

Nolan Miller – Research Statement (Short Version¹)
November 12, 2008

I. Introduction

My work focuses on strategic approaches to questions of importance to businesses and policymakers. It has addressed an array of practical areas, including industrial organization and business strategy, health economics, environmental regulation, international trade, design of reputation systems, and others. In recent years, the areas where I have concentrated the most are models of contracting, incentives, and competition in the health care sector and on the behavior of consumers living on the boundary of subsistence. My work tends to move up and back between more general, theoretical treatments and applied pieces that focus the general methods on particular business or policy problems. While the bulk of my work is theoretical, in recent years I have tended to complement theoretical analyses with empirical or experimental analysis.

II. Summary of Work to Date

In the past, my research has focused on three broad, though intercommected, themes. The first is the interplay between information, incentives, and welfare in organizations. The second is concerned with industrial organization and game theoretic models of strategic interactions, with a particular emphasis on studying the roles of delegation and commitment. This line of research includes a number of papers on health economics, the practical area on which I have concentrated the most. The third theme is concerned with exploring links between the theory of consumer behavior and decision making and actual behavior in policy-relevant situations. Below, I expand on each of these areas. Although much of my work is coauthored, for expositional purposes I will use the first person singular in describing my work. Bibliographic information is contained in footnotes and in my c.v.

IIA. Information, Incentives, and Welfare.

This group of papers deals with how organizations and institutions should be designed to ensure that resources are allocated efficiently and effectively, and that agents take actions appropriate actions. Under ideal conditions, markets do an excellent job of allocating resources efficiently (although they are indifferent to questions of equity). However, imperfections such as information asymmetries or externalities, may lead markets to perform quite poorly. This group of papers studies the interaction between market imperfections, incentives, and welfare.

“**Mechanism Design with Multidimensional, Continuous Types and Interdependent Valuations**”² and “**Eliciting Informative Feedback: The Peer Prediction Method**,”³ consider how people can be induced to reveal private information in order to guide public decision makers in circumstances where truthful revelation may lead to public decisions that, while in the overall public interest, are not in a particular agent’s interest. “**Mechanism Design ...**” considers a very abstract, theoretical version of the problem. The mechanism design problem has, to date, proven intractable when agents’ information is multidimensional (e.g., they care about both the size and location of a publicly-funded bridge) and agents’ payoffs are interrelated (e.g., others’ use of the bridge affects their own enjoyment), which is likely to be the case in real-world decisions. In this paper, I bring together tools from economics, statistical decision theory, and functional analysis to prove a powerful general result: if agents’ signals are correlated (as is likely to be the case in the real world), then it is possible to induce

¹ A longer version of this document is also available at www.ksg.harvard.edu/nhm/contact.htm .

² With John Pratt, Richard Zeckhauser and Scott Johnson. *Journal of Economic Theory*, 2007.

³ With Paul Resnick and Richard Zeckhauser, *Management Science*, 2005.

them to truthfully reveal their information (or more accurately, to reveal something arbitrarily close to the truth) using a system of “proper scoring rules”.

While “**Mechanism Design ...**” considers a very general version of the problem, “**Eliciting Informative Feedback ...**” considers a particular, important, applied one. In this paper, I lay out how a transfer scheme based on the ideas developed in “**Mechanism Design ...**” can be used to induce people to truthfully reveal their experiences with internet transactions in order to facilitate fair and honest trade. The mechanism asks people (raters) to predict the experiences of other raters, and the paper pays particular attention to implementation questions such as the types of questions that raters may be asked, the timing of how that information would be revealed, and how to structure incentives so as to induce raters to put effort into producing informative feedback.

Another group of papers focuses on issues related to the provision of incentives within organizations. “**Efficiency in Partnerships with Joint Monitoring**”⁴ studies how incentives can be designed to induce all members of a team to work hard when only the total output, not individual effort levels, is observable. In contrast to the classic result of Holmstrom (1982), which assumes agents cannot observe other agents’ actions, my paper shows that if agents can observe other agents’ actions (as seems reasonable in real-world team situations), an incentive scheme can be created that induces all agents to put forth efficient effort that is balanced (i.e., always distributes the full output) and respects individuals’ limited liability constraints. Thus, using agents to monitor other agents solves the partnership problem.

