximately 80 PhD economists, 10 research analysts, three financial analysts
- Many fields in applied microeconomics
Division of Consumer Protection

• Established in 1978 -- celebrating our 40th Anniversary!

• Comprised of 26 economists (including three managers) and two research analysts.

• Small compared to role of economists in antitrust and compared to overall resources devoted to consumer protection vs. antitrust.
Division of Consumer Protection

• Contributes to all aspects of the Commission’s consumer protection mission:
  – Independent case review
  – Litigation support
  – Expert witnessing
  – Development and review of rules, industry guidelines, and policy
  – Design and conduct of research studies, surveys, and special projects
Relevant Academic Literatures

There is no unifying theme in consumer protection economics . . . The economics of consumer protection involves: (1) the economics of information, a field with emphasis on optimal search, adverse selection, moral hazard, and signaling; (2) law and economics, a field that focuses on contracts, liability schemes, penalties, etc.; and (3) behavioral economics which applies consumer psychology to markets. Various elements of industrial organization (IO), the theory of the firm, welfare economics, household production theory, marketing, and the theory of regulation are also included in the mix . . . Of course the economics of consumer protection and consumer law are intimately intertwined, because legal rules form the platform for the application of consumer policy.

(Pautler, 2014)
Policy Research Contributions
A Few Examples
Contributions by Federal Trade Commission Economists to Consumer Protection: Research, Policy, and Law Enforcement
Janis K. Pappalardo, Journal of Public Policy and Marketing, Fall 2014
• Field experiment to test the effect of advertising and advertising restrictions on price and quality (Bond et al. 1980)
  • Consumers who lived in relatively less restrictive cities paid less for eye exams and eyeglasses without sacrificing quality
Policy Research

• Econometric analysis of advertising regulations on consumer behavior and product innovation

  • Allowing health claims in food advertising improved healthfulness of cereals and consumer cereal choices (Ippolito and Mathios, 1989)
• Content analysis of the effects of advertising regulation on the flow of information to consumers

• Collaborated with a marketing research academic to use content analysis to assess the historical effect of advertising regulations (Pappalardo and Ringold 2000)

• This experience led to the implementation of another content analysis to examine effect of advertising regulations on health information in advertising (Ippolito and Pappalardo 2002)
Policy Research

• Surveys and an experiment to study consumer fraud
  
  
  • Exploratory experiment to examine traditional and behavioral characteristics of those likely to be deceived (McAlvanah, Anderson, Letzler, and Mountjoy 2015)
Policy Research

• Controlled experiments to assess consumer understanding of mandated disclosures

  • **Appliance energy label** research showing that consumers understand $ metric and categorical “star” metric can be misleading (See Hastak and Mazis 2014; Farrell, Pappalardo, and Shelanski 2010)

  • **Mortgage disclosure** research showing that government mandated disclosure terms were confusing, leading to people misunderstanding the costs of loans and showing how consumer research substantially improved consumer comprehension (Lacko and Pappalardo 2004, 2007, 2010)
• Economic analysis of privacy

  • Theoretical research on the private and social incentives for privacy when sellers can commit to transparent privacy policies that are understood by consumers (O’Brien and Smith, 2014)

  • Economic policy analysis of alternative regulatory approaches to privacy (Jin and Stivers, 2017)
• Economic analysis of resort fees (Sullivan, 2017)

• This paper uses studies of drip and partitioned pricing to assess the likely effect of separately-disclosed resort fees on consumers, two pricing practices used by online travel agents and hotels to disclose resort fees to consumers.

• The study concludes that separately-disclosed resort fees likely harm consumers by increasing their search costs and cognitive costs of finding and booking hotel accommodations.
Despite Contributions, Consumer Protection Economics Literature Lags Antitrust Economics
Fig. 1 “Antitrust” vs. “Consumer Protection” in *Econlit*

**Antitrust vs. Consumer Protection on *Econlit***

- **Abstract:**
  - "Antitrust": 2721
  - "Consumer Protection": 757

- **Anywhere in the article:**
  - "Antitrust": 18904
  - "Consumer Protection": 8642

- **Title:**
  - "Antitrust": 2582
  - "Consumer Protection": 325

Search in the titles or abstracts or full text of the articles.
Fig. 2 “Economics” plus “Antitrust,” “Competition,” or “Consumer Protection” in Google Scholar

Antitrust vs. Consumer Protection on Google Scholar

Key word searched
- "Antitrust" & "Economics"
- "Competition" & "Economics"
- "Consumer Protection" & "Economics"

Number of matches found

<table>
<thead>
<tr>
<th>Search in the titles or full text of the articles</th>
<th>Antitrust &amp; Economics</th>
<th>Competition &amp; Economics</th>
<th>Consumer Protection &amp; Economics</th>
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<td>Title</td>
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</tbody>
</table>

5350 more results were found when searching for "Antitrust" & "Economics" than when searching for "Competition" & "Economics."
Currently, No Handbook of Consumer Protection Economics, or Consumer Injury Guidelines comparable to the Merger Guidelines
Defining and Estimating Consumer Injury from an Economic Perspective
FTC Consumer Protection Policy

• Based on Section 5 of the FTC Act
  • Prohibits “unfair or deceptive acts or practices” in interstate commerce.

• Deception Policy Statement (1983)
  • A deceptive practice is likely to mislead consumers acting reasonably to their detriment.

• Unfairness Policy Statement (1984)
  • Unfair practices result in consumer injury that is (1) substantial, (2) not outweighed by countervailing benefits to competition or consumers, and (3) not reasonably avoidable by consumers.
What Does it Mean . . .

• To be “deceptive?”

• To be “unfair?”

• Meaning of terms is defined through law enforcement and policy statements.
“Consumer Injury” in Deception

Third, the representation, omission, or practice must be a "material" one. The basic question is whether the act or practice is likely to affect the consumer's conduct or decision with regard to a product or service. If so, the practice is material, and consumer injury [emphasis added] is likely, because consumers are likely to have chosen differently but for the deception. In many instances, materiality, and hence injury, can be presumed from the nature of the practice. In other instances, evidence of materiality may be necessary.

(Emphasis added, FTC Statement on Deception, FTC, 1983)
Unjustified *consumer injury* (emphasis added) is the primary focus of the FTC Act, and the most important of the three S&H criteria. By itself, it can be sufficient to warrant a finding of unfairness. The Commission's ability to rely on an independent criterion of consumer injury is consistent with the intent of the statute, which was to "[make] the consumer who may be injured by an unfair trade practice of equal concern before the law with the merchant injured by the unfair methods of a dishonest competitor (cite omitted).

The independent nature of the consumer injury criterion does not mean that every consumer injury is legally "unfair," however. To justify a finding of unfairness the injury must satisfy three tests. It must be substantial; it must not be outweighed by any countervailing benefits to consumers or competition that the practice produces; and it must be an injury that consumers themselves could not reasonably have avoided.

*(FTC Statement on Unfairness, FTC, 1984)*
Economic Approach to Analyzing Deception

• Two stage procedure Pappalardo (1997):

  • First, is the claim misleading?
    • Estimate using controlled, copy-test research with relevant population (not a bunch of lawyers and economists) to test comprehension.

  • Second, estimate the effect of misleading claim on purchase behavior.
    - Compare (1) Deceptive Demand to (2) Non-Deceptive Demand
      - Randomized, controlled experiments using split-cable TV, for example
      - Econometric controls

• Failed to define explicitly how this maps into “consumer injury.”
Fig. 3 Information Asymmetry (Boardman et al., 1996)
Estimating Consumer Injury from Deception

Very little in the economics literature. A few papers include models to assess “consumer detriment” or “consumer loss” from imperfect information, akin to assessing injury from deception.

- Models based on a comparative demand analysis.
- Models use a concept of “welfare” to estimate consumer harm from information problems.
- Models measure detriment comparing outcome under asymmetric information to counterfactual of what consumer would have done absent the information problem.
- Models differ depending upon apparent goal: promote “total welfare” vs. “consumer welfare.”
- Models differ in whether they show a price change due to increase in demand due to deception.
- Models tend to use “perfect information” counterfactuals rather than non-deceptive information counterfactuals.
Fig. 4 Consumer Detriment and the Market (Office of Fair Trading, 2000)
Fig. 5 Consumer Detriment in the Short Run (Hunter et al., 2001)
Train notes that he only “... found two papers that describe welfare calculations for this situation: Allcott (2013) and Schmeiser (2014).”

(Train, 2015)
Fig. 6 Consumer Surplus under Imperfect Foreknowledge about Sharing of Data (Train, 2015)
Estimating Consumer Injury

Law & Economics literature defines different damage concepts and examples of how to estimate them (Cooter and Eisenberg, 1985; Reference Manual on Scientific Evidence, Allen et al., 2011):

- **Reliance:**
  - Restore consumer to same position they would have been in as if the misrepresentation and harm had not existed in the first place.

- **Expectations:**
  - Compensate consumer with the same economic value she would have received if the firm had performed as promised.

- **Opportunity Cost:**
  - Compensate consumer based upon the counterfactual value of the next best feasible alternative.
Fig. 7 Consumer Injury under Deception
Example of Injury Estimation in a Deceptive Advertising Case
Outstanding Questions and Challenges
Hot Questions and Challenges

• Outstanding question is which concept of consumer injury is appropriate for different purposes.

• Clarify how goals of policy organizations differ and what assumptions are implicit in these goals.
  • Distinguish between equity goals and efficiency goals.
  • Goals to promote a truthful information environment and promote competition vs. promoting particular behavior

• Develop a Handbook of the Economics of Consumer Protection to move the Law & Economics of Consumer Protection field forward.
References


• Cooter , Robert and Melvin Aron Eisenberg, Damages for Breach of Contract, 73 Cal. L. Rev. 1432 (1985). Available at: http://scholarship.law.berkeley.edu/californialawreview/vol73/iss5/1


References

- http://dx.doi.org/10.2139/ssrn.2593898
References


Panel: The State of Consumer Protection Economics
Is Consumer Protection Economics the Rodney Dangerfield of the FTC?

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Presentation at the FTC Symposium on Consumer Protection Economics, Washington DC, December 7, 2018
I GET NO RESPECT
Overview: Why does CPE lag behind antitrust economics at the FTC?

- Competition/antitrust economics has a considerably longer intellectual history generally; and earlier Nobel prizes; more research handbooks; longer litigation history
- The history and culture of the FTC has favored antitrust
- The splintering of consumer protection responsibilities across the federal government has not helped the cause of CPE
- Conclusion
Competition/Antitrust Economics
Adam Smith (1776)

- **On monopoly**
  - “The monopolists, by keeping the market constantly understocked, by never fully supplying the effectual demand, sell their commodities much above the natural price, and raise their emoluments, whether they consist in wages or profit, greatly above their natural rate.”

- **On collusion**
  - “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.”
August Cournot (1838)

- The first “workhorse” oligopoly model
  - When \( n = 1 \), the model yields the monopoly outcome
  - When \( n = \infty \), the model yields the competitive outcome
  - When \( n \) becomes smaller, the outcomes come closer to the monopoly outcome

- The first model of a merger of complementary monopolists; equivalent to a vertical merger
  - Important for understanding “double marginalization”
Joseph Bertrand (1883)

- The other “workhorse” oligopoly model
Subsequent developments

- Alfred Marshall (1890)
  - Book V, Chapter XIV: “The Theory of Monopolies”
- Edwin Chamberlin and Joan Robinson (1920s and 1930s)
  - More oligopoly models
  - Monopolistic/imperfect competition
- Abba Lerner (1934)
- George Stigler (late 1930s)
- Ronald Coase; John Nash; Joe Bain; Tom Schelling; Oliver Williamson; F.M. Scherer; Leonard Weiss; Jean Tirole…
Consumer Protection Economics
Asymmetric information

- George Akerlof; Michael Spence; Joseph Stiglitz: late 1960s and 1970s
- Oliver Hart; Bengt Holmstrom: 1970s and 1980s
Behavioral economics

- Daniel Kahneman & Amos Twersky: 1970s
- Richard Thaler: late 1970s, 1980s
Experimental economics

- Vernon Smith: 1960s
- Charles Plott: 1970s
- (Experimental economics has also been used to expand IO knowledge)
Economic analysis of tort law

- Ronald Coase (1960)
- William Landes & Richard Posner; Steven Shavell; Mitchell Polinsky: 1970s and 1980s
Some Other Indicia
Nobel Prizes in Economics

- **Competition economics**
  - Stigler (1982); Nash (1994); Schelling (2005); Williamson (2009); Tirole (2014)

- **Consumer protection economics**
  - Ackerlof, Spence, & Stiglitz (2001); Kahneman (2002); Smith (2002); Hart & Holmstrom (2016); Thaler (2017)

- **Both**
  - Coase (1991)
The Handbook of Industrial Organization: Table of contents

- Vols 1 & 2 (1989)
  - Almost entirely about markets and industries; market power; etc.
  - Regulation chapters mostly about “economic regulation” (i.e., monopoly regulation)
    - One chapter on health-safety-environment; mostly on environmental regulation

- Vol 3 (2007)
  - More of the same
    - One chapter on advertising
Handbooks of antitrust/competition economics

- Buccirossi (2008)
- Elhauge (2012)
- Blair & Sokol (2015a; 2015b)
- GCR annual “Handbook of Competition Economics”, 2008-2019
- GCR annual “Handbook of Competition Enforcement Agencies”, 2008-2018
Handbooks of consumer protection economics

• ...
Caveat on handbooks

- Scattered chapters on CPE – but also on competition economics – appear in other specialized handbooks
Economists’ involvement in antitrust litigation

- Economists were involved in antitrust cases at least as early as the 1910s
  - \textit{U.S. v. U.S. Steel Co.}
- Involvement in the 1970s major antitrust cases
  - \textit{U.S. v. IBM; U.S. v. AT&T}
- The strengthening of the economics groups at the DOJ and the FTC in the 1960s and 1970s
- Growing antitrust involvement since then
Economists’ involvement in CP litigation

- Are there major cases where economists’ involvements have been especially noteworthy?
- Do the major economics consulting firms have a significant CP practice?
- Are there books that have been written about economists’ involvement in CP litigation?
History and Culture of the FTC
History & culture matter (1)

- Histories of the FTC
  - Scherer (1990); Winerman (2003; 2005); Kovacic (2009)
- The origins of the FTC in 1914 were embedded in antitrust, business regulation to address “unfair methods of competition”
- “Unfair or deceptive acts or practices in commerce” was added only in 1938 (Wheeler-Lea Act)
- FTC Chairs have often come from an antitrust background
History & culture matter (2)

- Histories of economics at the FTC
  - FTC (2003); Paulter (2015; 2018)
- Involvement of economists in FTC activities extend back to the beginnings of the agency
  - To support the antitrust function of the FTC
- Only in the late 1960s did BE economists begin to become involved in CPE activities
- Only in 1978 was the DCP established within BE
- Only in 2015 did the first Director of BE come from a CPE background
How encouraging/responsive have the FTC Commissioners and the Directors of BCP been to economics input from BE?

