1. Introduction

My research focuses on the effects of the U.S. federal social safety net, particularly the impact of social insurance and tax policy on labor supply. Since my field within economics and public policy is public finance, I study these issues using the toolkit of a public economist. My overarching interests are in improving public policy through the careful, objective study of data, as supported by insights from economic models.

I saw the application of such analysis first-hand as Deputy Assistant Secretary for Economic Policy at the U.S. Department of the Treasury in 2012 and 2013, and in earlier work with policymakers beginning in 2008. Assisted by an experienced staff at Treasury, as Deputy Assistant Secretary I was responsible for providing expertise on all microeconomic issues faced by the Treasury, including the federal budget, Social Security, labor, education, immigration, energy and the environment, health policy, and housing. In 2013 I was asked to serve as Acting Assistant Secretary and Acting Chief Economist of the Treasury, which required me to cover all economic issues faced by the Treasury and report directly to the Secretary of the Treasury. Since my longstanding goal has been to help inform policy with rigorous economic analysis, this was a fantastic opportunity to understand better the wide range of economic issues faced by the federal government, and to use credible evidence to tackle policy challenges relating to these issues. In this role, I saw the interconnections among these policy areas and learned that many policymakers—including those in my role—must have a strong grasp of a broad range of policy topics. Building on my existing research focus on the U.S. federal social safety net and the labor market, my time in public service has informed my subsequent work on a range of such issues.

Research Themes

My sixteen published or draft papers reflect a number of core themes. Nearly all study the effect of U.S. federal economic policy on outcomes related to the labor market. Nearly all examine the social safety net, whether by studying universal social insurance programs or means-tested programs. All involve empirical work, and nearly all use experimental or quasi-experimental methods to illuminate the causal effects of policy. To me the particular experimental or quasi-experimental method used is less important than the credibility of the results, the contribution to knowledge, and the implications for policy. Nearly all of my papers can be related—implicitly or explicitly—to a backbone of an economic model, in some cases testing a theory or developing and implementing a new method. Ten use large administrative datasets on the full population or a substantial fraction of the population. In each paper, my coauthors and I focus on thoroughly demonstrating the credibility and robustness of the findings.

These common approaches are used to examine a few core sets of research themes. Nine papers study the effects of social insurance or tax programs on labor supply, with a particular focus on Social Security Old Age, Survivors and Disability Insurance (OASDI) pensions.[1] Nine study social insurance programs, and six study issues relating to taxes. Six study issues

[1] For simplicity I use the terms "labor supply" and "earnings/employment" interchangeably here, while noting that much previous literature has made a distinction between labor supply (as measured by hours worked, labor force participation, or employment) and earnings.

relating directly to low income programs or inequality; five study issues relating to youth, and/or interactions within families; and five study the role of firms in employment or compensation issues. Table 1 shows the recurring topics and methods that my papers cover.

Table 1. *Common Research Topics/Methods/Data Sources Across Papers*

Research topic or method	Papers
U.S. federal economic policy	1, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
Labor market outcomes	2, 4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16
Experimental or quasi-experimental methods	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
Administrative data	6, 8, 9, 10, 11, 12, 13, 14, 15, 16
Social insurance	1, 3, 9, 10, 12, 13, 14, 15, 16
Taxes	3, 4, 6, 7, 9, 14
Labor supply	2, 4, 6, 7, 9, 12, 13, 14, 16
Social Security system/retirement	3, 9, 10, 12, 13, 14, 16
Low-income programs/inequality	1, 2, 4, 5, 7, 8
Families/youth	4, 5, 6, 7, 8
Role of firms in labor market/employee benefits	1, 2, 3, 11, 15

Note: see the references in the Appendix of this statement for the names of the papers corresponding to each number.

This research agenda is motivated by a number of considerations. In evaluating public programs, one of the most fundamental economic questions is how they affect earnings and employment. A key goal of my work is enriching our understanding of how these work decisions are made. At the same time, another key goal is illuminating how programs affecting labor outcomes can also have implications for other important outcomes that in some cases have been studied less. When I was first exposed to economics as an undergraduate, I was impressed by the power of economic models and empirical work to generate insight into the economy. At the same time, I saw that in some cases the most basic models—even some of the most insightful ones—can abstract, by design, from important features of reality. One of my major motivations for pursuing a career as an economist was the prospect of building on existing illuminating models and data work, enriching their analysis in meaningful ways, and using these insights to formulate better policy. Much of my work reflects these goals, whether it is by investigating a new outcome that prior literature has not been able to study, or by using new methods or new data to estimate the effect of policy on a classic outcome.