Other papers in this line of research include “**Screening Budgets**,”⁵ which considers the problem of dividing an organization’s resources between multiple units, and “**Possibly Final Offers**,”⁶ where I investigate optimal selling mechanisms that impose an element of risk on buyers through a seller threatening to walk away from the buyer with some probability if its offer is not accepted.

IIB-1. Industrial Organization/Representing Strategic Interactions

Another theme of my work considers the relationship between the way strategic interactions are modeled and the resulting predictions. One group shows how differences such as the Bertrand paradox (i.e., that the outcomes predicted by quantity-based competition and price-based competition differ) evaporate once the game is seen in a sufficiently general light, while another group shows that a firm can gain a competitive advantage by controlling how its opponent sees its approach to the game (e.g., in the Cournot-Bertrand case, whether the other firm thinks I am setting price or setting quantity).

“**The Equivalence of Price and Quantity Competition with Delegation**,”⁷ considers the issue of price vs. quantity competition in a differentiated-products environment. The paper connects the price vs. quantity literature with the strategic delegation literature, which studies how the owners of firms can manipulate the incentives of their managers in order to gain a strategic advantage in oligopolistic (few-firm) competition. I show that in quite general environments, if owners have sufficient ability to manipulate their managers’ incentives, then the equilibrium outcomes under price and quantity competition coincide. “**Strategic Trade and Delegated Competition**,”⁸ applies the main results from “**The Equivalence ...**” it to one of the main theoretical difficulties in strategic trade theory, that whether it is optimal to subsidize or tax domestic goods depends on whether firms compete by setting prices or quantities (Eaton and Grossman, 1986, *Quarterly Journal of Economics*). This paper shows that the real issue is not the nature of product-market competition (which policymakers cannot hope to observe), but rather is an empirical question that depends on quantities readily inferable from market-level data. In another related paper, “**Relative Performance as a Strategic Commitment Mechanism**,”⁹ I explore

⁴ *Journal of Economic Theory* (1997).

⁵ with Alex Wagner and Richard Zeckhauser. *Journal of Economic Behavior and Organization*, 2006.

⁶ with Nikita Piankov and Richard Zeckhauser. *Journal of Economics and Management Strategy*, 2006.

⁷ with Amit Pazgal, *RAND Journal of Economics*, 2001.

⁸ with Amit Pazgal, *Journal of International Economics*, 2005.

⁹ with Amit Pazgal. *Managerial and Decision Economics* (2002).

how, in delegation-game environments, the owners of firms can use differences in managers' attitudes toward relative performance to gain a strategic advantage.

More recently, I have become interested in more general versions of the strategic implications of how players approach games. That is, how adopting one or another high-level approach to the game affects opponents' behavior and the likelihood of success. In **"Budget or Target: The Choice Between Input and Output Strategies,"**¹⁰ I develop the general theoretical analysis of the question of whether it is better for a firm to compete by setting inputs (i.e., how much it will spend in competition) or outputs (i.e., the goal it will achieve), and show how our analysis informs our understanding of strategic interactions ranging from industrial competition to international relations (the U.S.-U.S.S.R moon race) to negotiations. **"Advertising Budgets in Competitive Environments,"**¹¹ is a companion paper to **"Budget or Target"** that takes the more general analysis to a particular applied problem of how firms should approach advertising competition.

A final paper in this area is **"The Effects of Environmental Regulation on Technology Diffusion: The Case of Chlorine Manufacturing"**¹² which considers the question of whether regulation leads to the adoption of environmentally superior technologies, i.e., whether environmental regulations promote efficiency.

