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2007 (Oral): Industrial Organization, Econometrics.
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Dissertation Title:

Consumer Behavior in Health Insurance and Retirement Markets.

Committee:

Professor Justine Hastings
Professor Fiona Scott-Morton
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Expected Completion Date: May 2010

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Ph.D., Economics, Yale University, (Expected) May 2010
M.Phil., Economics, Yale University, 2008
M.A., Economics, Yale University, 2007
M.A., Economics (honors), Universidad de Chile, Santiago, Chile, 2005
Civil Engineer (honors), Mathematics, Universidad de Chile, Santiago, Chile, 2002

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Ryoichi Sasakawa Young Leaders Fellowship, 2008
 Dissertation Fellowship, Yale University, 2008-2009
 Carlos F. Diaz Alejandro Fellowship, 2005–2008
 Yale University Summer Fellowship, 2005–2007
 Yale University Graduate Fellowship, 2005–2008

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Teaching Fellow, Game Theory, Yale University (Spring 2008)
 Teaching Fellow, Intermediate Microeconomics, Yale University (Fall 2007)
 Teaching Fellow, Introduction to Microeconomics, Yale University (Spring 2007)

Research Experience:

Research Assistant to Justine Hastings, Yale University (2008, 2009)
 Research Assistant to Eduardo Engel, Yale University (2007)

Programming Experience: MATLAB, STATA, C++ and FORTRAN.**Papers:**

“Price Elasticity of Expenditure across Health Care Services”, Job Market Paper.

“Fettered Consumers and Sophisticated Firms: Evidence from Mexico’s Privatized Social Security Market”, working paper, with Justine Hastings.

“The Effects on Firm Borrowing Costs of Bank M&As”, Documentos de Trabajo, CEA, (2005), with Andrea Repetto and Rodrigo Valdes.

“Arbitrary Lagrangian-Eulerian method for Navier-Stokes equations with moving boundaries”, Computer Methods in Applied Mechanics and Engineering, (2004), with Raul Gormaz R. and Srinivasan Natesan

References:

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Dissertation Abstract

My dissertation studies how consumers react to incentives in two important markets: health care and retirement.

The first chapter (job market paper) of my dissertation estimates the price elasticity across health care services and demographic groups using unique data and policy experiments from the Chilean Health Care market. My results show that consumer responses to price variation depend on the type of health care they require and the demographic group that they belong. These results help us to interpret discrepancies in previous literature, and provide new evidence on responsiveness of consumer expenditures to co-payments for different types of health care expenditures. The second chapter (currently in progress) studies how consumers choose private health insurance, switch between plans, and time their entry into the market. The goal is to understand why people make these decisions and what factors are taken into consideration. Finally, the third chapter, joint with Justine Hastings, analyzes the Mexican privatized social security market. We examine how people manage, or fail to manage, their accounts and the role of mandated information both on investment decisions and strategic firm responses.

I. Price Elasticity of Expenditure across Health Care Services (Job Market Paper).

Policymakers in the U.S. are currently debating health care reforms where reducing large and growing medical expenditure is a priority. Quantifying expenditure elasticity with respect to out-of-pocket costs (price from here on), and how it varies with type of service and demographics variables is a central component of cost predictions under alternative health care policy designs.

Unfortunately, there is scarce empirical evidence on how consumers with different backgrounds respond to price when using different health services. In health insurance markets individuals tend to select generous plans if they expect higher usage or if they are risk averse. This creates an endogeneity problem that biases the estimates for price elasticity. Only few studies have been able to identify sources of exogenous price variation, but they have only been able to do so in limited settings. For example, based on the RAND Health Insurance Experiment of the 1970's, Manning et al (1987), addresses the endogeneity problem by randomizing consumers into health insurance plans with varying generosity. Kowalski (2009) and Eichner (1987) use health shocks to particular individuals with large families that shift their coinsurance rates from a fixed positive amount to zero to estimate the impact of such a decrease in coinsurance on total expenditures. In each of the prior papers, researchers have generally had to focus on total expenditures, and have not been able to examine how elasticities vary across health service. This limitation restrains the ambit of policymakers since many policies may use variation on coinsurance rates (out-of-

pocket) across health care services or across demographics in order to reduce the expenditures caused by moral hazard.