In pursuing these goals, much of my work takes advantage of the fact that large, restricted-access administrative databases have only recently become more widely available to study these questions. By using the statistical power and novel set of outcome variables afforded by these large datasets on the full U.S. population, in combination with credible, quasi-experimental variation driving the estimates, my work attempts to shed new light on core economic and policy questions relating to the social safety net and the labor market.

Since I came to UC Berkeley in 2013, I have focused on work using such administrative data, as well as on work studying the Social Security system. Indeed, of the eight working papers my co-authors and I have produced since I arrived at UC Berkeley (papers 8 to 14 and paper 16 in the list in the Appendix), all use administrative data, and six are on the Social Security

system. Nearly all of these papers study labor supply. My research pipeline is similar. This focus has been shaped partly by my experience working in government. At Treasury I developed a deeper understanding of government administrative data. I also worked on issues relating to OASDI through my participation in the Social Security and Medicare Trustees Working Group's writing of the Trustees Report, as well as through discussions leading to the American Taxpayer Relief Act of 2012 that included failed negotiations over Social Security reform. In general, my experiences in academia and government have led me to believe that federal tax and Social Security programs are among the most important programs for public economists to study; indeed, total federal taxes are the size of approximately eighteen percent of GDP, and OASDI accounts for around five percent of GDP. As policy-makers actively contemplate further reform to U.S. tax and social insurance programs, the effects that these programs may have on labor supply are central to evaluating their overall economic effects.

2. Specific Papers

In discussing specific papers, I begin by discussing my first, main strand of research focusing on the labor supply effects of pensions. I next turn to the second strand of my research studying related issues in the context of family interactions and youth. Finally, I turn to the third strand of my research studying related issues in the context of employer-provided benefits and other employer decisions about compensation and employment.

A. Effects of Pensions

Within my work on the effects of pensions, one sub-strand focuses on developing new evidence on their income effects, and a second sub-strand develops and implements methods for estimating the effects of the returns to work. I discuss each of these sub-strands in turn.

A.i. Income Effects

Most previous literature on pensions and labor supply has focused on their substitution effects. Overviews of this literature have broadly concluded that pensions often substantially reduce the net returns to work and therefore reduce work through substitution effects, leading to substantial distortionary moral hazard.

My co-authors and I build on these findings and add a new twist in three recent papers: (a) **"The Effect of Pension Income on Elderly Earnings: Evidence from Social Security and Full Population Data"** (2016, R&R at the *Quarterly Journal of Economics*, joint with my former Ph.D. student Adam Isen (2013 Ph.D., now an economist at the U.S. Department of the Treasury) and Jae Song (an economist at the Social Security Administration)); (b) **"The Impact of Disability Insurance Benefits on Beneficiaries' Earnings"** (2016, forthcoming at the *American Economic Journal: Economic Policy*, joint with Timothy Moore (a senior lecturer at the University of Melbourne and an assistant professor at George Washington University) and Alexander Strand (an economist at the Social Security Administration)); and (c) **"The Role of Social Security Benefits in the Turnaround of Older Women's Employment Rate: Evidence from the Notch Cohorts**" (2016,

forthcoming in an edited volume of the National Bureau of Economic Research, joint with Adam Isen and Jae Song). In these papers, my co-authors and I use administrative datasets on the U.S. population in combination with credible policy variation based on discontinuities to show that Social Security Old Age and Survivors Insurance (OASI) and Disability Insurance (DI) programs also have important income effects on labor supply.[2] In all three papers, the results are suggestive of the hypothesis that individuals react to current benefits but not future benefits, consistent with myopic decision-making.

This distinction between income and substitution effects is crucial both for predicting the effects of the programs and for evaluating their consequences for economic welfare. For example, standard economic theory shows that in a basic setting (in the absence of a pre-existing distortion), income effects do not lead to the negative distortionary impact on welfare that substitution effects do, because income effects represent a pure transfer of resources from the government to individuals.