IIB-2. Industrial Organization/Incentives in Health Care

The questions that arise in the study of health economics and health care markets are real, practical, and important, and issues of incentives arise in practically every aspect of the health care sector. Indeed, incentive issues are of even greater importance in health care problems, because there are so many places where price signals have been distorted. The health care arena also provides an excellent applied area in which to pursue my more general interests into the interplay between information and incentives, and in the role of strategic commitments in determining welfare. Given my background, I tend to approach problems in health from the perspective of industrial organization, applying models of competition and incentives to problems in health.

In **"Pricing Health Benefits: A Cost Minimization Approach,"**¹³ I study the question of how a cost-minimizing employer should design and price the health benefits packages it offers to its employees. The main results of this paper are that, first, because unhealthy employees value health benefits more than healthy ones, an employer who compensates its employees with wages and health benefits cannot use its compensation scheme to exclude the least healthy employees (except possibly by placing an upper limit on total insurance benefits). Second, an employer who follows the cost-minimization approach will offer the more generous plan whenever it is efficient to do so (although possibly to too few people). Thus, the problem of "adverse selection spirals" where adverse selection leads to higher prices which leads to even more adverse selection, is shown to be both avoidable and sub-optimal.

In **"Insurer-Provider Integration, Credible Commitment, and Managed Care Backlash,"**¹⁴ I consider the increasing dissatisfaction with managed care organizations such as HMOs that became apparent during the late 1990's. I argue that the arms-length relationship between insurer and provider present in traditional insurance allows the insurer to credibly commit to providing high-quality care in a way that integrated insurer-providers such as HMOs are unable to do. In light of this, consumers' distrust of managed care organizations may be entirely justified.

A third paper on health economics is **"Provider Choice of Quality and Surplus,"**¹⁵ which shows that if a health care provider cares about both profit and the quality it provides to its patients (as would be

¹⁰ with Amit Pazgal. *RAND Journal of Economics* (2006).

¹¹ with Amit Pazgal. *Quantitative Marketing and Economics* (2007).

¹² with Lori Snyder and Robert Stavins. *American Economic Review (Papers and Proceedings)*, (2003).

¹³ *Journal of Health Economics*, (2005).

¹⁴ *Journal of Health Economics* (2006).

¹⁵ with Karen Eggleston and Richard Zeckhauser. *Int. J. Health Care Finance and Economics*. (2006).

the case in, for example, a nonprofit hospital), this may give rise to counter-intuitive incentives on the part of the provider. In particular, it is possible that the provider may respond to an increase in the rate of its profits that it retains by decreasing quality.

IIC. Individual Decisions and Policies

A final branch of my research focuses on the interface between the theory of consumer behavior, real world behavior, and policies. My first major research project in this area is concerned with the consumption behavior of very poor consumers in China. The poor in China are extremely poor – over 30% of consumers live below the World Bank’s extreme poverty line of spending one (US) dollar per person per day. These consumers eat a very simple diet consisting of rice, vegetables (mainly cabbage) and meat when they can afford it in southern China, and wheat-based buns and breads, vegetables and meat when they can afford it in northern China. Despite their prevalence, little is known about the consumption decisions made by such consumers. This project is aimed at providing insight into the behavior of these consumers, and we expect it to yield several papers.

The data for the project come from a field experiment I (with Robert Jensen) conducted in two provinces of China, Hunan (south) and Gansu (north) during 2006, during which we subsidized the staple commodity (rice in Hunan, wheat in Gansu) for a randomly selected group of consumers, collecting detailed household and consumption data before, during and after the intervention.