Are there lessons from the DOJ of the early 1980s?

- DOJ leadership in the early 1980s made clear that economics input mattered
  - The 1982 Merger Guidelines helped
  - Private-sector antitrust lawyers began scheduling antitrust economics mini-courses
The Splintering of Consumer Protection Responsibility
Splintering and its consequences

- In addition to the FTC, there are (at least) 20 other federal agencies with consumer/investor/worker protection/safety responsibilities
  - And the 50 states and their agencies and...

- Imagine that all of these federal responsibilities were consolidated into only one – or even two (like antitrust) – consumer protection/safety agencies
  - Wouldn’t there be an appreciably larger agglomeration of CP economists?
  - Wouldn’t that agglomeration have more heft/clout/influence than is true today?
Conclusion

● Important considerations
   – The longer intellectual development of competition analysis
   – The history and culture of the FTC
   – The splintering of CP responsibilities

● Implications
   – The continued elapsing of time may help
   – Strategize about the culture
   – Consider a “CP advocacy” program

● Take the long view!
Panel: The State of Consumer Protection Economics
Economics in CP

Panel discussion notes
Joseph Farrell, UC Berkeley
FTC conference, Dec 2018
Why does AT embrace economics so much more than CP does?

• Larry White’s paper: it’s history
• Alternatives include:
  – what the courts demand
  – What it’s like on front lines of enforcement
(Stereo)typical CP investigation

• If harm, it’s ongoing (+past)
• Conduct often seems shocking
• Many more perps without market power can harm consumers via scams, than firms (necessarily with market power?) can do so through AT problems
(Stereo)typical AT investigation

• Probably a merger...just by numbers
• HSR: short schedule but no ongoing harm
• Issues often seem subtle
• Pervasive atmosphere that markets mostly work; look out for exceptions
How economists think 
(way stereotypical)

• Stress tradeoffs
• Prove-it mentality
• Markets mostly work; look out for exceptions
When AT is like CP

- One class of AT cases feels more like stereotyped CP case
- Hard-core price fixing
- What if FTC brought 6 AT cases a week, 5 of them being price fixing?
On a more positive note...

• Economics and BE well placed to implement synergies between CP and AT
  – What does it take for markets to work well?
• This really ought to be a core strength of FTC
• Don’t let sociology of professional styles get in the way
• Easier said than done, I know!
Consumer Protection Economics Symposium
December 7, 2018 | Washington, DC

Panel: The State of Consumer Protection Economics
Break 10:40-11:00am

Please be reminded that no food or drinks are allowed in the Auditorium.
Paper Session 1
Voluntary Disclosure and Earnings Expectations in Multi-level Marketing

Stacie Bosley
Sarah Greenman
Samantha Snyder

Federal Trade Commission
Bureau of Economics
Consumer Protection Economics Symposium
December 7, 2018
CONSUMER PROTECTION ISSUES IN MULTI-LEVEL MARKETING

Business Opportunity Rule
Mandatory disclosure, MLM largely exempted

FTC Act
Regulatory issues
Improper product claims
Unlawful compensation structure
Misleading earnings representations
INCOME REPRESENTATIONS

Explicit or implied
Words or images
Hypothetical earnings scenarios
Reasonable basis
Representative
Testimonials with outcomes for majority

“an MLM should
(i) direct its participants not to make false, misleading, or unsubstantiated representations and
(ii) monitor its participants so they don’t make false, misleading, or unsubstantiated representations”

FTC Business Guidance Concerning Multi-Level Marketing (Jan 2018)
VOLUNTARY DISCLOSURE IN MLM

Adoption
Goal
Design
Impact
  Static vs. Dynamic
The 4Life mission is to lead, build, and deliver great companies and products to the world. 4Life's mission is to revolutionize the way people live their lives through health and well-being. 4Life provides a range of health and wellness products, including supplements, personal care, and fitness products. These products are designed to support overall health and wellness, including immune system support, antioxidant protection, and energy enhancement. 4Life offers a comprehensive compensation plan that rewards distributors for their efforts in building a network of customers and distributors. The company prides itself on providing a supportive and collaborative environment for its distributors, enabling them to grow their businesses and achieve success. The following infographic illustrates the impressive results achieved by 4Life distributors over the past year.
<table>
<thead>
<tr>
<th></th>
<th>Monthly commission payments</th>
<th>Average annual commissions</th>
<th>Percent of distributors who earned a commission</th>
<th>Percent of all distributors</th>
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<tr>
<td></td>
<td>Average</td>
<td>Low</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Associates</td>
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<td>&lt; $10</td>
<td>$1,240</td>
<td>$240</td>
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<tr>
<td>Leaders</td>
<td>$59</td>
<td>&lt; $10</td>
<td>$28,955</td>
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<td>Diamonds</td>
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**LAB EXPERIMENT**

**Question:** Impact of disclosure on interest and earnings expectations

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<th>Control Group</th>
<th>Treatment Group 1</th>
<th>Treatment Group 2</th>
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<tbody>
<tr>
<td>- Marketing materials</td>
<td>- Marketing materials</td>
<td>- Marketing materials</td>
</tr>
<tr>
<td>- No income disclosure</td>
<td>- Company-produced disclosure</td>
<td>- Augmented disclosure</td>
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</table>
Interest: “Given the information that you have seen/heard, how interested would you be in attending an information session or receiving more information about the XXX business opportunity?”

Expected Earnings and Expenses Questions

Now suppose you did sign up as a XXX Associate. How much money do you think you would earn in a TYPICAL YEAR, before subtracting any expenses?  
(Typical earnings in a year from working as a XXX Associate) ________________

What is the MOST you think you could earn as a XXX Associate in a year?  
(Highest earnings in a year from working as a XXX Associate) ________________

What is the LEAST you think you could earn as a XXX Associate in a year?  
(Lowest earnings in a year from working as a XXX Associate) ________________

What do you think your chances would be of earning $6,000 or more in a year (equivalent to $500 or more per month)? 0%, 1-9%, 10-19%, 20-29%, 30-39%, 40-49%, 50-59%, 60-69%, 70-79%, 80-89%, 90-99%, 100%

How much money do you think you would pay in EXPENSES in a TYPICAL YEAR as a XXX Associate?  
(Expenses could include product purchases, travel, company training or conventions, product brochures, etc.) ________________
**MLM INTEREST**

<table>
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<th>Interest in Business Opportunity</th>
<th>Combined (n=198)</th>
<th>Control (n=67)</th>
<th>Treatment 1 (n=67)</th>
<th>Treatment 2 (n=64)</th>
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<tr>
<td></td>
<td>Mean</td>
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<td>Company Disclosure</td>
<td>Augmented Disclosure</td>
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<tr>
<td></td>
<td>Std. Dev.</td>
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<tr>
<td>Interest in Business Opportunity</td>
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<td>2.8806</td>
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TYPICAL EARNINGS

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<th>Control (n=67)</th>
<th>Treatment 1 (n=67)</th>
<th>Treatment 2 (n=64)</th>
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<tr>
<td>Typical Expected Earnings in Year</td>
<td>Mean 6242.36</td>
<td>Mean 11435.82</td>
<td>Mean 3308.62</td>
<td>Mean 3876.71</td>
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<tr>
<td></td>
<td>Std. Dev. 10932.29</td>
<td>Std. Dev. 15110.79</td>
<td>Std. Dev. 6870.22</td>
<td>Std. Dev. 6445.31</td>
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*Disclosures:
- No Disclosure
- Company Disclosure
- Augmented Disclosure
MINIMUM EARNINGS

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<th>Combined (n=198)†</th>
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<th>Treatment 1 (n=67)</th>
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<td>Mean</td>
<td>Std. Dev.</td>
<td>Mean</td>
<td>Std. Dev.</td>
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<td>3948.52</td>
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**Maximum Earnings**

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<tr>
<th>Group</th>
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<th>Control ((n=67))</th>
<th>Treatment 1 ((n=67))</th>
<th>Treatment 2 ((n=64))</th>
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<tr>
<td>Maximum Expected Earnings in Year</td>
<td>Mean (66226.39)</td>
<td>Std. Dev. (239284.7)</td>
<td>Mean (30846.27)</td>
<td>Std. Dev. (42026.41)</td>
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<tr>
<td>Dependent Variable (log)</td>
<td>Interest</td>
<td>Typical Earnings</td>
<td>Min Earnings</td>
<td>Max Earnings</td>
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<tr>
<td>--------------------------</td>
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<tr>
<td>Treatment 1 (Company Disclosure)</td>
<td>0.048</td>
<td>-1.215</td>
<td>-0.773</td>
<td>-0.620</td>
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<tr>
<td></td>
<td>(0.42)</td>
<td>(3.13)**</td>
<td>(1.25)</td>
<td>(1.55)</td>
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<tr>
<td>Treatment 2 (Augmented Disclosure)</td>
<td>0.012</td>
<td>-1.177</td>
<td>-1.212</td>
<td>-0.857</td>
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<td>(2.90)**</td>
<td>(1.80)*</td>
<td>(2.05)**</td>
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<td>Female</td>
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<td>(0.85)</td>
<td>(5.81)**</td>
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<td>Age</td>
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<td>(5.81)**</td>
<td>(2.12)**</td>
<td>(1.46)</td>
<td>(3.84)**</td>
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<td>(1.15)</td>
<td>(1.21)</td>
<td>(1.46)</td>
<td>(1.26)</td>
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<td>Hispanic</td>
<td>0.082</td>
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<td>(0.52)</td>
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<td>STEM</td>
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<td>Business or Economics</td>
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<td>Numeracy Correct</td>
<td>0.058</td>
<td>0.147</td>
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<td>-0.039</td>
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<td>(1.07)</td>
<td>(0.88)</td>
<td>(0.73)</td>
<td>(0.21)</td>
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<td>-0.209</td>
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<td>Past MLM Experience - Other</td>
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<td>(0.18)</td>
<td>(1.64)</td>
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<td>(2.08)**</td>
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<tr>
<td>Willingness to take Risks - Investment</td>
<td>0.006</td>
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<td>-0.062</td>
<td>0.033</td>
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<td></td>
<td>(0.52)</td>
<td>(0.30)</td>
<td>(1.05)</td>
<td>(0.80)</td>
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<tr>
<td>Willingness to take Risks - Gambling</td>
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<td>-0.049</td>
<td>-0.061</td>
<td>-0.034</td>
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<td>(1.60)</td>
<td>(1.20)</td>
<td>(0.86)</td>
<td>(0.70)</td>
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<td>Willingness to take Risk - Work</td>
<td>-0.000</td>
<td>-0.039</td>
<td>0.094</td>
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<td></td>
<td>(0.02)</td>
<td>(0.66)</td>
<td>(1.55)</td>
<td>(0.00)</td>
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<td>Constant</td>
<td>2.700</td>
<td>11.504</td>
<td>9.400</td>
<td>12.291</td>
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<td></td>
<td>(6.23)**</td>
<td>(8.18)**</td>
<td>(2.96)**</td>
<td>(7.08)**</td>
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<tr>
<td>$R^2$</td>
<td>0.26</td>
<td>0.17</td>
<td>0.15</td>
<td>0.12</td>
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<td>(2.90)***</td>
<td>(1.80)*</td>
<td>(2.05)**</td>
</tr>
</tbody>
</table>
Findings

• No impact on interest or expense estimate
• Lower typical income expectations, though not reduced to EV
• Augmented version, greater impact for some judgments
• Risk of increase in upper bound
• Correlates of interest

Limitations

• Lab, not field
• Prompted review of disclosure
• Asked to consciously estimate earnings and expenses
• Not embedded
• Cool frame of mind
• Did not include most aggressive recruiting tactics
IMPLICATIONS

PARTIAL ADOPTION

CONCERNS REGARDING CURRENT MLM DISCLOSURES

UNDERSTANDING OF CONSUMER JUDGMENT & DECISION-MAKING

CONTINUED DISCUSSION OF MLM REGULATORY FRAMEWORK

MORE RESEARCH
Overcoming Optimism: A Discussion of “Voluntary Disclosure and Earnings Expectations in Multi-Level Marketing”

Linda Court Salisbury

FTC Consumer Protection Economics Symposium
December 7, 2018
Washington, DC
Information disclosures increased accuracy of earnings estimates, but....

<table>
<thead>
<tr>
<th>Experiment Group</th>
<th>Control</th>
<th>Company Disclosure</th>
<th>Augmented Disclosure</th>
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<tbody>
<tr>
<td>Typical Expected Earnings</td>
<td>$11,436</td>
<td>$3,309</td>
<td>$3,877</td>
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<tr>
<td>Minimum Expected Earnings</td>
<td>$3,949</td>
<td>$556</td>
<td>$893</td>
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<tr>
<td>Maximum Expected Earnings</td>
<td>$30,846</td>
<td>$91,688</td>
<td>$76,610</td>
</tr>
<tr>
<td>Chance of Earning $6,000</td>
<td>4.37</td>
<td>3.39</td>
<td>3.05</td>
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</table>

Expected Value of Earnings = $1,500

• Optimistic bias
• Better-than-average effect
Can disclosures overcome optimism?

- Positive mood increases optimistic bias
- Perceived control increases optimistic bias
- Perceived risk decreases optimistic bias
Which Communities Complain to Policymakers? Evidence from Consumer Sentinel

Devesh Raval

Federal Trade Commission

Consumer Protection Economics Symposium
Disclaimer:
The opinions expressed here are those of the authors and not necessarily those of the Federal Trade Commission or any of its Commissioners.
Consumer Sentinel Database

- Millions of Complaints per year
- Collected from Government Agencies, BBBs, others
- Topics: Fraud, Other, Identity Theft, DNC
Introduction

Consumer Sentinel Database

CONSUMER SENTINEL NETWORK

All Sentinel Reports
Year: 2018, Quarter: 3

Published October 16, 2018

Year

Quarter

Fraud Facts

302,053
# of Fraud Reports

$343.9M
Total $ Loss

$399
Median $ Loss

Top 10 Fraud Categories

Imposter Scams
41,391

Telephone and Mobile Services
27,005

Shop-at-Home and Catalog Sales
13,954

Prizes, Sweepstakes and Lotteries
12,328

Other Categories

Debt Collection
89,839

Credit Bureaus, Information Furnishers and Report Users
31,013

Banks and Lenders
30,261

Auto Related
22,962

Credit Cards
11,189

Raval (FTC)

Which Communities Complain?