In **"Disability Insurance Income Saves Lives,"** my co-authors Timothy Moore, Alexander Strand, and I study the impacts of DI on mortality, using the same administrative data to enrich our understanding of the effect this program on an outcome beyond labor supply. Our results show that DI may play an important role in reducing mortality, particularly among lower-income beneficiaries. Since the value of a statistical life is very large, this has important implications for understanding the benefits of the program relative to its costs; indeed our results indicate that the lifespan benefits are of the same order of magnitude of the monetary cost of the program for lower-income beneficiaries.

A.ii. Developing Methods for Estimating the Incentive Effects of Pensions and Other Policies

The findings described above add to our understanding of social insurance programs by demonstrating that the income effects of OASI and DI can be important, enriching the picture from previous research that has focused mainly on substitution effects. At the same time, my coauthors and I have developed two novel methods for estimating the effects of the marginal returns to work on labor supply, and we have used data to demonstrate that these methods can produce new empirical insights.

First, while basic economic theory assumes that earnings and employment decisions respond to policy frictionlessly, recent literature has documented that individuals may face frictions preventing them from adjusting their earnings, such as lack of salience or lack of knowledge of a policy, or the costs of searching for a new job or negotiating a new employment contract. Previous literature has shown that estimating individuals' elasticity (*i.e.* their responsiveness to policy in the absence of adjustment frictions) and their adjustment cost (*i.e.* the degree to which responses are attenuated by frictions) allows predictions of the

[2] Some previous literature has found evidence for income effects of disability insurance, but not in the context of Social Security Disability Insurance, which is by far the largest disability program in the U.S. Likewise, one paper in the literature has found evidence for income effects of OASI, but these estimated effects are substantially smaller than the effects we find with our administrative data and quasi-experimental design.

earnings and welfare effects of policy, but no previous work has developed a method to estimate both an elasticity and an adjustment cost using data.[3]

In **"Earnings Adjustment Frictions: Evidence from the Social Security Earnings Test"** (2017, R&R at the *American Economic Journal: Applied Economics*, with Damon Jones (an assistant professor at Harris School at University of Chicago) and my former Ph.D. student Daniel Sacks (2014 Ph.D., now an assistant professor at the Kelley School of Business at Indiana University)), we begin by introducing a novel way of documenting adjustment frictions: demonstrating that individuals continue to act as if they are subject to a policy even when the policy no longer applies to them. Concretely, we use Social Security Administration data to examine the labor supply effects of the Social Security Earnings Test, which reduces OASI claimants' current OASI benefits as a proportion of earnings in excess of an exempt amount. The Earnings Test therefore creates a convex kink in the budget set. We show that individuals continue to "bunch" at this kink even when they are older than the ages to which the Earnings Test applies, indicating that they must face frictions in adjusting their earnings.

Next, we develop a framework for estimating the earnings elasticity and a fixed adjustment cost using information on the amount of bunching at kinks before and after policy changes in earnings incentives around the kinks. All else equal, the amount of bunching in each cross-section (in our empirical application, before and after the removal of the Earnings Test) is increasing in the elasticity, but the absolute value of the change in bunching from the earlier cross-section to the later one is decreasing in the adjustment cost. Intuitively, these patterns help in identifying the adjustment cost, as well as the elasticity. The method we develop is applicable to estimating elasticities and adjustment costs in other contexts with budget set kinks, and several other researchers have begun to use our method to estimate the effects of tax programs. Since we released our initial working paper, we have also added to the original method we developed by introducing an additional dynamic model that can explain and estimate individuals' gradual adjustment to the change in policy.

Our estimation results demonstrate that the short-run labor supply impact of even large changes in the effective marginal tax rate can be substantially attenuated. Although many recent fiscal policy discussions have envisioned affecting short-run earnings through tax and spending policy—for example, aiming to stimulate near-term labor supply by increasing the incentive to work—our results demonstrate that adjustment frictions may greatly attenuate these short-run responses.