The first project using the data aims at resolving one of the oldest mysteries in economic theory. This mystery that dates back to Marshall (1895), who proposed the theoretical possibility of “Giffen behavior,” a situation in which a consumer responds to an increase in the price of a good by consuming more of the good, a violation of the “Law of Demand.” Despite this idea appearing in virtually every microeconomics textbook, no convincing evidence has been found. In this paper, “**Giffen Behavior and Subsistence Consumption**” (formerly known as “**Giffen Behavior: Theory and Evidence**,”)¹⁶ we argue that Giffen behavior is theoretically most likely in situations where consumers face pressing subsistence concerns, as they do in our Chinese data set. We then show that our experimental evidence provides compelling evidence of the existence of Giffen behavior among the very poor, as well as broader evidence in favor of a model of consumption in the face of subsistence concerns. Beyond its significance for teaching and for economic theory in general, the study also provides insights into the behavior of very poor consumers and the effects of policies aimed at improving their nutrition by providing income or price subsidies. Papers that explore this aspect of the data are discussed below under current research.

III: Research -- Current Agenda

My current research agenda continues to develop a number of the themes from my earlier work. In particular, I have three major lines of research at this point, although there is some overlap.

The first line combines my interest in information, incentives and welfare with my interest in health economics. One project studies the relationship between information, in the form of health care report cards, and quality. It has long been argued that if consumers are given access to better information about health care providers’ quality they will flock to the best providers. Thus, competition will give all providers an incentive to improve quality. However, despite this argument’s intuitive appeal, the evidence suggests that health report card programs (RCPs) have certainly not led to uniform improvements in quality, and some have even argued that RCPs have reduced quality (e.g., Dranove et al. (2003)). In this paper (“**Report Cards, Incentives, and Quality Competition in Health Care**,”) I consider the fundamental argument underlying the justification for RCPs: will making more accurate information on quality available to consumers *necessarily* induce providers to increase quality? I find that better information need not improve overall quality. (Quick intuition: if low-quality providers know they can longer “get lucky” and look like high-quality providers, they will lose any incentive they might

¹⁶ With Robert Jensen (2008), *American Economic Review*, 98(4), 1553-1577.

have had to try and keep up with the industry leaders and fall even further behind them.) Further, I find that the impact of RCPs can be particularly harmful to vulnerable populations, such as the poor or elderly, who may be less mobile than others. Hence it may be important to couple a report card program with other policies targeted at improving quality for these vulnerable populations.

A second project continues to focus on information and health care quality, but instead focuses on the consumer side. Just as in the case of report cards, consumerism, where individual consumers acquire and use information from sources other than their health care providers to guide their health decision making, has been praised as a potential cure for health care quality deficiencies. In **“Demanding Patients: Consumerism and Quality of Care”** (joint with Hai Fang, John Rizzo, and Richard Zeckhauser), I evaluate the impact of “consumerism” on quality. The paper begins by arguing that because consumerist patients can take more of their doctors’ time, they can reduce the time available for other patients. Even taking into account that doctors will reallocate their time in response to some patients becoming more informed, it is still the case that consumerism can harm quality, sometimes harming quality for all patients. The theoretical predictions of the model are validated by looking at data from data from the 2000/2001 Community Tracking Survey (CTS) maintained at the Center for Studying Health System Change. The analysis finds a negative relationship between consumerism and several self-reported measures of quality, supporting the model’s predictions.

Finally, I am starting work on a project that studies Medicare Advantage (MA), the managed-care Medicare program that runs alongside traditional Medicare. This project (joint with Joe Newhouse, Tom McGuire, Jacob Glazer and others) starts from the premise that in MA the government has the opportunity to design the rules of competition between MA plans and asks how these rules should be designed to achieve the goal of inducing plans to provide high-quality care at low cost. This project is scheduled to produce several papers over the next few years.

The second major strand of my ongoing work focuses on individual decision making and policies. In particular, it involves policy-relevant field experiments that examine how the theory of individual decision making matches up with actual decisions, and how this information can be used to inform the design and evaluation of policies aimed at improving individual welfare.

