General Information

This workshop on Health Risk Management and Insurance will be held Thursday-Friday, October 21-22, 2021, and will focus on health insurance economics and health actuarial science. The conference is organized by the GSU Department of Risk Management & Insurance and the Center for the Economic Analysis of Risk (CEAR). The goal is to bring leading researchers in these areas together to present their work to facilitate the exchange of ideas on these topics.

Organizers

Samson Tsz Chai Fung (Georgia State University) and Stephen Shore (Georgia State University) are the organizers of this workshop. Contact Samson Fung at tfung@gsu.edu or Stephen Shore at sshore@gsu.edu with questions about the workshop's program, and CEAR at cear@gsu.edu with questions regarding participation and logistics.

Attendance

Interested scholars are welcome to register without cost, space permitting. Please register at the following link: https://gsu.qualtrics.com/jfe/form/SV_5jpyhFJNYabec1E.

A Zoom link to the workshop will be sent via email prior to the event. More information can be found at the CEAR Event Page.

Location

Out of an abundance of caution, given the current elevated levels of COVID-19, this event will be held virtually. To access this workshop please register to attend via the link above.

Presentation timing

Session format – 40 minutes presenter; 10 minutes discussion including questions and answers.

The workshop schedule and paper descriptions, and links to the papers if available, are on the pages below. All times on the schedule are Eastern Daylight Time (UTC-4).
## PROGRAM – Thursday, October 21, 2021 (all times below are EDT)

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<td>“Long-Term Health Insurance: Theory Meets Evidence” – Hanming Fang</td>
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<td>“Analysis of Prescription Drug Utilization with Beta Regression Models” – Guojun Gan</td>
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Day 1 concludes

## PROGRAM – Friday, October 22, 2021 (all times below are EDT)

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<td>11:10 – 12:00</td>
<td>“Distributional Effect of Insurer Concentration on Premiums: Evidence from the Employer-Sponsored Health Insurance Market” – Haizhen Lin</td>
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14:30 Conference concludes
Speaker 1: Hanming Fang, University of Pennsylvania

Title: Long-Term Health Insurance: Theory Meets Evidence

Abstract: To insure policyholders against contemporaneous health expenditure shocks and future reclassification risk, long-term health insurance constitutes an alternative to community-rated short-term contracts with an individual mandate. In this paper, we study the German long-term health insurance (GLTHI) from a life-cycle perspective. The GLTHI is one of the few real world long-term health insurance markets. We first present and discuss insurer regulation, premium setting, and the main market principles of the GLTHI. Then, using unique claims panel data from 620 thousand policyholders over 7 years, we propose a new method to classify and model health transitions. Feeding the empirical inputs into our theoretical model, we assess the welfare effects of the GLTHI over policyholders’ lifecycle. We find that GLTHI achieves a high level of welfare against several benchmarks. Finally, we conduct counterfactual policy simulations to illustrate the welfare consequences of integrating GLTHI into a hybrid insurance system similar to the current system in the United States.

Speaker 2: Guojun Gan, University of Connecticut

Title: Analysis of Prescription Drug Utilization with Beta Regression Models

Abstract: The healthcare sector in the U.S. is complex and is also a large sector that generates about 20% of the country's gross domestic product. Healthcare analytics has been used by researchers and practitioners to better understand the industry. In this talk, I will present our recent work about the use of Beta regression models to understand the variability of brand name drug utilization across different areas with the U.S. The models are fitted to public datasets obtained from the Medicare & Medicaid Services and the Internal Revenue Service. Integrated Nested Laplace Approximation (INLA) is used to perform the inference. Some numerical results showing the performance of Beta regression models will also be presented.

Speaker 3: Evan Saltzman, Emory University

Title: Firm Learning in Selection Market: The Case of the ACA Exchanges

(Paper should be available in a future version of the program)

Abstract: Creating new markets with private sector participation has been the government's preferred mechanism for expanding health insurance. Previous analyses assume firms have full information since market inception. We study the welfare impact of firms learning about demand and cost by estimating an adaptive learning model of the California ACA exchange. We find firms’ knowledge of demand and cost increases social welfare by 25% of average subsidized premiums because firms underestimated premium sensitivity, resulting in excessive markups. Taxpayers and disadvantaged subpopulations disproportionately bear the social cost of firm misinformation. Simulations indicate risk adjustment creates larger economic tradeoffs when firms are misinformed.
Speaker 4: Ian Duncan, University of California Santa Barbara

Title: Closing the Financial Gap in Colombia’s Health Sector: A Proposed New methodology for calculating the UPC

(Paper not yet available publicly. Email Samson Fung to inquire about access to a copy of the paper.)

Abstract: Colombia has a publicly funded health insurance program that aims to have universal coverage; the population is covered by two regimes: non-contributory and contributory. Reimbursement is provided by the Colombian Treasury through insurers (EPSs). Reimbursement has traditionally followed insured members based on their age, sex and territory. The Colombian ministry of health asked our company (Santa Barbara Actuaries Inc.) to design a new reimbursement system that would more accurately project budget needs as well as reimbursement of individual member needs. The solution chosen was a risk adjustment system, an actuarial tool that enables equitable distribution of funds between risk-bearing entities, matching reimbursement to need for resources. Risk-adjustment systems are used by payers around the world to achieve payment accuracy; while there are differences between payment systems the fundamental principles are the same internationally. We developed risk adjustment models for Colombia using regression, applied to clinical risk groups developed for the Colombian system. We evaluated the proposed model against a number of alternative models, including the current system. We also proposed a number of system changes to better manage insurer risk and avoid some of the known drawbacks of risk adjustment systems.