Like this work, nearly all recent literature using administrative data to study effects of budget set kinks on labor supply examines "intensive margin" impacts, *i.e.* effects on the earnings of those who choose to remain employed. In **"Using Non-Linear Budget Sets to Estimate Extensive Margin Responses: Evidence from the Social Security Earnings Test"** (2018, joint with Damon Jones, Daniel Sacks, and Jae Song), we complement these intensive margin methods by developing a methodology for using budget set kinks or notches to estimate the "extensive margin" impact of the incentive to be employed on the employment

[3] In the context of a budget set notch, previous literature develops a method to estimate an elasticity and the share of the population that is inert (as distinct from an adjustment cost that can inform welfare evaluation). Our work complements this previous work by developing a method to estimate an elasticity and adjustment cost (as distinct from an inert share) in the context of a budget set kink (as distinct from a notch).

rate, and we use it to estimate the impact of the Earnings Test on the employment rate. Using a Regression Kink Design and administrative data from the Social Security Administration, we document clear visual and statistical evidence that as a function of potential earnings (*i.e.* earnings in the absence of the Earnings Test), the probability of employment increases discontinuously more slowly above the exempt amount than below it, paralleling the discontinuous change in the benefit reduction rate. We develop conditions under which we can use this change in slope to estimate the elasticity of the employment rate with respect to the effective net-of-tax rate. Our results again are consistent with the presence of adjustment frictions that in some cases prevent bunching at the exempt amount and therefore lead some older individuals not to work at all when faced with the Earnings Test. The results suggest that the existence of the Earnings Test leads to a substantially lower employment rate among our sample of workers in their early elderly years, enriching our understanding of the employment effects of the Earnings Test relative to earlier work that had found little effect at even older ages.

We are currently pursuing several lines of new research on these issues. First, we are examining whether adjustment frictions relate to lack of information about the Earnings Test, or instead relate to the costs of finding a new employment arrangement. Second, we have had discussions with the White House Social and Behavioral Sciences Team about participating in a randomized evaluation of the effects of the information on the Earnings Test that is provided to beneficiaries by the Social Security Administration. Third, we are working on using existing Social Security Administration data to document how people misperceive the Earnings Test. Fourth, we are estimating the effects of the Earnings Test using a new design comparing the subsequent employment rates of those with initial earnings below and above the Earnings Test exempt amount, broadening the focus relative to our existing "extensive margin" paper to include those with initial earnings farther away from the exempt amount. Finally, we are working on a piece exploring methodological issues relating to the empirical estimation of bunching at kinks.

B. Policy, Families, and Youth

Adjustment frictions at the individual level represent a key way of enriching a basic economic labor supply framework, as many individuals may be unaware of the policies that affect them or unable to respond. Incorporating family considerations is another crucial way of enriching a basic economic framework that typically focuses on the effects of policies on single agents, abstracting from within-family interactions. To my knowledge, "**Taxation and the Earnings of Husbands and Wives: Evidence from Sweden"** (2015, *Review of Economics and Statistics*) is the first paper using quasi-experimental variation to examine empirically how couples jointly make earnings decisions in response specifically to taxes. The paper takes advantage of the fact that in Sweden, the tax rate of each spouse in a married couple depends on that spouse's own earnings, and this tax rate does not depend on the earnings of the other spouse. Tax policy therefore affects spouses' tax rates differentially across couples, allowing me to estimate the effect of both spouses' marginal tax rates on each spouse's earnings decision. In the U.S., by contrast, married couples are almost always taxed jointly on the sum of their incomes, implying that husbands and wives face the same marginal tax rate and preventing researchers from fully uncovering the nature of interactions between spouses in response to taxation. This paper studies the so-called "Tax Reform of

the Century" in Sweden that dramatically changed marginal tax rates in certain parts of the earnings distribution, using administrative data on an eleven percent random sample of the Swedish population. The results reveal that husbands' and wives' decisions are interdependent, consistent with a framework in which their leisure is complementary.[4] In standard econometric specifications in which such interdependencies are ruled out, responses to taxation are substantially over-estimated.