The first of these field experiments is the China experiment described above, where we are now focusing on further analyzing the data and extending the theory in new directions. The second major paper using the China data is entitled **“Do Consumer Price Subsidies Really Improve Nutrition?”**¹⁷ This paper focuses on nutrition as the outcome variable of interest, rather than demand, and explores the impact of our experimental subsidy on nutritional outcomes and the implications of these results for public policy. We find that our experimental subsidy actually decreased caloric intake for households in Hunan, and had virtually no effect on households in Gansu (except perhaps for the poorest of the poor). Further, we find a good deal of heterogeneity in behavior even among the very poor. Thus, proper targeting and evaluation of programs such as food subsidies or other aid for the poor should take this heterogeneity into account, or else run the risk of misunderstanding the true effects of the policies.

A third paper using this dataset takes advantage of fortuitous timing. At the time we were collecting our data in late 2006, the world was beginning to experience a widespread, significant increase in food prices. In this paper, **“The Impact of the World Food Price Crisis on Nutrition in China,”**¹⁸ we use our nutritional data to analyze the impact of the change in food prices over the course of our survey on nutrition, and find little or no impact on nutrition.

The work on the first several papers on this project has suggested new avenues for investigation. In the Giffen goods paper, we use a new measure of household poverty: the share of calories they receive from the local staple good. In this paper, joint with Rob Jensen, we explore the use of staple calorie share as a poverty measure and point out several advantages of this method over those currently in use. Another project expands on the theoretical model used in the Giffen goods paper and extends it to other arenas. This project, joint with Daniel Hojman, explores the idea of optimization in the face of soft

¹⁷ with Robert Jensen. Revision requested, *Review of Economics and Statistics*.

¹⁸ with Robert Jensen, *Agricultural Economics*, 2008.

constraints (such as the subsistence calorie constraint in the Giffen goods paper) can be used to explain a wide variety of reference-dependent behaviors, including Giffen behavior, conspicuous consumption, mental accounting, and others.

The second field experiment project that I have under way is also on the theme of information, quality and welfare. I am currently working on a project (joint with Lori Benneer of Duke University) that studies contamination in private well water in North Carolina, looking at how by giving households information on the contaminants in their water (and, in particular, by manipulating the way this information is presented) the government can better induce households to take action to improve their water quality (which is not subject to regulation) and thereby protect their health. We will focus on several types of informational manipulations. The main treatment focuses on framing effects and considers how the way in which identical information induces different behavioral responses based on how it is framed. While there is ample evidence of the effect of framing on decisions in the laboratory, little is known about the extent to which these laboratory phenomena translate into the real-world, and thus whether framing effects are a lever that policymakers can use to spur people to action. Other informational manipulations include using relative performance information and using “bright line” standards. This project is currently in the data collection phase.

The third major branch of my ongoing research continues my work on game theoretic models of conflict. Outcome Commitments in Third Party Intervention: Theory and Application to U.S. Policy in Iraq, extends the ideas developed in my earlier work (see “Budget or Target: The Choice Between Input and Output Strategies” above) and applies it to the role of the U.S. in the conflict in Iraq. Much of the debate over U.S. policy in Iraq hinges on the level of U.S. commitment to the conflict. However, embedded in the debate is a question over how the conflict should be approached. Pro-war parties tend to emphasize goals and/or outcomes that will be attained (“We’ll stand down when they stand up.”), while anti-war forces tend to focus on input-based approaches (e.g. timetables for withdrawal). In this paper, I develop a model of strategic interaction in which a third party intervenes on behalf of a government in its conflict with insurgents and examines whether it is better for the intervener to adopt an input-based strategy (i.e., specify the total resources it will spend) or an outcome-based strategy (i.e., specify the goal that it will achieve). This paper is currently under review at the *American Economic Review*.

The Iraq paper raises a number of additional issues that I am not beginning to explore, including issues of how a government can credibly commit to outcome-based strategies. In addition to the papers described here, I have several others in progress that fit into this broad area. These include a paper that looks at how a firm should optimally allocate its sales force to multiple markets (i.e., is it better to match strong salespeople against rival firms’ strong people or against its weak people) and a paper that looks at how risk aversion by managers can be used to screen better managers from worse ones. Finally, some of the work on health care, especially the work on Medicare Advantage, also falls into this line of research.