CP Symposium
Questions for this talk

- Who complains to the Consumer Sentinel?

- What do they complain about?

- How do complaint rates compare to victimization rates?
Questions for this talk

- Who complains to the Consumer Sentinel?

- What do they complain about?

- How do complaint rates compare to victimization rates?
Consumer Demographics

- Consumer Zip Code matched to ACS 2008-2012 Demographics

- Race: Percent Black, Percent Hispanic, Percent Asian

- Culture: Percent College Graduate, Degree of Urbanization

- Cost of Time: Median Household Income, Unemployment Rate, Median Age, Household Size
Regression Specification

- Examine how per capita complaint rate for Consumer Sentinel varies with demographics

- Data from 2012 - 2015

- Specification:

\[
\log(E(y_{szt})) = \beta D_{sz} + \eta \log \text{Population} + \gamma_t + \delta_s
\]
Complaint rates for All Contributors

- 10 pp Inc Unemp Rate
- 100% Inc Median HH Size
- 0% to 100% Pct Urban
- 100% Inc Median Age
- 100% Inc Median HH Income
- 0% to 100% Pct College
- 0% to 100% Pct Hispanic
- 0% to 100% Pct Black

Percent Change

Raval (FTC)

Which Communities Complain?

CP Symposium
Complaint rates by Contributors

- 10 pp Inc Unemp Rate
- 100% Inc Median HH Size
- 0% to 100% Pct Urban
- 100% Inc Median Age
- 100% Inc Median HH Income
- 0% to 100% Pct Hispanic
- 0% to 100% Pct Black

Percent Change

contributor: All BBB CFPB FTC

Which Communities Complain?
How do complaint rates vary across areas?

- Higher rates for black, college educated, higher unemployment, higher income areas

- Lower rates for Hispanic, rural, greater HH Size areas

- Different patterns for CFPB
Questions for this talk

- Who complains to the Consumer Sentinel?
- What do they complain about?
- How do complaint rates compare to victimization rates?
Fraud vs. Other Complaints

- 0% to 100% Pct Black
- 0% to 100% Pct Hispanic
- 0% to 100% Pct College
- 100% Inc Median HH Income
- 100% Inc Median Age
- 0% to 100% Pct Urban
- 100% Inc Median HH Size
- 10 pp Inc Unemp Rate

Category: Fraud vs. Other

Raval (FTC)
Fraud vs. Other Complaints, FTC only

- 0% to 100% Pct Black
- 0% to 100% Pct Hispanic
- 0% to 100% Pct College
- 100% Inc Median HH Income
- 100% Inc Median Age
- 0% to 100% Pct Urban
- 100% Inc Median HH Size
- 10 pp Inc Unemp Rate

Percent Change

Category

Fraud
Other

Which Communities Complain?

Raval (FTC)

CP Symposium
Finance Related Categories

- 0% to 100% Pct Black
- 0% to 100% Pct Hispanic
- 0% to 100% Pct College
- 100% Inc Median HH Income
- 100% Inc Median Age
- 0% to 100% Pct Urban
- 100% Inc Median HH Size
- 10 pp Inc Unemp Rate

Percent Change

Category: ● Auto, ● Bank, ● DebtCollection

Raval (FTC)
Which Communities Complain?
CP Symposium 15 / 23
Non-Finance Related Categories

- 0% to 100% Pct Black
- 0% to 100% Pct Hispanic
- 0% to 100% Pct College
- 100% Inc Median HH Income
- 100% Inc Median Age
- 0% to 100% Pct Urban
- 100% Inc Median HH Size
- 10 pp Inc Unemp Rate

Percent Change

Category: Imposter, Prize, Telecom

Raval (FTC)
What Determines Consumer Complaining Behavior?

- Who complains to the Consumer Sentinel?

- What do they complain about?

- How do complaint rates compare to victimization rates?
Why do consumers complain?

- Higher rates of consumer complaints could reflect:
  - Higher Propensity to Complain
  - Worse Consumer Experience

- Typically difficult to disentangle these two stories
Victim Datasets matched to Consumer Sentinel Network complaints

Compare victim and complaint demographics

Heavily minority areas complain less
Heavily Minority Areas Less Likely to Complain

- 0% to 100% Pct Black
- 0% to 100% Pct Hispanic
- 0% to 100% Pct Asian
- 0% to 100% Pct College
- 100% Inc Median HH Income
- 100% Inc Median Age
- 0% to 100% Pct Urban
- 100% Inc Median HH Size
- 1 pp Inc Unemp Rate

Percent Change
Average 2015 Complaint Rates by Minority Share

[Graph depicting the relationship between population share and complaint rates per 1,000 people for both percent Black and percent Hispanic communities.]

Raval (FTC) Which Communities Complain? CP Symposium 21 / 23
Weighted Average 2015 Complaint Rates by Minority Share

![Graph showing Implied Victimization Rate vs Population Share for Percent Black and Percent Hispanic communities.](image-url)
Conclusion

- Different complaint rates by demographics across areas

- Different patterns for:
  - CFPB compared to BBBs, FTC
  - Fraud vs. Other complaints

- Have developed weights to use complaint rates to examine victimization differences
Consumer Protection Economics Symposium

Discussion of:

Which Communities Complain to Policymakers?
Evidence from Consumer Sentinel

Erez Yoeli
MIT Sloan School of Management
Paper Session 1
Lunch 12:00-1:00pm

Please be reminded that no food or drinks are allowed in the Auditorium.
Panel: Analysis of Consumer Welfare & Consumer Protection Policy
Behavioral Welfare Evaluation of Consumer Protection Policies

Hunt Allcott (New York University, Microsoft Research, and NBER)

December 2018
Acknowledgment and disclaimer

- I thank the Sloan Foundation for financial support.

- This paper reflects the authors’ own analyses and calculations based in part on data reported by Nielsen through its Homescan, RMS, and PanelViews services for food and beverage categories over 2006-2016, for all retail channels in the U.S. market. The conclusions drawn from the Nielsen data are those of the authors and do not reflect the views of Nielsen. Nielsen is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.
Evaluating consumer protection policies

- Motivation for consumer protection: consumers might not act in their own best interest
Evaluating consumer protection policies

- Motivation for consumer protection: consumers might not act in their own best interest
- How to evaluate and optimally set consumer protection policies?
Evaluating consumer protection policies

- Motivation for consumer protection: consumers might not act in their own best interest
- How to evaluate and optimally set consumer protection policies?
- **Traditional benefit-cost analysis:** cannot engage with policymakers’ arguments
  - Revealed preference $\implies$ consumer protection is welfare-reducing by assumption
Evaluating consumer protection policies

- Motivation for consumer protection: consumers might not act in their own best interest
- How to evaluate and optimally set consumer protection policies?
- **Traditional benefit-cost analysis**: cannot engage with policymakers’ arguments
  - Revealed preference $\implies$ consumer protection is welfare-reducing by assumption
- **Impact evaluation**: how to combine conflicting results?
Evaluating consumer protection policies

- Motivation for consumer protection: consumers might not act in their own best interest

- How to evaluate and optimally set consumer protection policies?

- Traditional benefit-cost analysis: cannot engage with policymakers' arguments
  - Revealed preference $\Rightarrow$ consumer protection is welfare-reducing by assumption

- Impact evaluation: how to combine conflicting results?

- Example: payday lending ...
  - increases financial hardship, food stamp use, etc. (Melzer 2011, 2016)
  - decreases military readiness (Carrell and Zinman 2014)
  - decreases foreclosures after natural disasters (Morse 2011)
  - reduces alternative high-cost borrowing (Bhutta, Goldin, and Homonoff 2016; Zinman 2010)
  - increases alternative high-cost borrowing (Gathergood, Guttman, and Hunt 2015)
  - has no statistical effect on credit scores (Bhutta, Skiba, and Tobacman 2015)
Behavioral welfare analysis

Behavioral welfare analysis


- Use “refinements” of revealed preference
Behavioral welfare analysis


- Use “refinements” of revealed preference

- Ask: what mistakes are people allegedly making?
  - Uninformed?
  - Not paying attention to all consequences?
  - Present biased?
Behavioral welfare analysis


- Use “refinements” of revealed preference

- Ask: what mistakes are people allegedly making?
  - Uninformed?
  - Not paying attention to all consequences?
  - Present biased?

- Measure “true” preferences using only decisions made in “mistake-free” conditions
  - Informed
  - Attentive
  - Choosing in advance (controversial)
Behavioral welfare analysis


- Use “refinements” of revealed preference

- Ask: what mistakes are people allegedly making?
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- Measure “true” preferences using only decisions made in “mistake-free” conditions
  - Informed
  - Attentive
  - Choosing in advance (controversial)

- Set policy to maximize welfare given “true” preferences
Today’s talk

- Theory, in pictures
- Two examples
Theory, in pictures
Illustrating consumer bias

Compensated demand,
\[ s(p; y, \theta) \]
Illustrating consumer bias

Compensated demand, $s(p; y, \theta)$

Compensated demand if unbiased, $s^v(p; y, \theta)$

Price

Quantity
Illustrating consumer bias

Compensated demand, $s(p; y, \theta)$

Compensated demand if unbiased, $s^V(p; y, \theta)$
Internality correction benefit from sin tax

Compensated demand, \( s(p; y, \theta) \)

Compensated demand if unbiased, \( s^v(p; y, \theta) \)

\( \gamma(\theta) \)

Hunt Allcott (NYU, MSR, and NBER)  
Behavioral Welfare Evaluation of Consumer Protection Policies
Internality correction benefit from sin tax
Internality correction benefit from sin tax

Compensated demand, \( s(p; y, \theta) \)

Compensated demand if unbiased, \( s^V(p; y, \theta) \)

Internality correction benefit

\( \gamma(\theta) \)
Empirical application 1:
Subsidies and bans on incandescent lightbulbs
Allcott and Taubinsky (2015, AER)
What explained low CFL market shares?

- Rational preferences?
- Bias from imperfect information or inattention?
Consumer protection rationale

_Incandescent lightbulbs continue to sell remarkably well because, if their energy costs are ignored, they appear cheap ... Consumers must therefore gather information and perform a reasonably sophisticated calculation to compare the life-cycle costs of [incandescents] and CFLs. But many lack the skills._

-Regulatory Impact Statement for Australia’s ban on energy inefficient lightbulbs
Lightbulb energy efficiency policy

Subsidies

- Utilities spent at least $252 million subsidizing and promoting compact fluorescent lightbulbs (CFLs) in 2010 (U.S. DOE 2010)

Bans

- Argentina, Australia, Brazil, Canada, China, Cuba, the European Union, Israel, Malaysia, Russia, and other countries have banned some or all incandescent light bulbs.
Behavioral welfare analysis of energy efficiency policy

- **What mistakes are people allegedly making?**
  - Uninformed and inattentive to energy costs
    - (+ externalities)
Behavioral welfare analysis of energy efficiency policy

- **What mistakes are people allegedly making?**
  - Uninformed and inattentive to energy costs
    - (+ externalities)

- **Measure “true” preferences using only decisions made in “mistake-free” conditions**
  - Randomized information provision experiments
In-store experiment

2x2 experiment: Randomize info (iPad) and prices (rebate card)

### Bulb Package Cost Comparison

<table>
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<tr>
<th></th>
<th>Incandescent</th>
<th>CFL</th>
<th>CFL Savings</th>
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<tbody>
<tr>
<td>Yearly Energy Costs</td>
<td>$5</td>
<td>$1</td>
<td>$4</td>
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<tr>
<td>Energy Costs for 8,000 hours</td>
<td>$48</td>
<td>$11</td>
<td>$37</td>
</tr>
<tr>
<td>Bulb Costs for 8,000 hours</td>
<td>$8</td>
<td>$4</td>
<td>$4</td>
</tr>
<tr>
<td>Total Costs for 8,000 hours</td>
<td>$56</td>
<td>$15</td>
<td>$41</td>
</tr>
</tbody>
</table>

Costs are $41 less over lifetime of CFL bulb package.

- CFL bulb lasts around 8,000 hours vs. 1,000 hours for an Incandescent bulb
- Energy Cost = bulb wattage * bulb count * usage hours * (kWh cost/1000)
Online experiment

CFLs last longer than incandescents. At average usage:

- Incandescents burn out and have to be replaced every year.
- CFLs burn out and have to be replaced every eight years.

If one incandescent bulb costs $1 and one CFL costs $4, this means that the total purchase prices for eight years of light are:

- $8 for incandescents
- $4 for CFLs

Also, CFLs use less electricity than incandescents. At national average usage and electricity prices:

- A standard (60-watt) incandescent uses $6 in electricity each year.
- An equivalent CFL uses $1.50 in electricity each year.

Thus, for eight years of light, the total costs to purchase bulbs and electricity would be:

- $56 for incandescents: $8 for the bulbs plus $48 for electricity
- $16 for a CFL: $4 for the bulbs plus $12 for electricity

The graph below illustrates this:
Treatment and control demand curves

- **Treatment: Baseline & Endline**
- **Treatment: Endline-Only**
- **Control**
Effects of information on WTP for CFLs
Welfare effects of lightbulb subsidy or ban

**Baseline Demand**

**Gain: Internality Reduction**

**Loss: Harberger Distortion**
Empirical application 2: Sugar-sweetened beverage taxes
Allcott, Lockwood, and Taubinsky (2018)
The soda tax debate

Source: University of North Carolina Global Food Research Program

Hunt Allcott (NYU, MSR, and NBER)
Behavioral welfare analysis of soda taxes

What mistakes are people allegedly making?