Similarly, standard optimal income tax models typically have not taken into account the fact that parents' resources matter for their children's outcomes, which in turn has implications for how the parents' earnings should be taxed. In **"Optimal Taxation when Children's Abilities Depend on Parents' Resources,"** (2016, *National Tax Journal* (lead article, and winner of the Musgrave Prize for the best paper in the *National Tax Journal* in 2016), with Matthew Weinzierl, an Associate Professor at Harvard Business School), we enrich these standard models by allowing children's ability in producing income to depend on their parents' resources. Consistent with most previous research, we find empirically that parents' income has the biggest positive impact on children's test scores among lower-income families. In the context of a stylized model calibrated using our empirical results, we draw out the novel implication that more progressive tax policy can improve both efficiency and equity, since additional, previously overlooked benefits of transfers to lower-income families accrue in the children's generation and beyond.

In "**Taxes and Time Allocation: Evidence from Single Women and Men"** (2012, *Review of Economic Studies* (lead article), with Joshua Mitchell (then at the Urban Institute, now at the U.S. Census Bureau)), we move beyond the usual focus on labor supply *per se* to examine the interaction of the labor supply decision with the allocation of non-market time, including time with children and housework, as well as expenditure decisions. To our knowledge this is the first empirical paper specifically concentrating on the effect of taxes on time allocation throughout the day. Focusing on tax policy affecting low-income single women, particularly the Earned Income Tax Credit (EITC), we find that when the economic reward to participating in the labor force increases, market work increases and housework decreases, with the decrease in housework accounting for approximately two-thirds of the increase in market work. However, there is no evidence that "quality time" with children is affected, demonstrating that expansions of the EITC do not appear to have drawn parents away from their children in this sense. Expenditures on market goods likely to substitute for housework—in particular expenditures in food service establishments like restaurants, which can save single mothers time that otherwise would have been spent preparing meals—increase in response to a greater incentive to join the labor force. Overall, this provides a richer picture of the effects of tax policy: when tax incentives draw single women into the labor force, they become busier and do less housework but do not sacrifice quality time with their children, and they spend more on goods that can save themselves time.

From a more fundamental standpoint, the results in this paper provide a first quasi-experimental test of the canonical time allocation model of Gary Becker, which predicts that an increase in the net returns to work should cause individuals to substitute toward market goods inputs and away from time inputs. This prediction is confirmed by our finding that

[4] Note that we directly observe their earnings, not their leisure time.

expenditures on food increase, while the amount of time spent eating and preparing food decreases. We use our results to estimate using transparent quasi-experimental variation that for this population the elasticity of substitution between consumption of home and market goods is 2.61, suggesting that home and market goods are somewhat more substitutable for this group than in previous estimates in other populations. We discuss the implications of our empirical results in light of the theory of optimal income and commodity taxation, including the desirability of more heavily taxing goods that are complements to leisure.

At the same time as tax and Social Security programs may be important determinants of labor supply, it is also important to consider the role of investments in human capital and in youth specifically. In **"Children's Schooling and Parents' Behavior: Evidence from the Head Start Impact Study"** (2013, *Journal of Public Economics*, with Adam Isen), family considerations also add a new twist to previous literature. Using the randomized design from the Head Start Impact Study, we find that children's enrollment in Head Start causes a substantial increase in parents' involvement with the children, including time spent reading to children, math activities with children, and days spent with children by fathers who do not live with their children. This complements previous literature on Head Start that had focused on its test score impacts.

As policy-makers around the world have grappled with low employment rates—particularly low youth employment rates—in the years since the Great Recession, many have hoped that publicly-supported employment programs represent another type of investment that could improve participants' future employment prospects. However, previous research and literature reviews on youth employment programs had largely concluded that their costs outweigh their benefits, as literature has typically found that these programs have little impact on youths' future employment prospects.

In a paper joint with Adam Isen and Judd Kessler (assistant professor at the Wharton School, University of Pennsylvania), **"The Effects of Youth Employment: Evidence from New York City Lotteries"** (2016, *Quarterly Journal of Economics*), we augment this picture. We study the New York City Summer Youth Employment Program (SYEP), the largest summer youth employment in the U.S., with approximately 295,000 applicants and 165,000 participants during the period we study. Most applicants and participants were disadvantaged minority youth. Exploiting randomized lotteries for access to the program and linking administrative data from SYEP to U.S. Treasury administrative data on the full population, New York City administrative records on cause of death, and New York State administrative incarceration records, we find no positive effect of the program on earnings, employment, or college enrollment, similar to previous research. However, unlike previous research, we find that the program reduces participants' chance of dying (the point estimates suggest the biggest effect came through a reduction in death from homicide). Our results also show that the program reduces participants' probability of incarceration in state prison. The paper therefore demonstrates that summer youth employment kept participants from experiencing negative outcomes that previous analyses generally had not had the data to investigate. The impacts on mortality and incarceration are small in percentage point terms, but they are substantial in percent terms, and collectively they have important implications for the cost-benefit analysis of the program. Particularly given the large value of a statistical life, these previously obscured benefits of the program are very large, and they are at least