**Nolan Miller -- Summary of Teaching Experience
November 12, 2008**

I. Introduction

This document contains a brief summary of my teaching experience. Section II discusses degree program teaching at Harvard, including summaries of my teaching evaluations. Section III discusses non-degree program teaching at Harvard. Section IV discusses teaching while a graduate student at Northwestern's Kellogg School. Section V briefly discusses my ongoing textbook project.

II. Degree Programs Teaching at Harvard's Kennedy School.

My teaching assignments at the Kennedy School include three required courses in advanced microeconomic theory. API 109, Advanced Microeconomic Analysis I, is the first semester of the required microeconomics sequence for students in the Masters program in International Development (MPA/ID). This program is aimed at giving doctoral-level training in economics to students who will ultimately go on to be development practitioners (rather than academics), as part of an interdisciplinary approach to international development. The other courses I teach comprise the two-semester sequence in PhD-level microeconomics for Harvard doctoral students other than those enrolled in the PhD program in economics. API 111, Microeconomic Theory I, is the first semester of this sequence. The course is jointly listed as Economics 2020a and HBS 4010, and is required for students in KSG's Public Policy PhD program, the Political Economy and Government PhD program, HBS's DBA program, and some students in the Health Policy PhD program. It is also frequently taken by students in the Kennedy School's masters programs (especially the MPP and MPA/2 programs) who are interested in a course in advanced microeconomics, the government department's PhD program, advanced undergraduates in economics and/or applied math, and students in PhD programs at MIT's Sloan School. API 112 is the second semester of this sequence (jointly listed as Economics 2020b and HBS 4011). Although I teach API 109 alone, API 111 – 112 is frequently taught with a co-instructor (usually either Chris Avery or Jerry Green).

All of these courses present the challenge of being taught at the doctoral level, but the students for whom the course is required often lack strong training in economics and/or mathematics, and, more importantly, they differ from most students in an economics department PhD program in that they are primarily interested in an applied area (e.g., international development, public policy, business, health policy) rather than in economic theory for its own sake. Nevertheless, most of these students will be doing professional-level work using the tools of advanced economics, and all of them will be using advanced economic reasoning in their professional lives. Thus I face the dual challenges of giving students the tools they need to do applied research or deal with professional economists, but at the same time helping them to see the connection between the technical tools and the policy questions that really interest them. Over the past ten years, I have made a lot of progress on balancing the "advanced" and "applied" mandates, and at this point all three of my courses are quite successful and among the highest rated economics courses at the Kennedy School.

The following table contains my teaching reviews for these courses. With the exception of my first semester here, my "instructor overall" ratings have always been over 4.0, and I have been over 4.5 in 14 out of 24 offerings, including the last 6 offerings and 11 out of the last 13 offerings. (A rating of 4.5 or higher qualifies for the "Dinner on the Dean" award and is considered excellent.) API 111 and 112 are generally co-taught with other instructors, and the "Course Overall" rating is for all instructors combined. The Instructor Overall rating is for me in particular.

Term	Course	Enrollment	Course Overall Rating	Instructor Overall Rating	Over 4.5
F99	API 109	65	3.33	3.61	
F99	API 111	33	3.5	3.56	
S00	ASI 112	17	4.29	4.29	
F00	API 109	58	4.06	4.39	
F00	API 111	33	4.06	4.33	
S01	API 112	25	4.18	4.5	*
F01	API 109	42	4.27	4.58	*
F01	API 109	41	4.5	4.67	*
F01	API 111	57	4.07	4.19	
S02	API 112	31	4	4.16	
S03	API 112	42	4.19	4	
F03	API 109	69	4.56	4.77	*
F03	API 111	59	4.23	4.61	*
S04	API 112	43	4.06	4.53	*
F04	API 109	70	4.28	4.63	*
F04	API 111	72	4.15	4.35	
S05	API 112	45	4.15	4.58	*
F05	API 109	71	4.15	4.42	
F05	API 111	56	3.5	4.56	*
F06	API 109	75	4.33	4.59	*
S07	API 112	34	4.26	4.6	*
F07	API 109	58	4.43	4.66	*
F07	API 111	59	4.60	4.70	*
S08	API 112	50	4.43	4.71	*