- Uninformed about health costs
- Imperfect self-control
  - (+ externalities)
Behavioral welfare analysis of soda taxes

- What mistakes are people allegedly making?
  - Uninformed about health costs
  - Imperfect self-control
    - (+ externalities)

- Measure “true” preferences using only decisions made in “mistake-free” conditions
  - “Counterfactual normative consumer”: measure bias proxies, predict choices made in absence of bias
Nutrition knowledge vs. consumption

Average score of dietitians and nutritionists

Liters purchased per adult equivalent per year

Nutrition knowledge

Hunt Allcott (NYU, MSR, and NBER)

Behavioral Welfare Evaluation of Consumer Protection Policies
Self-control vs. consumption

I drink SSBs more often than I should:
Not at all

Hunt Allcott (NYU, MSR, and NBER)
Nutrition knowledge vs. income

Hunt Allcott (NYU, MSR, and NBER)

Behavioral Welfare Evaluation of Consumer Protection Policies
Self-control vs. income

![Graph showing the relationship between self-control and household income. The y-axis represents self-control values ranging from 0.65 to 0.8, and the x-axis represents household income in thousands of dollars ranging from $0 to $125,000. The data points are plotted along a trend line indicating a positive correlation.]

Hunt Allcott (NYU, MSR, and NBER)
Share of consumption explained by bias

![Graph showing the share of consumption attributable to bias against household income in $000s. The graph indicates a negative correlation, with the share of consumption decreasing as household income increases.](image-url)
Average marginal bias by income

Hunt Allcott (NYU, MSR, and NBER)
Behavioral Welfare Evaluation of Consumer Protection Policies
Welfare effects of optimal soda tax

Hunt Allcott (NYU, MSR, and NBER) Behavioral Welfare Evaluation of Consumer Protection Policies
Conclusion

- Bias measurement is both necessary and difficult
Conclusion

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- **Necessary:** we have no other way of quantitatively setting and evaluating optimal consumer protection policies
Bias measurement is both **necessary** and **difficult**

**Necessary:** we have no other way of quantitatively setting and evaluating optimal consumer protection policies

**Difficult:** serious empirical concerns

- Did we measure the right kind of bias?
- Information provision: what information to provide?
- External validity of surveys and experiments
- Unconfoundedness in non-experimental studies
Conclusion

- **Bias measurement is both necessary and difficult**
- **Necessary**: we have no other way of quantitatively setting and evaluating optimal consumer protection policies
- **Difficult**: serious empirical concerns
  - Did we measure the right kind of bias?
  - Information provision: what information to provide?
  - External validity of surveys and experiments
  - Unconfoundedness in non-experimental studies
- **Good news**: expanding toolkit of behavioral economics tools for bias measurement
Panel: Analysis of Consumer Welfare & Consumer Protection Policy
Consumer Response to Information:
Evidence from a Field Experiment of Calorie Labels on Restaurant Menus

John Cawley

FTC Consumer Protection Economics Symposium

December 7, 2018
Outline

• Overview of the neoclassical economics and behavioral economics of information

• Results from an RCT of calorie labels on restaurant menus
  – Calorie labels as approach to diet-related chronic disease
  – Hypothesized effects of calorie labels on menus
  – Methods: field RCT in two restaurants
  – Empirical models
  – Empirical results
  – Policy implications
Neoclassical Economics of Information

• How consumers respond to information is a classic topic in economics; e.g.:
  – Imperfect information about price; can be addressed by consumer search and product advertising (Stigler, 1961)
  – Imperfect information in health care markets can lead to adverse selection (Arrow, 1963) and moral hazard (Pauly, 1968)
  – Imperfect information about product quality can result in bad quality driving out the good (Akerlof, 1970)
  – Imperfect information about workers; can be addressed by signaling by workers, screening by employers (Spence, 1973)
Behavioral Economics of Information

• Dual-process model of decision-making (Loewenstein and O’Donoghue, 2005):
  – Deliberative process (neocortex): more rational, farsighted – more responsive to information
  – Affective process (limbic system): more impulsive, emotional, myopic – less responsive to information

• Relative strength of each process may be affected by:
  – “Cues” that can push one into a “hot” state in which affective process dominates (Bernheim & Rangel, 2004)
  – Finite/depletable willpower (Ozdenoren et al., 2012)
  – Decision fatigue (Linder et al., 2014; Dai et al., 2015; Danziger et al., 2011)
Evidence on Consumer Responsiveness to Health Information

- Report cards for cardiac surgeons (Dranove et al., 2003)
  - Led surgeons to selection against severely ill patients
- “America’s Best Hospitals” (Pope, 2009)
  - Those with better rankings (controlling for quality score) attract more patients
- HIV risk (Dupas, 2011)
  - Girls switched from unprotected sex with older men to protected sex with younger men, reduction in teen pregnancy
- Restaurant hygiene report cards (Jin and Leslie, 2003)
  - Better hygiene reports translate into higher restaurant revenue
- Allowing health claims in food advertising (Ippolito and Mathios, 1990, 1995)
  - Reduction in saturated fat from all sources, increase in fiber from cereals
- Nutrition Facts panel (Mathios, 2000)
  - Highest-fat salad dressings lost market share after info disclosure
Evidence on Consumer Responsiveness to Health Information “Nudges”

• Encouragement on receipt to use personalized healthful substitutions during next visit to burger restaurant (Bedard and Kuhn, 2015)
  – Share of sales of encouraged items rose but no significant change in calories or fat

• Social norms feedback to doctors on prescribing
  – Antibiotics in UK (Hallsworth et al., 2016) – modest reduction
  – Schedule II drugs in US (Sacarny et al., 2016) – no effect
Important Questions

• Should policy try harder to influence the affective (rather than deliberative) system?
  – If worried about excessive consumption, is affective system usually in control at that time?
  – Graphic warning labels on cigarettes (FDA requirement blocked by courts in 2012)

• How should information be conveyed to make it most useful/influential?
  – E.g. rather than list grams of fat, use “traffic light” to indicate healthiness
Motivation for Calorie Labels

• Poor diets contribute to chronic disease
  – Among U.S. adults, 35% have CVD disease, 29% have hypertension, 16% have hyperlipidemia, 12% have diabetes (USDA, 2015)

• Rise in the prevalence of obesity and diabetes in the U.S.
  – Obesity in adults rose from 15.1% in 1976-80 to 39.6% in 2015-16 (NCHS, 2014, 2017)

• Americans spend 43.1% of their food dollars and consume one-third of their calories away from home (Guthrie et al., 2013; USDA, 2017)
  – People tend to underestimate number of calories in restaurant food (Block, 2013; Elbel, 2011)
  – Food-away-from-home associated with higher intake of calories, fat, saturated fat, cholesterol, and sodium (e.g. An, 2016)
Trends in Adult Obesity Prevalence

Figure 2. Obesity rates

Trend in Obesity Prevalence, U.S.

Figure 5. Trends in obesity prevalence among adults aged 20 and over (age adjusted) and youth aged 2–19 years: United States, 1999–2000 through 2015–2016


NOTES: All estimates for adults are age-adjusted by the direct method to the 2000 U.S. census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db286_table.pdf#5.
Motivation for Calorie Labels

- Calorie labels on restaurant menus recommended as way of providing consumers with information that can improve their dietary choices
- Such laws passed by:
  - Cities: NYC, Nashville, Philadelphia
  - Counties: King County WA (Seattle), others in MD, OR, NY
  - States: CA, ME, MA, OR – suspended
- Voluntarily implemented by McDonalds, Subway, Panera, Yum Brands (KFC, Taco Bell, Pizza Hut), Chick-fil-A, Starbucks
- Nationwide law for calorie labels on menus of chain restaurants took effect May 7, 2018
  - Supported by National Restaurant Association
Previous Literature:
Fast Food Restaurants


- Bollinger et al. (2011): NYC menu label law. NYC vs control cities (Boston, Phila.) Starbucks database. Menu labels reduced calories by 14.4 (5.8%) – all from food, not beverages

- Finkelstein et al. (2011): King County WA menu label law, with adjacent counties as controls. Sales data from one Mexican fast food chain. DD model: no detectable impact of menu labels on calories ordered.
Field RCT of Calorie Labels  
(Cawley, Susskind, Willage, 2018)

- Randomized controlled field experiment conducted in two full-service, sit-down restaurants

- Large sample size: N=5,551
  - Crockett et al. (2018): 3 RCTs in restaurants, total N=1,877
  - Bleich et al. (2017): “data from well-powered RCT field experiments…are needed” (p. 2042)

- Rich data:
  - Individual-level orders
  - Sharing of items recorded by server
  - Detailed characteristics of food: # calories, nutrients, etc.
  - Detailed information on restaurant experience (server, table, seat, size of party)
  - Survey data so have X of consumers
Hypotheses

• If consumers systematically underestimate the calorie content of away-from-home food, calorie labels may result in patrons ordering:
  – Fewer calories overall
  – Fewer courses (perhaps especially appetizers and desserts)
  – Fewer calories within each course
Hypotheses

• If consumers have “classical” error in their calorie estimates, then when they are informed they may be:
  – Less likely to order items they previously underestimated
  – More likely to order items they previously overestimated
  – …with ambiguous effect on total calories

• Consumers will be more supportive of calorie labels on menus after they experience them
  – Contrast: theory of strategic self-ignorance (Thunstrom et al., 2016)
Methods: RCT

• Venues: two full-service, sit-down restaurants located on the Cornell campus and open to the public

• Restaurant A:
  – 38 tables
  – Serves all meals (but we examine dinner only)
  – Average patron age is 42.6; 17% are college students

• Restaurant B:
  – 16 tables
  – Serves dinner only
  – Average patron age is 24.4; 62% are college students
Methods: RCT

• Upon coming to maître d’, entire party randomized (via Randomizer smartphone app) to T or C
  – C: gets usual menu
  – T: gets menu with calorie labels
  – RA records whether party is in T or C group
Methods

• At conclusion of meal, RA approaches and asks each individual to complete a survey
• Each party’s “ticket” (restaurant order receipt) stapled to their surveys; data entered by RAs
  – Shared items are noted by server
• Merged with data on calories and nutrients, price, cost of ingredients
  – ADACO software used to calculate raw materials cost of recipes
• Experiment approved by Cornell IRB (protocol ID # 1509005830)
Source of Calorie Information: MenuCalc

• Recipe nutrition analysis software designed for restaurants and food professionals
  – In partnership with National Restaurant Association
  – Uses USDA’s nutritional database for 18,000 ingredients
  – Takes into account loss of nutrients due to cooking
• User enters recipe, # servings, and software outputs calories and nutrients per serving, Nutrition Facts panel
## Control Menu: Appetizers

### Starters

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>tomato soup</td>
<td>basil oil, cheddar toast</td>
<td>$6</td>
</tr>
<tr>
<td>brussels sprouts</td>
<td>caramelized shallots, popped corn, honey water</td>
<td>$6</td>
</tr>
<tr>
<td>truffle fries</td>
<td>truffle oil, parmesan, parsley, garlic aioli</td>
<td>$8</td>
</tr>
<tr>
<td>calamari</td>
<td>stir-fried, sriracha sauce, red peppers, peanuts, red onion, thai basil</td>
<td>$8</td>
</tr>
<tr>
<td>wontons</td>
<td>chicken, scallion, cabbage, carrot, korean dipping sauce</td>
<td>$7</td>
</tr>
<tr>
<td>wings</td>
<td>chicken wings, celery, sweet-spicy korean sauce</td>
<td>$8</td>
</tr>
</tbody>
</table>
## Control and Treatment Menus:
### Appetizers

### Starters

<table>
<thead>
<tr>
<th>Appetizer</th>
<th>Description</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>tomato soup</strong></td>
<td>basil oil, cheddar toast</td>
<td>720</td>
</tr>
<tr>
<td><strong>brussels sprouts</strong></td>
<td>caramelized shallots, popped corn, honey water</td>
<td>360</td>
</tr>
<tr>
<td><strong>truffle fries</strong></td>
<td>truffle oil, parmesan, parsley, garlic aioli</td>
<td>910</td>
</tr>
<tr>
<td><strong>calamari</strong></td>
<td>stir-fried, sriracha sauce, red peppers, peanuts, red onion, thai basil</td>
<td>630</td>
</tr>
<tr>
<td><strong>wontons</strong></td>
<td>chicken, scallion, cabbage carrot, korean dipping sauce</td>
<td>200</td>
</tr>
<tr>
<td><strong>wings</strong></td>
<td>chicken wings, celery, sweet-spicy korean sauce</td>
<td>860</td>
</tr>
</tbody>
</table>

Additional nutritional information is available upon request; 2,000 calories a day is used for general nutrition advice, but calorie needs vary.
Treatment Menu: Entrees

Mains

salmon  dashi-ginger broth, shiitakes, bok choy, fried rice cake, miso butter / calories 820 / 17

duck  spring mix, farro, raisins, asparagus, pickled shallots, blood orange, sherry vinaigrette / calories 690 / 17

steak  delmonico, chimichurri, fries, house salad / calories 1840 / 18

burger  custom-ground beef, bacon, LTO, dijon mayo, cheddar or whipped blue, fries or salad / calories 1270 / 13

seafood  scallop, shrimp, andouille, zucchini, cherry tomatoes, gumbo veloute, polenta / calories 580 / 17

spaghetti  garlic butter, cherry tomatoes, rapini, fennel, pinenuts, capers, parsley / calories 1020 / 12
Desserts

bomboloni  cinnamon-sugar donuts, chocolate ganache / calories 660 /  6

mascarpone cheesecake  graham cracker crust, macerated berries / calories 420 /  6

banana split  brûléed banana, trio of daily ice creams, chocolate crumble / calories 780 /  6

napoleon  phyllo, chocolate cream, crisped rice wafer, ganache, caramel sauce / calories 1150 /  6
Empirical Model

\[ Y_i = \alpha + \beta T_i + \gamma X_i + \varepsilon_i \]

- \( Y_i \): outcome of interest concerning patron \( i \)
  - Calories ordered (by course, total)
  - Whether ordered each course (appetizer, entrée, dessert) – extensive margin
  - Calories ordered conditional on ordering the course – intensive margin
  - Whether ordered a special (appetizer, entrée, dessert)
  - Nutrients ordered: fat, cholesterol, vitamin A, vitamin C, fiber, etc.
  - Calories ordered per dollar spent
  - Restaurant’s outcomes: revenue, revenue minus food costs, labor time
  - Whether consumer reported seeing calorie info
  - Whether consumer supports menu labels
Empirical Model

\[ Y_i = \alpha + \beta T_i + \gamma X_i + \varepsilon_i \]

- \( T_i \): indicator for random assignment to Treatment group
- \( X_i \): includes:
  - Individual characteristics: sex, age, race, education
  - Restaurant environment: indicator variables for day of week, table, seat, server
- \( \varepsilon_i \): error term
- Estimated using OLS for continuous outcomes, LPM for binary outcomes
- Standard errors clustered at party level
Empirical Results
Unconditional Mean Calories by Course and Group (T vs C)

Total N=5,551. Control N=2,745  Treatment N=2,806  * p<0.10, ** p<0.05, *** p<0.01
**Effect of Menu Labeling on Calories Ordered**

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimated Effect</th>
<th>SE</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appetizer Calories</td>
<td>-22.5*</td>
<td>12.7</td>
<td>5551</td>
</tr>
<tr>
<td>Mean=376.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entree Calories</td>
<td>-26.6*</td>
<td>13.8</td>
<td>5551</td>
</tr>
<tr>
<td>Mean=811.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dessert Calories</td>
<td>-6.4</td>
<td>11.3</td>
<td>5551</td>
</tr>
<tr>
<td>Mean=164.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drink Calories</td>
<td>3.2</td>
<td>5.2</td>
<td>5551</td>
</tr>
<tr>
<td>Mean=104.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Calories</td>
<td>-44.9*</td>
<td>23.3</td>
<td>5551</td>
</tr>
<tr>
<td>Mean=1474.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.

Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect on Probability of Ordering Each Course

<table>
<thead>
<tr>
<th>Course</th>
<th>Estimated Effect</th>
<th>Mean</th>
<th>Standard Error</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appetizer</td>
<td>-0.006</td>
<td>0.735</td>
<td>0.017</td>
<td>5551</td>
</tr>
<tr>
<td>Entree</td>
<td>-0.015*</td>
<td>0.926</td>
<td>0.009</td>
<td>5551</td>
</tr>
<tr>
<td>Dessert</td>
<td>-0.007</td>
<td>0.329</td>
<td>0.020</td>
<td>5551</td>
</tr>
<tr>
<td>Drink (Caloric Only)</td>
<td>0.035*</td>
<td>0.458</td>
<td>0.018</td>
<td>5551</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.

Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect of Menu Labeling on Calories, Conditional on Ordering Course

<table>
<thead>
<tr>
<th>Menu Category</th>
<th>Estimated Effect</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appetizer Calories</td>
<td>-22.6</td>
<td>4078</td>
</tr>
<tr>
<td>Mean=512.6</td>
<td>(14.7)</td>
<td></td>
</tr>
<tr>
<td>Entree Calories</td>
<td>-13.2</td>
<td>5139</td>
</tr>
<tr>
<td>Mean=876.8</td>
<td>(12.1)</td>
<td></td>
</tr>
<tr>
<td>Dessert Calories</td>
<td>-33.6*</td>
<td>1824</td>
</tr>
<tr>
<td>Mean=501.1</td>
<td>(19.7)</td>
<td></td>
</tr>
<tr>
<td>Drink Calories</td>
<td>-11.2</td>
<td>2540</td>
</tr>
<tr>
<td>Mean=227.7</td>
<td>(8.3)</td>
<td></td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.
Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect of Menu Labeling on Nutrition

<table>
<thead>
<tr>
<th></th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat Cal.</td>
<td>-21.29*</td>
</tr>
<tr>
<td>Mean=671.79</td>
<td>(12.80)</td>
</tr>
<tr>
<td>N=5551</td>
<td></td>
</tr>
<tr>
<td>Total Fat (g)</td>
<td>-2.60*</td>
</tr>
<tr>
<td>Mean=75.72</td>
<td>(1.44)</td>
</tr>
<tr>
<td>N=5551</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat (g)</td>
<td>-0.81</td>
</tr>
<tr>
<td>Mean=26.51</td>
<td>(0.53)</td>
</tr>
<tr>
<td>N=5551</td>
<td></td>
</tr>
<tr>
<td>Cholesterol (mg)</td>
<td>2.52</td>
</tr>
<tr>
<td>Mean=255.08</td>
<td>(6.60)</td>
</tr>
<tr>
<td>N=5551</td>
<td></td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>-21.97</td>
</tr>
<tr>
<td>Mean=2817.32</td>
<td>(66.01)</td>
</tr>
<tr>
<td>N=5551</td>
<td></td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.

Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect of Menu Labeling on Nutrition (cont)

<table>
<thead>
<tr>
<th></th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Carbs (g)</td>
<td>-5.01**</td>
</tr>
<tr>
<td>Mean=113.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.25)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Dietary Fiber (g)</td>
<td>-0.31</td>
</tr>
<tr>
<td>Mean=10.29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Sugar (g)</td>
<td>-1.28</td>
</tr>
<tr>
<td>Mean=28.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.09)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>-0.84</td>
</tr>
<tr>
<td>Mean=60.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Vitamin A (%)</td>
<td>-0.96</td>
</tr>
<tr>
<td>Mean=141.24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6.14)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.

Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect of Menu Labeling on Nutrition (cont)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Estimated Effect</th>
<th>Mean</th>
<th>Standard Error</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin C (%)</td>
<td>-4.12</td>
<td>127.07</td>
<td>(4.65)</td>
<td>5551</td>
</tr>
<tr>
<td>Calcium (%)</td>
<td>0.23</td>
<td>49.41</td>
<td>(1.69)</td>
<td>5551</td>
</tr>
<tr>
<td>Iron (%)</td>
<td>1.04</td>
<td>52.36</td>
<td>(2.00)</td>
<td>5551</td>
</tr>
<tr>
<td>Ethanol (g)</td>
<td>0.50</td>
<td>8.22</td>
<td>(0.45)</td>
<td>5551</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.
Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Do People Choose “Value”?

- Some previous studies have found unanticipated responses to provision of information (Dranove, 2003; Dupas, 2011)
- Might consumers respond to calorie information by buying the “value” items that offer the biggest bang (# calories) for the buck?
- No evidence of this...

<table>
<thead>
<tr>
<th>Calories Per Dollar</th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean=51.20</td>
<td>-0.90</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01
Standard errors in parentheses (se); clustered at the party level.
Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Effect of Menu Labeling on Restaurant Business

<table>
<thead>
<tr>
<th></th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>-0.05</td>
</tr>
<tr>
<td>Mean=34.32</td>
<td>(0.63)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Profit</td>
<td>-0.06</td>
</tr>
<tr>
<td>Mean=25.37</td>
<td>(0.46)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
<tr>
<td>Labor Time (min)</td>
<td>-0.17</td>
</tr>
<tr>
<td>Mean=14.19</td>
<td>(0.21)</td>
</tr>
<tr>
<td></td>
<td>N=5551</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

Standard errors in parentheses (se); clustered at the party level.

Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
How Calorie Labels Change Error in Estimated # Calories Ordered

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>Control</th>
<th>Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordered Calories</td>
<td>1274.5</td>
<td>1303.7</td>
<td>1247.5</td>
</tr>
<tr>
<td>Estimated Calories</td>
<td>1098.1</td>
<td>1093.1</td>
<td>1102.6</td>
</tr>
<tr>
<td>Difference</td>
<td>176.4</td>
<td>210.6</td>
<td>144.9</td>
</tr>
<tr>
<td>P-value</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Cawley, Susskind, Willage (2018)
N=1,651. From Restaurant A.
In graphs, error over 300% not shown
Effect on Probability of Seeing Calorie Info, Supporting Labels

<table>
<thead>
<tr>
<th>See Calorie Info</th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Calorie Info</td>
<td>0.682***</td>
</tr>
<tr>
<td>Mean=0.467</td>
<td>(0.016)</td>
</tr>
<tr>
<td></td>
<td>N=3864</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In Favor of Calorie Info</th>
<th>Estimated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Favor of Calorie Info</td>
<td>0.073***</td>
</tr>
<tr>
<td>Mean=0.764</td>
<td>(0.017)</td>
</tr>
<tr>
<td></td>
<td>N=3569</td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01
Standard errors in parentheses (se); clustered at the party level.
Covariates: treated, day of week FE, month-by-year FE, table FE, seat FE, server FE, party size, gender, age, Hispanic, race, and education.
Summary of Results

• Menu labels:
  – Reduce calories ordered
    • Total calories decrease by 44.9 (3.0%)
    • Calories from entrée fall by 26.6 (3.2%)
    • Calories from appetizers fall by 22.5 (6.0%)
  – Reduce probability of ordering:
    • Entrée by 1.5 ppts (1.6%)
  – Conditional on ordering a dessert, order one that has 33.6 (6.7%) fewer cal
  – Limited effects on nutrition; reduces fat (by 3.4%) and carbs (by 4.4%)
    • No impact on fiber, saturated fat, cholesterol, sodium, sugar, or vitamins
Policy Implications

• New national menu label law may reduce # calories ordered, have small impact on body weight
  – No evidence people use the information to increase bang (# cal) for the buck

• No evidence of harm to restaurants
  – No significant change in labor time, revenue or (revenue – food costs)

• Exposure to labels increases support for having calorie information on restaurant menus by 9.6%
  – Vast majority of both groups support, which doesn’t support theory of strategic self-ignorance (Thunstrom et al., 2016)
Other Possible Benefits

- Other possible benefits of menu labels, not measured in our experiment:
  - Better matching of items to patron that doesn’t affect # calories ordered
  - Suggestive evidence of reformulation of recipes after labeling (Bleich et al., 2015; Bruemmer et al., 2012; Vesper et al., 2012)
Limitations and Future Research

• Limitations:
  – Experiment in two restaurants, on university campus, patrons 38% college students
  – Measuring immediate effect; effect may increase or decrease with exposure or time
  – Data on orders, not consumption
  – Can’t observe offsetting behavior (e.g. eating less) later
  – Despite limitations, contributes to the literature as a well-powered field RCT

• Future research: would be useful to test ways to make the calorie info more visible (prominence, context) and salient/useful
Thank you!

For more information:

• Email: JHC38@cornell.edu

• Web: www.johncawley.com
Panel: Analysis of Consumer Welfare & Consumer Protection Policy
Break 2:30-2:50pm

Please be reminded that no food or drinks are allowed in the Auditorium.
Keynote Address

Daniel Hamermesh, Barnard College & Institute of the Study of Labor (IZA)
Time Use, Time Loss: Can the Consumer Be Injured?

Daniel S. Hamermesh*

Barnard College, IZA, Univ. of Texas, Royal Holloway Univ. of London and NBER
Questions and Introduction

• “Time is money” But how much? How much for whom? How does it affect behavior?

• My background—history on studying time:
  2. 30 years of academic papers.
1. Do We Have More Money or More Time than our Grandparents?

- Life expectancy: U.S. and U.K.
- GDP/capita: U.S. and U.K.
Time is Money

- Our income grows with time and typically as we age, since real earnings rise with age. Time doesn’t.

- How does this play out in our behavior? Central point—outside of work, even the wealthiest can’t cut back on time: Sleep; sex, leisure of nearly all kinds.
"My husband and I make love 6 times a week. We outsourced our sex life to a young couple overseas."
• How Value of Time Affects What We Do

  1. Use time-diary data—for U.S., France, Germany. The American Time Use Survey (ATUS), done by BLS, 2003-current:

  a. One person/household, 1 day only.
  b. Diary filled out next morning, 2-5 months after final CPS interview. Thus have all CPS variables. Day runs 4:00AM-3:59AM.
  c. No specified time intervals. >400 coded categories (coding by BLS based on verbal responses in diary).
  d. 1800/month in 2003, about 1000/month since.
2. Look first at non-workers—people without earnings who say they don’t work.

3. Examine things that take lots of time, few $ or €. Sleep, TV-watching are the best examples—and they account for over 10 hours of the average adult’s day (more in the US than in F or D, bec we watch more TV)

Table 2
Table 2. Income Effects on Time Use (Minutes/Day in Response to +10,000 ($ or €) Annual Income): Non-workers U.S., 2003-15; France, 2009-10; Germany, 2012-13*

<table>
<thead>
<tr>
<th></th>
<th>Home Production</th>
<th>Sleep</th>
<th>Other Personal</th>
<th>TV-watching</th>
<th>Other Leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATUS:</strong>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Nonworkers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N = 51,997)</td>
<td>2.19</td>
<td>-2.05</td>
<td>1.10</td>
<td>-2.95</td>
<td>1.71</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.14)</td>
<td>(0.10)</td>
<td>(0.20)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.260</td>
<td>0.078</td>
<td>0.035</td>
<td>0.121</td>
<td>0.065</td>
</tr>
<tr>
<td><strong>Not working on holidays</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N = 2,050)</td>
<td>1.96</td>
<td>-2.07</td>
<td>1.00</td>
<td>-2.05</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>(0.83)</td>
<td>(0.62)</td>
<td>(0.45)</td>
<td>(0.92)</td>
<td>(1.06)</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.260</td>
<td>0.079</td>
<td>0.031</td>
<td>0.104</td>
<td>0.087</td>
</tr>
<tr>
<td><strong>Enquête:</strong>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N = 5,439)</td>
<td>-0.63</td>
<td>-3.00</td>
<td>3.19</td>
<td>-7.07</td>
<td>7.52</td>
</tr>
<tr>
<td></td>
<td>(1.74)</td>
<td>(1.22)</td>
<td>(1.53)</td>
<td>(1.49)</td>
<td>(2.03)</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.324</td>
<td>0.122</td>
<td>0.068</td>
<td>0.101</td>
<td>0.208</td>
</tr>
<tr>
<td><strong>Zeitverwendungserhebung:</strong>****</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N = 1,993)</td>
<td>0.82</td>
<td>-3.35</td>
<td>-4.10</td>
<td>-5.68</td>
<td>12.31</td>
</tr>
<tr>
<td></td>
<td>(2.18)</td>
<td>(1.49)</td>
<td>(1.19)</td>
<td>(1.81)</td>
<td>(2.70)</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.221</td>
<td>0.068</td>
<td>0.053</td>
<td>0.080</td>
<td>0.102</td>
</tr>
</tbody>
</table>

*Standard errors in parentheses below the parameter estimates. Those in the French and German equations are clustered on the individuals.

**The equations also include a quadratic in age; indicators and numbers of children in several age groups; gender, marital status and their interaction; a vector of indicators of educational attainment; and vectors of indicators of state of residence, metropolitan status, year, month and diary day.

***The equations also include a quadratic in age; a vector of indicators of educational attainment; indicators and numbers of children in several age groups; gender, coupled status and their interaction; and vectors of indicators of the month, diary day and region.