the same order of magnitude as the program's total measured costs. More generally, these results raise the possibility that comparable youth employment programs could keep youth "out of trouble" and therefore have large benefits that were previously unknown. In ongoing work to enrich our understanding of the effects of SYEP, Adam Isen, Judd Kessler, Sarah Tahamont of SUNY-Albany, and I are investigating the effects of this program on other crime-related outcomes, including arrests and incarceration in local jails.

C. Employer-provided benefits, compensation, and employment

While this collection of papers has examined the direct causal effects of public programs on individuals' work outcomes (and beyond), it is also important to consider the role of firms in mediating compensation and employment outcomes. This is considered in the third strand of my research, which mostly consists of papers that originated in my earlier years as a Ph.D. student. One important question is how workers' labor supply is affected by concentration in compensation within firms, when workers are competing for prizes like promotions. This is one motivation for my work with Richard Freeman (Ascherman Professor of Economics at Harvard), **"Prize Structure and Information in Tournaments: Experimental Evidence"** (2010, *American Economic Journal: Applied Economics*). Holding total tournament compensation constant, we show that tournaments featuring a single, large prize can lead to lower aggregate effort than tournaments offering moderate returns throughout the prize distribution to improving one's ranking. This is particularly true when competitors are provided information about their abilities relative to other competitors, as individuals who perceive little chance of winning a single, large prize put forth little effort.

Government support for employer-provided benefits can also be seen as playing a key role in employee compensation and in the U.S. social insurance system. A central feature of the U.S. pension system is the tax subsidy for employer-provided 401(k) plans, which aim to increase individuals' saving. However, the literature has not reached a consensus on how these plans affect overall saving, with some literature finding large positive effects, and other literature finding that 401(k) contributions largely crowd out saving individuals would have done even in the absence of 401(k) eligibility. In **"How do 401(k)s Affect Saving? Evidence from Changes in 401(k) Eligibility"** (2011, *American Economic Journal: Economic Policy*), I introduce a new, quasi-experimental strategy: comparing newly-employed individuals from before to after they become eligible for a 401(k) due to achieving sufficiently long job tenure at an employer, to newly-employed individuals whose eligibility does not change over the same period. I find evidence that 401(k) contributions are partly offset by decreases in the value of families' cars, one of the major durable goods on which the dataset has information. 401(k) eligibility appears to decrease IRA contributions among those over age 45, but interestingly, 401(k) eligibility appears to increase IRA contributions for those under 45. These findings may be suggestive of the possibility that for younger individuals who are typically less aware of their savings opportunities, 401(k) eligibility raises contributions to IRAs by raising awareness of them.

Another key set of government interventions supporting social insurance relates to support for employer-provided health insurance benefits, as well as public health insurance programs. In **"Changes in the Incidence and Duration of Periods without Insurance"** (2009, *New England Journal of Medicine*), David Cutler (Eckstein Professor of Applied

Economics at Harvard) and I show that from the mid-1980s to the mid-2000s, employer-sponsored health insurance eroded, particularly for the lowest-education groups, but this was offset by expansions of public coverage.

Many have speculated that regulations on firms, like those relating to health insurance, could cause firms to reduce employment, for example by reducing employment below the threshold number of employees at which the regulations begin to bind. In **"Firm Regulations and Employment: Evidence from Administrative Data"** (2016, submitted), Adam Isen and I study such issues using administrative data on the universe of U.S. firms in combination with detailed information on federal and state regulations. In particular, we study four sets of regulations that apply only above specific employer size thresholds: mandated health care insurance in Massachusetts following the 2006 near-universal health coverage legislation; anti-discrimination legislation; employee layoff notification regulations; and family leave regulations. Across all of these regulations, we find no evidence of "bunching" in the number of employees below the thresholds. Thus, our results suggest no evidence that firms noticeably reduce employment below the thresholds.