III. Other Teaching Experience at Harvard

In addition to my regular teaching assignment, I also fulfill several ad hoc assignments. For example, for the past few years I have taught a session of Joe Newhouse's second-year reading course for the health-policy economics-track students. When required, I also write and administer the Microeconomics Qualifying Exam for the public policy PhD program, and I frequently serve on examination committees for public policy PhD students.

I have also recently begun teaching in KSG's Executive Programs. For the last two years I have taught sessions on game theory and strategy in one of our executive programs. The ratings for 2008 are not yet available. In 2007, my rating for these sessions was 4.5/5, which was at the average of all sessions for the program. Given that this was my first time teaching in executive programs and the inherent complexity of the material (most of the other sessions are on non-technical topics), I believe the sessions went very well. Further, I found them to be quite enjoyable, and I hope to continue to be involved in executive program teaching in the future.

I also do a lot of work with our PhD students. Since most of our students are not doing explicitly theoretical research, I tend to be more of an informal advisor than a formal one. Nevertheless, I have served on the doctoral committees of three students (Lori Snyder (PPOL), Steve Anderson (PPOL), and Alex Wagner (PEG)). I have also co-authored and published papers with three PhD students (Lori Snyder, Alex Wagner, and Nikita Piankov (Economics)). I also lead job-market preparation sessions, mock job talks, and mock job market interviews.

IV. Teaching Experience Prior to Harvard

Before coming to Harvard, I taught at Kellogg, offering two sessions of managerial economics (one for the full-time MBA program, one for the part-time MBA program), as well as teaching the math review course for students in Kellogg's Executive MBA program.

V. Book Project: Applied Microeconomic Theory

My interest in making connections between the standard tools of microeconomic theory and policy-relevant applications has led to the production of the textbook in *Applied Microeconomic Theory* that I have been writing with Chris Avery. Too often the standard, doctoral-level courses in microeconomic theory are intended, or taught as if they were intended, to train future economic theorists. Even in economics PhD programs, most students will not be theorists but rather applied researchers who use the tools of economic theory to guide their thinking in (often) empirical studies, which are the predominant form of doctoral dissertation. While this is true in economics departments, it is even more true for KSG PhD students, virtually all of whom go on to study applied topics such as health, education, development, and environment, and for our masters students interested in advanced microeconomic analysis (e.g., MPA/IDs, MPA2s, and MPPs). These students are going to be focused on applied problems in public policy and/or international development. As such, they need a course in microeconomic theory that is going to help them make connections between the theory and real problems. The goal of this textbook is to meet this need.

The project began as a series of notes intended to help students in API 109 (MPA/ID microeconomic theory) and API 111 bridge the gap between the technical level of PhD level textbooks and their background (not usually economics majors) and interests (not interested in theoretical generalities for their own sake). Over time, the notes have incorporated applied material on topics such as the economic evaluation of welfare, and the impact of market imperfections such as those that are likely to be found in less-developed economies. These notes (which comprise the first half of the textbook) have been used in my fall classes for the last few years, and they have been available on my web page for the last two. They are widely used throughout the world as a guide to understanding economic theory. The web page has received approximately 15,000 hits over the past year, and I have received (voluntary) feedback from students and faculty at over 85 countries (over 300 foreign and 90 domestic institutions) since I started collecting this information in November of 2005.

Over the past year, Chris Avery and I have labored to turn these notes into the first half of a textbook, which we are calling *Applied Microeconomic Theory*, and he has joined me in writing new material based on what we cover in API 112. We have a nearly complete draft (530 pages) of the textbook at this point. Harvard University Press has agreed to publish the book, and we are in the process of signing a book contract. The intended audience of the book include students in applied doctoral programs and advanced undergraduate or masters programs.