****The equations also include a quadratic in age; indicators of number of children under age 10; gender, marital status and their interaction; and, vectors of indicators of quarter, diary day, educational attainment and East Germany.
3. Look at workers—people who usually work, and worked on the diary day. Changing incentives can affect whether they change work time too.

   a. Same outcomes—sleep and TV. Table 3

   b. Wage effects same as income for non-workers.

4. Conclusion: Even within non-work time, change in wage alters time use. Does so more on things that, given time-intensity, allow more easy substitution—TV vs. sleep.
Table 3. Parameter Estimates, Sleep and TV-watching (Minutes/Day in Response to +$10 Hourly Earnings, +$10,000 Other Annual Income): Married Workers, ATUS 2003-15*

<table>
<thead>
<tr>
<th>Ind. Var.:</th>
<th>Sleep</th>
<th></th>
<th>TV-watching</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Annual Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>0.061</td>
<td>-0.205</td>
<td>-0.229</td>
<td>-1.008</td>
</tr>
<tr>
<td></td>
<td>(0.220)</td>
<td>(0.162)</td>
<td>(0.263)</td>
<td>(0.177)</td>
</tr>
<tr>
<td>Hourly Earnings</td>
<td>-1.153</td>
<td>-0.711</td>
<td>-2.212</td>
<td>-2.305</td>
</tr>
<tr>
<td></td>
<td>(0.558)</td>
<td>(0.651)</td>
<td>(0.668)</td>
<td>(0.687)</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>0.122</td>
<td>0.117</td>
<td>0.113</td>
<td>0.073</td>
</tr>
<tr>
<td>Ind. Var.:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-0.238</td>
<td>-0.567</td>
<td>-0.507</td>
<td>-1.008</td>
</tr>
<tr>
<td></td>
<td>(0.202)</td>
<td>(0.162)</td>
<td>(0.250)</td>
<td>(0.177)</td>
</tr>
<tr>
<td>Hourly Earnings</td>
<td>-1.064</td>
<td>0.207</td>
<td>-2.130</td>
<td>-2.633</td>
</tr>
<tr>
<td></td>
<td>(0.512)</td>
<td>(0.608)</td>
<td>(0.635)</td>
<td>(0.666)</td>
</tr>
<tr>
<td>Work Time</td>
<td>-0.186</td>
<td>-0.170</td>
<td>-0.173</td>
<td>-0.124</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>0.260</td>
<td>0.232</td>
<td>0.198</td>
<td>0.131</td>
</tr>
<tr>
<td>N =</td>
<td>18,122</td>
<td>19,526</td>
<td>18,122</td>
<td>19,526</td>
</tr>
</tbody>
</table>

*All equations also include a quadratic in age; indicators and numbers of children in several age groups; a vector of indicators of educational attainment; and vectors of indicators of state of residence, metropolitan status, year, month and diary day.
5. It’s not just these time-intensive activities—people will switch toward things that take lots of $$ (€€)
   a. Look at restaurant eating, sports events/museum-going.
   b. Results—Table 5.
Table 5. Income Effects on Time Use (Minutes/Day in Response to +10,000 ($ or €) Other Annual Income): Non-workers U.S., 2003-15; France, 2009-10*

<table>
<thead>
<tr>
<th>Determinants of:</th>
<th>Eating Out</th>
<th>Sports/Arts</th>
<th>Eating Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob.</td>
<td>0.028</td>
<td>0.028</td>
<td>0.058</td>
</tr>
<tr>
<td>Cond. Mean</td>
<td>0.462</td>
<td>-0.556</td>
<td>-16.71</td>
</tr>
<tr>
<td>(0.002)</td>
<td>(0.091)</td>
<td>(0.002)</td>
<td>(0.017)</td>
</tr>
<tr>
<td>Pseudo-R(^2)</td>
<td>0.037</td>
<td>0.071</td>
<td>0.094</td>
</tr>
<tr>
<td>or Adj. R(^2)</td>
<td>0.026</td>
<td>0.026</td>
<td>0.168</td>
</tr>
<tr>
<td>N</td>
<td>51,997</td>
<td>51,997</td>
<td>5,407</td>
</tr>
<tr>
<td></td>
<td>8,834</td>
<td>2,408</td>
<td>1,154</td>
</tr>
</tbody>
</table>

*Standard errors in parentheses below the parameter estimates. Those in the French equations are clustered on the individuals.

**The equations also include a quadratic in age; indicators and numbers of children in several age groups; gender, marital status and their interaction; a vector of indicators of educational attainment; and vectors of indicators of state of residence, metropolitan status, year, month and diary day.

***The equations also include a quadratic in age; a vector of indicators of educational attainment; indicators and numbers of children in several age groups; gender, coupled status and their interaction; and vectors of indicators of the month, diary day and region.
“Feelings, nothing more than feelings”

• Do people care—do these incentives affect how people feel about things? Are they bothered?

• I don’t like “feelings”—should leave to sociologists. But economic choices do affect feelings.

• Theory—should feel stressed where relative scarcity is greater.

• So expect to see high-income, high-wage people more time stressed.
What is stressful?

In F, UK and D paid work is the most time-stressing. Housework is next most stressful. TV-watching, sleep the least.
Who is stressed for time—high- or low-earners? Examine data for 3 countries, early 2000s

<table>
<thead>
<tr>
<th>Country</th>
<th>Always or often</th>
<th>Sometimes</th>
<th>Rarely (almost never)</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
True even for non-workers: The higher one’s partner’s income, the more time-stressed one is. And if one works, partner’s extra earnings cause extra time stress.

Conclusion: It’s only feelings, but it is a loss.
Measuring the Losses

• Examples of lost time—personal:

• Trip to lunch when the other guy didn’t show--$2.75 subway fare + 1 hour of my time.
• Having to detour on sidewalk bec. of a private construction project. Just 1 minute for me, but lots of people over 2 years. A large total public loss of time, for a private gain (the builder’s).
• Listening to dreadful music for 15 minutes on hold while adjudicating credit-card charges.
• How measure value of this time—since we know it has value, and the time loss forces people into activities other than those they prefer?

• Huge literature on this—I found 96 studies, 64 in a 2007 meta-analysis. Lots of work, bec. used in valuing public investment projects. Some are subjective, others behavioral responses to changing transportation opportunities.

• What does it show?
Let $VOT = x w^*$,

$VOT$ = value of the time spent on activity,

$w^*$ = hourly wage,

$x$ = how a person values time spent outside the market, probably $0 \leq x \leq 1$. 
Figure 1. Distribution of Estimates of $x$ from 96 Studies
Figure 2. Distribution of Estimates of $x$ from 28 U.S. Studies
<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>U.S. Studies:</th>
<th>95% CI</th>
<th>Number of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Studies:</td>
<td>0.48</td>
<td>0.64</td>
<td>[0.56, 0.74]</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>0.65</td>
<td>0.74</td>
<td>[0.54, 0.95]</td>
<td></td>
</tr>
<tr>
<td>Recent Studies (2004+):</td>
<td>0.62</td>
<td>Recent U.S. Studies (2004+):</td>
<td>0.82</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>0.74</td>
<td>0.85</td>
<td>[0.58, 0.90]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.58, 0.90]</td>
<td>[0.55, 1.15]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1.** Estimates of the Value of Time as Fraction of Average Hourly Earnings (VOT/AHE) (Median, Mean, 95-Percent Confidence Interval, Number of Studies)
Summarizing VOT studies

• Estimate regression of $VOT$ against $US=1$, year published:

$$VOTPCT = 0.62 + 0.007(\text{Year}-1959) - 0.08US$$

(0.15) (0.004) (0.14)

• Conclude that $VOTPCT$ may be ↑ over time. And remember, $w^*$ surely ↑.

• But what about non-workers: For them $w^r \geq w^*$--so just calculate what $w^*$ is for observationally identical people who are earners.
Conclusions

• Time really is money. People respond to its value—and we can predict how different people will behave.
• We can value time—it’s less than the wage, but probably around half of wage, or wage one could earn.
• Picky-picky: Of course, non-market time varies for the same person:
  • 1. By activity engaged in.
  • 2. By time of day.
  • 3. By whom with.
• Thus all the calculations are averages for person with particular characteristics at average time of day and average activity.
• Should be used in wide variety of areas to value consumer losses.
Consumer Protection Economics Symposium

December 7, 2018 | Washington, DC

Keynote Address

Daniel Hamermesh, Barnard College & Institute of the Study of Labor (IZA)
Paper Session 2
Free Product Trials

Dmitry Lubensky¹  Eric Schmidbauer ²

¹Amazon Inc
²University of Central Florida

Consumer Protection Economics Symposium,
Federal Trade Commission, Dec 2018

The views presented here are of the authors alone and do not necessarily reflect those of Amazon Inc.
Free product trials

- Many sellers explicitly offer free trials of new products
  - Video and music streaming
  - Gym membership
  - Test drive a new car
  - Samples at the grocery store

- Many other products implicitly offer free product trials through returns

- Why do sellers do this?

- What is the effect of this practice on consumers? On welfare?
What product trials do

• A product’s value depends on its quality (common value) and how well the product fits a consumer’s particular tastes (match value)

• A free trial reveals quality, which may be unknown by consumers but known by the seller

• A free trial also reveals match value, which becomes known by consumers but not by the seller

• Seller’s tradeoff from product trial
  • Benefit: reveal a higher quality than the average product without a trial
  • Cost: cede an information rent to consumers regarding match
Literature

1. Firm is privately informed of quality

2. Firm is uninformed of quality
1. Firm is privately informed of quality
   - Unraveling argument $\Rightarrow$ full disclosure (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981)

2. Firm is uninformed of quality
1. Firm is privately informed of quality
   - Unraveling argument $\Rightarrow$ full disclosure (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981)
   - Naive consumers $\Rightarrow$ some non-disclosure (see Dranove and Jin, 2010 for a lit review)

2. Firm is uninformed of quality
1. Firm is privately informed of quality


   - Naive consumers ⇒ some non-disclosure (see Dranove and Jin, 2010 for a lit review)

   - Competition ⇒ some non-disclosure (Levin, Peck and Ye, 2009; Hotz and Xiao, 2013)

2. Firm is uninformed of quality
1. Firm is privately informed of quality
   - Unraveling argument $\Rightarrow$ full disclosure (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981)
   - Naive consumers $\Rightarrow$ some non-disclosure (see Dranove and Jin, 2010 for a lit review)
   - Competition $\Rightarrow$ some non-disclosure (Levin, Peck and Ye, 2009; Hotz and Xiao, 2013)

2. Firm is uninformed of quality
   - Promote consumer learning to improve match (Lewis and Sappington, 1994)
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   - Unraveling argument $\Rightarrow$ full disclosure (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981)
   - Naive consumers $\Rightarrow$ some non-disclosure (see Dranove and Jin, 2010 for a lit review)
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2. Firm is uninformed of quality
   - Promote consumer learning to improve match (Lewis and Sappington, 1994)
   - Demand rotations (Johnson and Myatt, 2006)
1. Firm is privately informed of quality
   
   - Naive consumers ⇒ some non-disclosure (see Dranove and Jin, 2010 for a lit review)
   - Competition ⇒ some non-disclosure (Levin, Peck and Ye, 2009; Hotz and Xiao, 2013)

2. Firm is uninformed of quality
   
   - Promote consumer learning to improve match (Lewis and Sappington, 1994)
   - Demand rotations (Johnson and Myatt, 2006)
   - Bayesian persuasion (Kamenica and Gentzkow, 2011)
Model

• Single seller with constant marginal cost $c \geq 0$
• Single consumer with unit demand
  \[ v = \theta + \alpha \varepsilon \]
• Quality $\theta \sim F$ on $[\underline{\theta}, \overline{\theta}]$
• Match value $\varepsilon \sim G$ on $[\underline{\varepsilon}, \overline{\varepsilon}]$, density $g$, $E[\varepsilon] = \eta$
• Seller observes $\theta$ but not $\varepsilon$, decides whether to offer product trial, then chooses price $p$
• With product trial, consumer observes $v$ and $p$ and decides whether to purchase (utility $v - p$) or not (utility 0)
• Without product trial, consumer observes $p$ only, forms posterior $\mu$ about quality and decides whether to purchase
Equilibrium

- Let $\mu$ be the average quality of sellers that don’t offer trial.
- Let $\pi(\theta)$ be the maximized profit of type $\theta$ when offering trial, i.e.
  \[
  \pi(\theta) \equiv \max_{p} (p - c)(1 - G(\frac{1}{\alpha}(p - \theta)))
  \]
- Net benefit of allowing product trial
  \[
  \Delta(\theta, \mu) = \pi(\theta) - (\mu + \alpha \eta - c)
  \]
- If $\alpha = 0$ then $\Delta(\theta, \mu) = \theta - \mu \Rightarrow$ all types offer trial (Milgrom, 1981)

- Lemma 1 In any equilibrium sellers follow a threshold policy $t$ and allow trial if and only if $\theta \geq t$. 
Disclosure benefit and learning cost

Equilibrium threshold $t$ given by:

$$\Delta(t, \mu(t)) = 0 = \pi(t) - (\mu(t) + \alpha \eta - c)$$

$$= (t - \mu(t)) - (t + \alpha \eta - c - \pi(t)).$$

$$\boxed{B(t)} \quad \boxed{C(t)}$$
Disclosure benefit and learning cost

Equilibrium threshold $t$ given by:

$$\Delta(t, \mu(t)) = 0 = \pi(t) - (\mu(t) + \alpha \eta - c)$$

$$= (t - \mu(t)) - (t + \alpha \eta - c - \pi(t)).$$

**Disclosing $\theta$ but not $\varepsilon$**

\[ p \]

\[ t + \alpha \eta \]

\[ \mu(t) + \alpha \eta \]

\[ q \]
Disclosure benefit and learning cost

Equilibrium threshold $t$ given by:

$$\Delta(t, \mu(t)) = 0 = \pi(t) - (\mu(t) + \alpha \eta - c)$$

$$= (t - \mu(t)) - (t + \alpha \eta - c - \pi(t)).$$

---

**Disclosing $\theta$ but not $\varepsilon$**

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<td>$t + \alpha \eta$</td>
<td>$\mu(t) + \alpha \eta$</td>
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**Learning $\varepsilon$ given $\theta$**

<table>
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</tr>
<tr>
<td>$\mu(t) + \alpha \eta$</td>
<td>$t + \alpha \varepsilon$</td>
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</table>
Proposition 1  All types offer free trials only if $C(\theta) \leq 0$ and $\alpha$ is sufficiently small. Otherwise, there exists a $t \in (\theta, \bar{\theta}]$ so that the seller offers a trial if and only if $\theta \geq t$. Furthermore, if $\mu''(t) < 0$ then the equilibrium is unique.
Equilibrium & Comparative statics

Proposition 1 All types offer free trials only if $C(\theta) \leq 0$ and $\alpha$ is sufficiently small. Otherwise, there exists a $t \in (\theta, \bar{\theta}]$ so that the seller offers a trial if and only if $\theta \geq t$. Furthermore, if $\mu''(t) < 0$ then the equilibrium is unique.