It is also important to consider the role of firms in affecting employment in the case of the employer-sponsored H-1B temporary work visa, the largest high-skilled immigration program in the U.S. My co-authors and I explore the effects of H-1Bs in our paper, **"The Effects of High-Skilled Immigration Policy on Firms: Evidence from Visa Lotteries"** (2016, revise and resubmit, *Journal of Political Economy*, joint with Kirk Doran (an Associate Professor at Notre Dame) and Adam Isen). The H-1B program has been the subject of contentious debate. Firms often argue that they cannot obtain the unique skills necessary to grow and innovate without access to more H-1B workers; indeed, a key original stated goal of the H-1B program was to provide U.S. firms with workers whose skills could not otherwise be obtained. Others claim that H-1B workers typically do not possess unique skills and primarily crowd out employment of other workers at the firms that hire them.

Our paper examines these narratives by comparing winning and losing firms in the Fiscal Year 2006 and 2007 lotteries for H-1B visas, matching administrative data on these lotteries to administrative data on approved U.S. patents and on U.S. firms. We find evidence that new H-1B hires substantially crowd out firms' employment of other workers. We also find that up to nine years after the lotteries, additional H-1Bs generally have insignificant effects on firms' patenting and use of the research and experimentation tax credit, which serve as observable measures of innovation following previous literature. There is some evidence that additional H-1B lottery wins lead to lower average employee earnings and higher firm profits, consistent with the possibility that this employer-sponsored visa gives employers a degree of monopsony power over H-1B workers.

Overall, our results are supportive of a narrative in which H-1Bs crowd out alternative workers, are paid less than the alternative workers whom they crowd out, and thus increase the firm's profits despite no measurable effect on innovation at the firm. Our findings stand in contrast to firms' claims that they face a shortage of workers with unique skills that are only available through the H-1B program. However, our findings are compatible with the possibility that an increase in H-1Bs raises aggregate employment and/or innovation—for example if H-1B employees replace other workers who instead find jobs elsewhere and

innovate at these alternative jobs. At the same time, our results suggest any such aggregate increases are not occurring through the channel of an extra H-1B visa at a given firm increasing the levels of these outcomes at the firm itself, contrary to the intent of the program.

3. Conclusion

Several themes are apparent in my work. One theme is that high-quality administrative data in combination with credible causal inference methods can illuminate the effects of key aspects of the U.S. federal social safety net—particularly relating to Social Security and tax policy—on the labor market. A second theme is that income (not just substitution) effects are important in understanding the effects of pensions. A third theme is that new methods can estimate incentive effects on labor supply, and this analysis reveals the importance of the barriers individuals can face in labor supply adjustment. A fourth theme is that by taking advantage of administrative data on mortality to supplement information on labor supply, the results in at least two contexts reveal that mortality impacts can dramatically change the programs' cost-benefit analysis. A final theme is that taking family considerations into account can yield meaningfully different conclusions about public programs. Overall, my work demonstrates the importance of enriching our understanding of the implications of the social safety net, whether it is by recognizing that the labor supply effects of pensions do not only reflect moral hazard, incorporating frictions in standard frameworks, incorporating family considerations, revealing the role of firm decisions, or using mortality data to show the importance of this outcome in addition to employment outcomes.

My research pipeline promises to enrich these lines of research. Over the medium term, almost all of the research in progress that I have described relates to evaluating the effects of Social Security using administrative data and credible quasi-experimental variation. Over the longer term, I hope to extend this work to understand the effects of Social Security reform on economic outcomes more broadly.

In considering the impact that my past work and future research pipeline promise to have, it is revealing to examine the time pattern of the citations to my work. My annual number of citations increased steadily each year until 2011. It fell in 2012, when I left academia for Treasury, and it fell further when I remained at Treasury in 2013. After returning to academia in 2014 my annual citation count sharply increased by a factor of more than two and a half relative to 2013, and it climbed again in 2015 and 2016. I believe this illustrates that although my academic career was temporarily interrupted by my public service—during which I had essentially no time to do academic work due to the demands of my job as a senior policy-maker—in the longer run this service has tremendously improved the quality and policy relevance of my research, and my impact as an academic. I hope and expect that this experience will continue to improve my research and teaching in the coming years.