In this paper I use new and detailed individual-level census data from the Chilean health private system to bring new evidence on price elasticity of health care expenditures and the range to which elasticities vary with type of service and consumer demographics. I have detailed information from five different data sets that contain individual, dependents, and plan characteristics and detailed information on prices, claims, and out-of-pocket expenditure by individual and health care service. I combine these data to construct a panel of plan choices, prices for services, coinsurance rates and coverage caps for all participants in private sector.

I exploit key institutional features in the Chilean insurance market to circumvent the endogeneity problem. Specifically, the Chilean public insurance regulator changes prices across all health care services once a year, which forces private insurers to make corresponding changes in prices according to predetermined schedules. These changes generate variation in the costs of health care that are exogenous from the point of view of all insured individuals in the private market.

These comprehensive data allow me to estimate consumers' response to prices for many health care services and for different demographic groups. I find that consumers are much more responsive to prices in their demand for elective health care (home care, psychologist and physical therapy examination) than in their demand for acute health care (appendectomy, cholecystectomy (gallstones) and arm cast). The estimated elasticities for elective health care range between -2.08 and -0.32, whereas the elasticities for acute health care are close to zero. Moreover, the number of visits explained one third or more of the total elasticity. I also estimate the elasticities by income quartile and the results show that high-income people are five times more elastic than low-income people. I also find that older individuals are less elastic than young individuals. These findings show how the response to changes in prices of the insured depends on the type of health shock that they face and the demographic group that they belong. Policymakers can make use of these results by, for example, altering co-payments of other features of the insurance plan according to the type of health service or by demographics groups.

II. Private Health Insurance Choice under Mandatory Purchase and Many Choices (In Progress).

Many papers examine how individuals make decisions when facing many complex choices. This chapter studies consumer behavior under a complicated scheme in Chile's private health insurance market. Many features make the Chilean private health insurance market a rich environment to study consumer behavior. First, the purchase of health insurance is by mandate, and people can opt for public or private insurance. Second, individuals have to spend at least 7% of their taxable income. Third, private insurance companies are permitted to reject an application for insurance due to pre-existing conditions. Finally, there are more than three thousand plans that are offered by the 14 insurance companies. Using a unique individual-level data for the Chilean private health insurance system, I study the plan choices of individual. I focus on a consumer's decision to enter the market and switch between plans. The preliminary results on switching show that male workers are 13% more likely to switch than female workers; independent workers are more than 40% likely to switch than salaried workers or retiree.

III. Fettered Consumers and Sophisticated Firms: Evidence from Mexico's Privatized Social Security Market (with Justine Hastings)

There is growing empirical evidence that consumers may not choose optimally when faced with difficult or complex choices, particularly those involving risk and uncertainty. This chapter provides new evidence on consumer behavior from Mexico's privatized social security system and examines the role that mandated information can play in shaping consumer demand and market outcomes in the presence of sophisticated firms. We begin by examining whether or not accountholders manage their accounts efficiently. Overall, we find that workers do not pay attention to management fees when selecting accounts. We also examine the impact that mandated information had on the choice of fund managers. The fees charged by managers are complicated, involving multiple fees. Workers may have had difficulty calculating the lowest cost manager and the relative importance of fees compounded over time. Thus, the government created a single ranking of fees. This summary fee integrated contribution and balance fees according to particular assumptions. Unfortunately, the single ranking seems to be irrelevant for most of the population, not reflecting the true cost. We show that the mandated information doubled the estimated weight placed on the information on fees that is available to workers, but caused them to choose higher cost funds given their personal wage, balance and labor market characteristics.