Proposition 2 When the threshold is unique, the proportion of types offering free trials increases in the marginal production cost and decreases in the relative importance of match $\alpha$. 
Commitment power

Proposition 3 A firm with commitment power
- uses a threshold policy, and
- offers product trial only when it is below the threshold value.

Discussion
- Because consumers are Bayes rational, for every free trial policy the expected posterior is the prior (i.e. $E[\mu] = \eta$). Thus no ex-ante demand shift benefit from offering the trial.
- Threshold determined solely by the cost of demand rotation, which increases monotonically in $\theta$. Therefore, offer a trial only below a threshold.
Policy implications: “Cooling-Off” Rules

- The FTC’s Cooling-Off Rule gives consumers a 3-day right to cancel a sale under certain circumstances.
- Effectively mandatory product trial

Remark 1  *Consumer surplus rises with a mandatory product trial policy.*

Discussion

- All types above $t$ would have disclosed without policy, therefore effect only for $\theta < t$
- Without policy, consumers receive zero surplus
- With policy, consumers receive positive surplus
Welfare Effects of a “Cooling-Off” Rule

- Let $\varepsilon^*(\theta)$ be the threshold match value that purchases at the seller’s profit-maximizing price.

$$
\Delta W(\theta) \equiv \int_{\varepsilon^*(\theta)}^{\bar{\varepsilon}} (\theta + \alpha \varepsilon - c)f(\varepsilon)d\varepsilon - \int_{\varepsilon}^{\bar{\varepsilon}} (\theta + \alpha \varepsilon - c)f(\varepsilon)d\varepsilon
$$

$$
= \int_{\varepsilon}^{\frac{c-\theta}{\alpha}} (c - (\theta + \alpha \varepsilon))f(\varepsilon)d\varepsilon - \int_{\frac{c-\theta}{\alpha}}^{\varepsilon^*(\theta)} (\theta + \alpha \varepsilon - c)f(\varepsilon)d\varepsilon
$$

Welfare benefit of mandatory trial

Welfare cost of mandatory trial

Remark 2 A policy of mandatory product trial reduces the total quantity traded, both from consumers with willingness to pay above and below the production cost. Therefore the welfare effect of the policy is ambiguous.
1. A product trial discloses the seller’s private information about quality but also endows the buyer with private information about match.

2. This results in a tradeoff:
   - upward demand shift by separating from non-disclosing lower types
   - demand rotation and ensuing loss of information rents

3. In equilibrium trial is offered by the seller if the quality exceed a threshold value.

4. Consumers always benefit from mandated free trials (i.e. “cooling off period” laws) while the welfare effects are ambiguous.
Comments on Lubensky & Schmidbauer: “Free Product Trials”

Lawrence J. White
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Presentation at the FTC Symposium on Consumer Protection Economics, Washington DC, December 7, 2018
Overview

- The issue
- What L&S do
- What they find
- Some comments/suggestions
- Conclusion
The issue

- Why don’t asymmetric information situations “unravel” upward? Why don’t higher-quality firms offer credible information? (Why don’t buyers insist on such information?)
  - Any firm with above-average quality should want to demonstrate its quality and thereby escape the undifferentiated pool

- Is it only the costs of providing the information – including the costs of credibility – that impede this unraveling?
What L&S do

- Build a model of x2 asymmetric information
  - Vertical quality
  - Horizontal ("matching") information
- Information revelation yields 2 kinds of info
  - Vertical quality
  - Horizontal location (e.g., location on the Hotelling line)
- Characterize equilibrium
- Explore what happens when the firm has commitment capabilities
- Explore policy: mandatory disclosure
What L&S find

- Disclosure of vertical quality has the usual outcome
  - Tendency toward upward unraveling; improves welfare
- Disclosure of horizontal position acts like a cost of disclosure
  - May impede disclosure
- Firms may or may not want to commit to disclosure
- Mandatory disclosure has ambiguous welfare result
Comments/suggestions

- Describe the horizontal revelation as something akin to revealing location on the Hotelling line
  - Instead of consumers’ “learning their own tastes”
- Be clearer as to what the firm is committing to
- Consider other potential policies
  - Mandatory cooling-off period? Mandatory warranty? Minimum quality standards?
- What about the credibility of the information?
- Could information disclosure be continuous rather than all-or-nothing?
Why don’t asymmetric information situations unravel upward?

The implicit cost of revealing horizontal information may be part of the story

There are interesting possibilities that can be pursued further

More research!
Consumer Protection Economics Symposium
December 7, 2018 | Washington, DC

Paper Session 2
Search Costs, Hassle Costs, and Drip Pricing: Equilibria with Rational Consumers and Firms

Michael R. Baye, Indiana University
John Morgan, University of California, Berkeley

Presentation for the Federal Trade Commission’s Consumer Protection Economics Symposium
December 7, 2018
A Hypothetical Journey to Help the Commission Protect Consumers

baye morgan economics of e-commerce new

Google Search  I'm Feeling Lucky
Landing Page After Clicking “Feeling Lucky”
Next Page After Clicking “Add to Basket”
Next Page After a Click and More Keystrokes
Page After a Click and Even More Keystrokes

The Economics of E-Commerce

This comprehensive collection, edited by two pioneers of e-commerce, presents thirty of the most important papers written in the fields of economics, marketing and strategy. Topics covered include evaluation of the benefit to consumers of competition and product variety online, examination of auctions and reputational feedback mechanisms designed to mitigate informational asymmetries in online markets, the debate on digital property rights including privacy, piracy and the open source movement. Together with an original introduction by the editors, this title provides a readily accessible wealth of material on the subject of e-commerce, invaluable to scholars and practitioners alike.

Dear Joe, I thought this book might help you decipher what Bruce Kobayashi and the other economists in the Bureau of Economics are telling you. Thank you so much for all you do to protect consumers.

continue to review & place order
Page After Clicking “Continue to Review and Place Order”
The Economics of E-Commerce

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Finally a Price after 15 Minutes in...

Price: $19.95
Finally a Price after 15 Minutes in...

Price: $19.95
Popup Window After Clicking “Continue”
At Last... the Final Checkout Page

Merchandise: $19.95
Service Charge: $78.99
Total Before Tax: $98.94
Estimated Tax: $7.02
Order Total: $105.96

By clicking the "Place Order" button I agree to be bound by the Terms of Use and Privacy Notice.
At Last... the Final Checkout Page

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<thead>
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<tbody>
<tr>
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By clicking the "Place Order" button I agree to be bound by the [Terms of Use](#) and [Privacy Notice](#).
Questions

• If consumers are rational, can firms benefit from such strategies?

• Do such strategies harm consumers?
Focus on a Particular Flavor of “Drip Pricing”

• Obfuscation of compulsory charges to buy a specific product
  • Firm fails to disclose “hidden charges” until checkout; costly for a consumer to discover a firm’s price, which might be “dripped” to consumer during the purchase process
  • Polar case: Consumer learns nothing about price until after incurring “hassle costs” of navigating to the “checkout page”
  • Non-Directed Search

• Flavors not considered
  • Upselling/optional add-on charges (e.g., baggage fees, etc.)
  • Directed search
Key Elements of Drip Pricing

• Total price revealed over time and/or after considerable “hassle”

• Total price disaggregated into buckets
Conventional Wisdom

• Drip pricing seeks to exploit behavioral biases of consumers

• Won’t work with fully rational consumers

“To summarize, the theoretical models in the economics literature find that rational expectations would prevent consumers from being harmed by drip pricing and related practices. Consumers with rational expectations would recognize when firms are likely to charge undisclosed additional fees, and would refuse to purchase the product unless the firms offered sufficiently large discounts to the advertised component of the price. However, several theories identify departures from rational expectations that could cause consumers to be harmed by drip pricing.”
Brown, Hossain and Morgan (QJE, 2010)

“Theoretical predictions on the profitability of shrouded pricing frequently depend on the rationality level of consumers. The literature makes a distinction between shrouded charges that are unavoidable (surcharges) and avoidable (add-ons). **Shrouding a surcharge is not optimal when all consumers are fully rational and disclosure is costless (Milgrom 1981; Jovanovic 1982).** However, shrouding may be optimal with boundedly rational consumers.”
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“Theoretical predictions on the profitability of shrouded pricing frequently depend on the rationality level of consumers. The literature makes a distinction between shrouded charges that are unavoidable (surcharges) and avoidable (add-ons). Shrouding a surcharge is not optimal when all consumers are fully rational and disclosure is costless (Milgrom 1981; Jovanovic 1982). However, shrouding may be optimal with boundedly rational consumers.”
Hold your Horses!
Our Paper

• Drip pricing can be profitable with fully rational consumers
• Endogenize firms’ abilities to impose informational frictions

• Identify a continuum of drip pricing equilibria
  • Ordered by consumer harm
  • Don’t arise unilaterally; require coordination
  • Are fragile
Our Approach: Extend Search Models to Allow for Endogenous Hassle Costs

• Classical search models: Costs $c > 0$ for a consumer to visit a retailer to obtain a price quote
  • Exogenous cost (phone call, shoe-leather cost, etc.) of visiting a retailer
  • Non-directed search
• We add an endogenous hassle cost: After incurring $c > 0$, it costs $\kappa_i \geq 0$ for a consumer to discover retailer $i$’s price
  • Each firm $i$ unilaterally chooses $\kappa_i$
  • No drip pricing: $\kappa_i = 0$
  • Drip Pricing: $\kappa_i > 0$
• Setting $\kappa_i > 0$ is different than a simple comparative static on $c$
• Do this using Reinganum’s seminal model of equilibrium search
Why the Reinganum (1979) Model?

• Simplest model sufficient to support a non-degenerate distribution of product prices in equilibrium
  • Price dispersion stems entirely from costly information (search frictions)
• Similar vintage to Milgrom (1981) and Jovanovic (1982)
• Allows us to focus on how drip pricing/obfuscation affects markets purely through its impact on the cost of obtaining price information
  • Abstracts from reputation, uncertain product quality, etc.
• Allows us to demonstrate simply that there is no need to throw rationality under the bus to gain insights about how drip pricing/obfuscation might impact welfare
Key Elements of Classical Reinganum Model

• Many firms, identical products

• Heterogeneous marginal costs: $G(m)$ on $[\underline{m}, \overline{m}]$

• Monopoly price of firm with marginal cost $m$: $\rho_m = \frac{\varepsilon}{1+\varepsilon} m$

• Identical consumers (isoelastic demand) sample firms at random with recall
  • Non-directed search
  • Number of consumers visiting each firm is independent of firm’s identity or reputation, normalized to unity

• Exogenous search cost $c > 0$ per firm visited

• Optimal sequential search, stationary reservation price, $r_c$
Timing and Equilibrium

• Timing
  • Firms set prices, then consumers search and make purchase decisions

• Equilibrium
  • Each firm’s price is optimal, given the reservation price of consumers
    • Firms with lowest costs (monopoly prices below $r_c$) charge their monopoly prices
    • Firms with highest costs (monopoly prices above $r_c$) charge the reservation price
  • Reservation price is optimal, given the distribution of firm prices
Extend Reinganum to Allow for Drip Pricing

• Prior to search, firms set prices and a hassle cost \( \kappa_i \in [0, \bar{\kappa}] \)
  • \( \bar{\kappa} \): Hassle cost at which a consumer paying \( c \) to visit the firm with the highest monopoly price would earn exactly zero consumer surplus at that price
  • \( \kappa_i = 0 \): All-in price disclosed on landing page
  • \( \kappa_i > 0 \): Blank (uninformative) landing page; must navigate more pages to find total price

• Consumers have rational beliefs about hassle costs
Landing Page With Drip Pricing: Must Expend $\kappa_i > 0$ to Find Firm $i$’s Total Price
Landing Page Without Drip Pricing:
Expend $\kappa_i = 0$ to Find Firm $i$’s Total Price
Three Scenarios

• Exogenous, common hassle costs

• Endogenous hassle costs, but costless for a firm to impose

• Endogenous hassle costs, but costly for a firm to impose
Proposition 1: Common, Exogenous Hassle Costs

• When hassle costs $\kappa \in (0, \bar{\kappa}]$ are exogenous, they raise industry profits and reduce consumer welfare.

• Intuition:
  • Prospective cost of sampling another firm is $c + \kappa$
  • Results in a Reinganum-type equilibrium with search costs of $c + \kappa$
  • Raises the reservation price from $r_c$ to $r_{c+\kappa}$
Proposition 2: Endogenous Hassle Costs, Costless for a Firm to Impose

• When it is costless for firms to impose hassle costs, a continuum of equilibria arise in which firms endogenously impose identical hassle costs $\kappa \in [0, \bar{\kappa}]$.

• Consumer welfare is ordered by $\kappa$; it is maximized when hassle costs are zero and declines as the common level of hassle costs increases. Industry profits ordered in reverse.

• Intuition:
  • Prospective cost of sampling another firm is $c + \kappa$, so results in a Reinganum-type equilibrium with search costs of $c + \kappa$
  • Each firm sets $\kappa_i = \kappa$
    • Unilaterally reducing hassle costs attracts no additional consumers (non-directed search)
    • Unilaterally raising hassle costs does impact reservation price or improve profits
A Closer Look at the Intuition

• Upon visiting a firm, a consumer’s reservation price depends on the exogenous search cost, \( c \), and the pricing/hassle cost decisions of other firms.

• The hassle cost imposed by an individual firm doesn’t impact the prospective cost of sampling another firm (i.e., the exogenous search cost and the expected hassle cost at the next firm visited).