In conclusion, my interests focus on using the careful study of data, supported by insights from economic models, to inform and improve economic policy surrounding the social safety net. I plan to continue contributing to our understanding of these issues, aiming for my research to inform the public debate.

Appendix: List of Papers

1. **Cutler, David, and Alexander Gelber**. "Changes in the Incidence and Duration of Periods without Insurance," *New England Journal of Medicine* 2009, 360:17, 1740-1748.

2. **Freeman, Richard, and Alexander Gelber**. "Prize Structure and Information in Tournaments: Experimental Evidence," *American Economic Journal: Applied Economics* 2010, 2:1, 149–164.

3. **Gelber, Alexander**. "How do 401(k)s Affect Saving? Evidence from Changes in 401(k) Eligibility," *American Economic Journal: Economic Policy* 2011, 3:4, 103-122. Reprinted in *Economic Behaviour and Taxation,* edited by James Alm and J. Sebastian Leguizamon.

4. **Gelber, Alexander, and Joshua Mitchell**. "Taxes and Time Allocation: Evidence from Single Women and Men," *Review of Economic Studies* 2012, 79(3): 863-897 (lead article).

5. **Gelber, Alexander, and Adam Isen**. "Children's Schooling and Parents' Behavior: Evidence from the Head Start Impact Study," *Journal of Public Economics* 2013, 101, 25-38.

6. **Gelber, Alexander**. "Taxation and the Earnings of Husbands and Wives: Evidence from Sweden," *Review of Economics and Statistics* 2014, 96(2), 287-305.

7. **Gelber, Alexander, and Matthew Weinzierl**. "Optimal Taxation when Children's Abilities Depend on Parents' Resources," *National Tax Journal* 2016, 69(1), 11-40 (lead article; winner of the Musgrave Prize for the best article in the *National Tax Journal* in 2016).

8. **Gelber, Alexander, Adam Isen, and Judd Kessler**. "The Effects of Youth Employment: Evidence from New York City Lotteries," *Quarterly Journal of Economics* 2016, 131(1), 381-422.

9. **Gelber, Alexander, Damon Jones, and Daniel Sacks**. "Estimating Earnings Adjustment Frictions: Method and Evidence from the Social Security Earnings Test," November 2017, NBER Working Paper 19491 (revise and resubmit, *American Economic Journal: Applied Economics*).

10. **Gelber, Alexander, Timothy Moore, and Alexander Strand.** "Disability Insurance Income Saves Lives," March 2018.

11. **Doran, Kirk, Alexander Gelber, and Adam Isen**. "The Effects of High-Skilled Immigration Policy on Firms: Evidence from Visa Lotteries," February 2016, NBER Working Paper 20668 (revise and resubmit, *Journal of Political Economy*).

12. **Gelber, Alexander, Adam Isen, and Jae Song**. "The Effect of Pension Income on Elderly Earnings: Evidence from Social Security and Full Population Data," May 2016 (revise and resubmit, *Quarterly Journal of Economics*).

13. **Gelber, Alexander, Adam Isen, and Jae Song**. "The Role of Social Security Benefits in the Turnaround of Older Women's Employment Rate: Evidence from the Notch Cohorts." Forthcoming in an edited National Bureau of Economic Research volume on *Women Working Longer*, ed. Claudia Goldin and Lawrence Katz.

14. **Gelber, Alexander, Damon Jones, Daniel Sacks, and Jae Song**. "Using Non-Linear Budget Sets to Estimate Extensive Margin Responses: Evidence from the Social Security Earnings Test," June 2018.

15. **Gelber, Alexander, and Adam Isen**. "Firm Regulations and Employment: Evidence from Administrative Data," May 2016 (submitted).

16. **Gelber, Alexander, Timothy Moore, and Alexander Strand**. "The Impact of Disability Insurance on Beneficiaries' Earnings." Forthcoming, *American Economic Journal: Economic Policy*.