Speaker 5: Chenyuan Liu, Tsinghua University

Title: Sorting on Plan Design: Theory and Evidence from the ACA

Abstract: Should health insurance plans be standardized? This paper explores both theoretically and empirically the implications of allowing multiple cost-sharing attributes for the functioning of health insurance markets. I develop a model of insurance choice with contracts varying in both the coverage level and the variance of uninsured losses. The model predicts that under asymmetric information, individuals with different health risks will demand plans with different designs, generating a force for plan variation even in markets that regulate the average level of coverage. I test for this type of selection on plan design in the ACA Exchange and find that a) cost-sharing variations within coverage tiers create significant differences in the risk protection to consumers and b) consumers sort differentially by health status in ways consistent with the theoretical predictions. I show that the consequences of regulating away design variation within coverage tiers depend on the extent of risk adjustment regulations and consumer confusion in the market.

Speaker 6: Haizhen Lin, Indiana University

Title: Distributional Effect of Insurer Concentration on Premiums: Evidence from the Employer-Sponsored Health Insurance Market

(Paper not yet available publicly. Email Samson Fung to inquire about access to a copy of the paper.)

Abstract: We study how insurer concentration affects premiums for fully-insured plans in the employer-sponsored health insurance market. By utilizing quasi-experimental variations induced by mergers among national insurers, we first show that a higher level of market concentration leads to higher premiums. We also show substantial heterogeneity in the impact of increased concentration along the distribution of firm size. In particular, we find a 10% increase in insurer HHI increases premiums for medium-sized firms by 1.4%, but reduces premiums for large-sized firms by 3.7% Additional analyses suggest access to self-insurance and provider prices are critical in explaining our results. We then develop a stylized model in explaining our results and discuss policy implications.
Speaker 7: Charles Yang, Florida Atlantic University

Title: Subsidized Reinsurance and Efficiency of Individual Health Insurance Markets

(Paper should be available in a future version of the program)

Abstract: Stability and affordability has been a pressing issue for individual health insurance markets. Subsidized reinsurance combines external subsidies with some degree of risk spreading through reinsurance, and it has attracted bipartisan policy interest as a potentially important tool to help stabilize individual health insurance markets. The Affordable Care Act (ACA) included a temporary nationwide reinsurance program for the individual market, but it only lasted through 2016. Section 1332 of the ACA allows states to apply for a State Innovation Waiver to pursue innovative strategies (such as reinsurance) in providing quality and affordable health insurance to their residents while retaining the protections of the ACA. State Innovation Waivers have been available since 2017. To date, 12 states have created their own reinsurance programs using Section 1332 waiver authority.

State reinsurance programs help offset potential losses associated with high-cost individuals, thus lower premiums. They may encourage higher insurer participation in health plan offering, and the increase in plan competition may also help to keep premiums from rising. (Avalere, 2019) indicates premium decreases varying from 6% to 43% in individual health insurance rates for states that have implemented reinsurance waivers. However, the ACA also includes a permanent market stabilization program – risk adjustment, which redistributes funds from health plans with lower-risk enrollees to health plans with higher-risk enrollees (Cox et al., 2016). With risk adjustment in place, the effect of the reinsurance program might be limited. Avalere (2019) only compares the premiums of the same state with and without the reinsurance program. This current research conducts a cross-sectional analysis across states to investigate the association between premiums and the reinsurance program. Furthermore, this current research is designed to examine whether state reinsurance programs improve the efficiency of individual health insurance markets. In contrast to individual variables and insurance ratios, the efficiency measures combine more than two variables to present a more holistic evaluation of the insurer. For example, we examine premium and expense reductions given medical services, instead of unconditional or unconstrained premium and expense reductions.

Specifically, we use a sample of health insurers with individual health plans, and obtain their financial statements data from the National Association of Insurance Commissioners (NAIC). We use traditional (Cooper et al., 2007; Zhu 2009), non-oriented slack-based (Tone, 2001), order-α partial frontier (Aragon et al., 2005), and bootstrapped bias-corrected (Simar & Wilson, 1998) data envelopment analysis (DEA) models to obtain health insurers’ efficiency measures, from the consumers’ perspective (consumer efficiency) and the societal perspective (societal efficiency) (Brockett et al., 2004; Brockett et al., 2018; Yang and Lin, 2017). In the regression analysis, the generalized linear model is adopted using the efficiency measures as dependent variables, as well as premiums. To substantiate our main results, we apply the two-stage residual inclusion (2SRI) model (Terza et al., 2008) for sensitivity analyses. This current research aims to inform the public and provide insights and evidence for data-driven decision making in reforming individual health insurance markets.
Presentations (Day 2 afternoon session, Friday)

Speaker 8: Maura Coughlin, Rice University

Title: Insurance Choice with Non-Monetary Plan Attributes: Limited Consideration in Medicare Part D

Abstract: I propose an empirical model of demand for prescription drug insurance plans where non-cost plan attributes stochastically determine the composition of the set of plans that an individual considers, and monetary cost plan attributes determine the individual's expected utility over contracts in her consideration set. This model reconciles the classic view of insurance contracts as lotteries with purely monetary outcomes with the empirical finding that choice among insurance plans is also driven by their non-monetary attributes and financial attributes beyond their impacts on costs. I estimate the model using data from Medicare Part D allowing for unobserved heterogeneity in risk aversion and in consideration sets. I find that the latter plays a crucial role in plan choices: although 46 plans are available in the market, more than 90% of individuals consider no more than 5 plans. While the majority of available plans include a deductible, nearly 75% of all plans considered have no deductible. Just three firms account for over 60% of plans considered, while three other firms account for close to 0.5%. In contrast to previous literature that assumes full consideration of all plans, I uncover an important role for risk aversion in determining individual choices.