• But imposing needless frictions may increase the firm’s costs
  • Costs of designing additional (and unnecessary) web pages and links
  • Costs from frustrated consumers abandoning their shopping carts
Proposition 3: Endogenous Hassle Costs, Costly for a Firm to Impose

• When hassle costs are endogenous and it is costly for firms to unilaterally raise them above some status quo, $\hat{K}$, then in equilibrium firms will not unilaterally impose hassle costs above the status quo.
  • Example: If the status quo entails no drip pricing, each firm has a strict unilateral incentive to not engage in drip pricing

• Potential Lock-in: Proposition 3 also works in reverse
  • When an industry is “locked in” to an equilibrium with hassle frictions, a firm will not unilaterally decrease hassle costs if doing so is costly.
  • Especially true of low-cost firms in our model, who gain nothing from industry-wide hassle costs
Concluding Remarks

- Coordinated vs. unilateral incentives
  - Section 5 of FTC Act or Section 1 of Sherman Act?
  - In the model, low-cost firms do not benefit from coordination
  - Caveats:
    - Common industry practices regarding disclosure may arise for benign or efficiency reasons
  - Full transparency unlikely feasible or efficient

- Industry lock-in
  - Theoretically possible that industry gets locked-in to a “bad” drip pricing equilibrium
  - Regulatory responses may be reasonable (e.g., DOT’s baggage fee disclosure policy)

- Incentives to induce directed search may mitigate these problems
  - Southwest’s “Transfarency” ad campaign

- Competition through retailer reputation may mitigate drip pricing problems
  - Reputation likely impacts who is visited first (directed search)
  - Also likely disciplines firm behavior when consumers have behavioral biases
Directed Search: Targeting Based on a Retailer’s Reputation
Discussion of Baye and Morgan

Joseph Farrell
UC Berkeley
FTC conference Dec 2018
Full information at purchase

- B&M assume purchase decision is after (hassle of) learning full price
Full information at purchase

• B&M assume purchase decision is after (hassle of) learning full price
• Contrast much discussion of drip pricing
Full information at purchase

• B&M assume purchase decision is after (hassle of) learning full price
• Contrast much discussion of drip pricing
• Both cases can arise
  – S&H, resort fees, aftermarkets, negative options
  – Psychological (semi-)commitment during hassle
  – Increasing marginal costs of exploration
    • Am I irrational to get “fed up with searching”?
Goal of fully rational model

• I agree this is a worthwhile research target
• But I’m not entirely sure why
B&M result on unilateral incentive

• In B&M it doesn’t pay to increase hassle costs of customer learning your price
  – nobody will buy from you without doing so—see assumption above
B&M result on unilateral incentive

• In B&M it doesn’t pay to increase hassle costs of customer learning your price
• Hence discussion of industrywide coordination
• Is this what we see?
Paper Session 2
A Review of Current Studies and Some Remaining Research Questions in Four Small-Dollar Credit Markets

J. Brandon Bolen, Mississippi College

Gregory Elliehausen, Board of Governors, FRB

Tom Miller, Jr., Mississippi State University

TMiller@business.msstate.edu

Consumer Protection Economics Symposium
Washington, DC
December 7, 2018
Consumer Credit in the U.S. has History

• “It is generally recognized that 19th century producers...floated on a vast sea of credit...but 19th century consumers depended on credit, too.”

• “In the Victorian era saving, frugality, and self-denial were ideals practiced by SOME, popular with MANY, but only in retrospect credited to ALL.”

• “If the test of a subject’s historical importance is the amount of controversy it generated, then consumer credit is one of the most significant subjects in the history of the American twentieth century.”

Financing the American Dream: A Cultural History of Consumer Credit, Dr. Lendol Calder, 1999
Utopia in Credit Markets

• Where Utopia exists:
  – Everyone would have plenty of money almost all the time.
  – When someone needed to borrow:
    • They would be treated “fairly” by all lenders.
    • Their loans have “reasonable” terms.
    • They would always pay back their loan on a “timely” basis.

• Eventually, however, we will arrive somewhere less than in Utopia.
  – I.E., Where we are mostly satisfied.
  – Personal Example: Buying a house

• Along the way, let’s support researchers in building a mosaic of empirical results in credit markets on which to build sound policy.
  – Academics and agency research staffs can provide labor.
  – How can government agencies and industry best provide data?
Our Overarching Goal

• Provide a “launching pad” to stimulate additional dispassionate, rigorous, and replicable research on important questions about these markets.

• In our paper, we strive to highlight current questions and debate concerning these markets.

• We do not aim to measure, or test, the effectiveness of specific regulations in these markets.
Historical Motivation

• The Consumer Credit Protection Act of 1968, Pub. Law 90-321 (22pp.)
  – Title I: Truth in Lending Act
  – Title IV: National Commission on Consumer Finance
    • Presidential bi-partisan commission
    • Studied primarily the small-dollar installment loan markets

• The small-dollar loan landscape has mushroomed since the 1990s.
  – Pre 1990’s: Finance company installment loans and pawn transactions

• Has data-driven research kept pace with the regulatory growth?
## Has Data-Driven Research Kept Pace with the Regulatory Growth?

### Restriction Growth Rates, from RegData©

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#### Average Annual Rate

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<td>Since 2010</td>
<td>1.2%</td>
<td>8.8%</td>
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#### Continuously Compounded Annual Rate

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<tr>
<td>1970-2017</td>
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<td>4.8%</td>
<td>4.4%</td>
<td>7.5%</td>
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<td>16.1%</td>
<td>21.8%</td>
<td>14.0%</td>
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</tbody>
</table>
Part of the Small Dollar Loan Landscape
(Some products in the non-prime financial ecosystem, 2018)

• Established Products
  – Pawnbroker Transactions
  – Vehicle Title Pawn
  – Payday Loans (Storefront and Online)
  – Finance Company Personal Cash Installment Loans

• Other Products
  – Refund Anticipation Loans
  – Rent to Own
  – Buy Here Pay Here
  – Advance Deposit Loans
  – P2P

• Emerging Products
  – Payday Installment Loans (Bricks and Mortar and Online)
  – Vehicle Title Installment Loans (Bricks and Mortar and Online)
# The Four Small-Dollar Credit Products  
(Similarities and Differences)

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<th>Designed Term</th>
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<td>Month</td>
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<tr>
<td>Vehicle Title Pawn</td>
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<td>Month</td>
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<tr>
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<td>6-24 months</td>
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<tr>
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<td>Amortizing</td>
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<td>4-6 months?</td>
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<td>(Bricks and Mortar and Online)</td>
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<tr>
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<tr>
<td>(Bricks and Mortar and Online)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## The Four Small-Dollar Credit Products

*(Access to Products: Regulation Methods)*

<table>
<thead>
<tr>
<th>Non-Bank Supplied Product</th>
<th>Do Some States Ban?</th>
<th>Priced Via State Regulated</th>
<th>Other State Regulations</th>
<th>The &quot;Payday&quot; Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Established:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pawnbroker Transactions</td>
<td>No*</td>
<td>Rate per month</td>
<td>Resale</td>
<td>Not Covered</td>
</tr>
<tr>
<td>Vehicle Title Pawn</td>
<td>Yes, 30</td>
<td>Rate per month</td>
<td>Resale</td>
<td>Covered</td>
</tr>
<tr>
<td>Payday Loans (Storefront and Online):</td>
<td>Yes, 12</td>
<td>Fee per $100</td>
<td>Amount Cap or Percent of Income</td>
<td>Covered</td>
</tr>
<tr>
<td>Finance Company Personal Installment Loans</td>
<td>No*</td>
<td>APR Cap</td>
<td>Application Fee</td>
<td>Somewhat Covered</td>
</tr>
<tr>
<td><strong>Emerging:</strong></td>
<td></td>
<td></td>
<td>Ancillary Products</td>
<td></td>
</tr>
<tr>
<td>Payday Installment Loans (Bricks and Mortar and Online)</td>
<td>Yes</td>
<td>Annualized</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Vehicle Title Installment Loans (Bricks and Mortar and Online)</td>
<td>Yes</td>
<td>Annualized</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>
## U.S. Regulatory History of Small Dollar Products

### State Regulation of Non-Bank Supplied Small Dollar Loan Products:

<table>
<thead>
<tr>
<th>Loans Type</th>
<th>Colonial Times</th>
<th>1916</th>
<th>1940</th>
<th>1968</th>
<th>Mid 1990s</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pawn Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional Installment Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payday Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto Title Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Federal Regulation of Non-Bank Supplied Small Dollar Loan Products:

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Colonial Times</th>
<th>1916</th>
<th>1940</th>
<th>1968</th>
<th>Mid 1990s</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>TILA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bureau</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Central Questions Surrounding All Small Dollar Loans, I

- Does access to small dollar credit help or harm consumers, overall?

- Are consumers irrational and uninformed about using these credit products?
  - For what types of consumers is high-rate credit likely to be rational?
  - Are decisions deliberative and purposeful?

- How helpful is disclosing loan terms to consumers?
  - Do consumers recall the terms of the loan?
  - Does disclosure dissuade consumers from using these loans?
Central Questions Surrounding All Small Dollar Loans, II

- What is the frequency of usage and purpose?
  - Who uses these products?
  - When do they use them? How?

- Does financial education matter to consumers?

- What are the effects of interest rate caps?

- Are “credit deserts” desirable or undesirable outcomes?
Questions Specific to Products, I

• Pawn
  – Who uses pawn brokers?
  – How often do people use them?
  – How do they use them?
  – What is the effect of the Military Lending Act?

• Title
  – Who uses title loans?
  – What is the repossession rate?
  – Do repossessions harm consumers?
Questions Specific to Products, II

• Payday
  – Why did payday loans reappear in the 1990’s?
  – What percentage of borrowers get “trapped”?
  – Why don’t more people default on payday loans?

• Installment, Traditional Lenders
  – How does the cost of producing these loans affect the break-even APR by loan size?
  – How do state rate caps limit and shape the supply of these loans, by loan size?

• Installment, Emerging
Summary

• We believe a need exists today for high quality, rigorous, and copious amounts of empirical research on consumer credit topics.

• We believe in constructing a mosaic of publicly available results generated by the scientific method.

• Access to high quality data is a fundamental requirement.
Thank You

J. Brandon Bolen, Mississippi College

Gregory Elliehausen, Board of Governors, FRB

Tom Miller, Jr., Mississippi State University

TMiller@business.msstate.edu

Consumer Protection Economics Symposium
Washington, DC
December 7, 2018
Consumer Protection Economics Symposium

Discussion of:

A Review of Current Studies and Some Remaining Research Questions in Four Small-Dollar Credit Markets

Brian Rowe
Federal Trade Commission
Figure 3.
Federal Regulations (1970-2017) for NAICS = 522390
Other Activities Related to Credit Intermediation
(Including Payday Lending)

Source: Author Calculations using RegData®
<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easier and faster to qualify at pawn shop than bank</td>
<td>41.5%</td>
</tr>
<tr>
<td>Banks do not make small dollar loans</td>
<td>17.5%</td>
</tr>
<tr>
<td>Do not qualify for a bank loan</td>
<td>17.3%</td>
</tr>
<tr>
<td>Pawn shop has more convenient hours or location</td>
<td>10.5%</td>
</tr>
<tr>
<td>Pawn shop feels more comfortable than a bank</td>
<td>2.2%</td>
</tr>
<tr>
<td>Do not trust banks</td>
<td>1.1%</td>
</tr>
<tr>
<td>Other</td>
<td>9.0%</td>
</tr>
<tr>
<td><strong>Payday</strong></td>
<td></td>
</tr>
<tr>
<td>Easier and faster to qualify at pawn shop than bank</td>
<td>40.6%</td>
</tr>
<tr>
<td>Banks do not make small dollar loans</td>
<td>20.0%</td>
</tr>
<tr>
<td>Do not qualify for a bank loan</td>
<td>14.9%</td>
</tr>
<tr>
<td>Pawn shop has more convenient hours or location</td>
<td>12.0%</td>
</tr>
<tr>
<td>Pawn shop feels more comfortable than a bank</td>
<td>1.3%</td>
</tr>
<tr>
<td>Do not trust banks</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

Source: 2015 and 2013 FDIC Unbanked/Underbanked CPS Supplements
Figure 6.22 2011 Primary Reason Households Need Funds from AFS Credit Products

<table>
<thead>
<tr>
<th>Reason</th>
<th>Underbanked</th>
<th>Unbanked</th>
</tr>
</thead>
<tbody>
<tr>
<td>For basic living expenses</td>
<td>43.0</td>
<td>53.6</td>
</tr>
<tr>
<td>To make up for job loss or decrease in income</td>
<td>17.1</td>
<td>19.1</td>
</tr>
<tr>
<td>For house or car repairs or to buy an appliance</td>
<td>9.5</td>
<td>11.8</td>
</tr>
<tr>
<td>For special gifts or luxuries</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>For school or childcare expenses</td>
<td>2.2</td>
<td>1.6</td>
</tr>
<tr>
<td>For medical, dental or death expenses</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>For legal expenses</td>
<td>0.6</td>
<td>0.1</td>
</tr>
<tr>
<td>Other</td>
<td>7.5</td>
<td>13.8</td>
</tr>
<tr>
<td>Don’t know/ Refused</td>
<td>4.3</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Percentage of Households That Have Ever Used AFS Credit

Notes: Percentages based on 1.6 million unbanked households and 5.6 million underbanked households that have ever used credit AFS. Percentages may not sum to 100 because of rounding.

Source: 2011 FDIC National Survey of Unbanked and Underbanked Households
EXHIBIT 4:
MOST BORROWERS USE PAYDAY LOANS FOR RECURRING EXPENSES

NOTES: Data represent percentage of borrowers who reported the reason for using their first payday loan based on 451 interviews. December 2011 - March 2012. Sampling error for the full-length survey of storefront payday loan borrowers is +/- 4.6 percentage points.

Survey participants were asked: Thinking back now to (that FIRST/the) time you took out a (online payday loan/payday loan/auto title loan), which of the following best describes what specifically you needed the money for?

1. To pay rent or a mortgage
2. To pay for food and groceries
3. To pay a regular expense, such as utilities, car payment, credit card bill, or prescription drugs
4. To pay an unexpected expense, such as a car repair or emergency medical expense
5. To pay for something special, such as a vacation, entertainment, or gifts
6. (Do not read) Other (specify)

The combined results for “Recurring Expenses” include Regular Expense (53 percent), Rent or Mortgage (10 percent), and Food (5 percent) and add to 69 rather than the expected 68 because of rounding decimals. The response options were randomized in this and other survey questions, so the order in which the respondent heard them varied to eliminate order bias.


Source: Pew Charitable Trusts, Payday Lending in America, July 2012
Paper Session 2
Closing Remarks

Wesley Wilson, University of Oregon & Editor - Economic Inquiry