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## Social Security and Retirement Around the World

The United States and many other developed countries around the world face looming financial crises in their social security programs. For example, member countries in the Organization for Economic Cooperation and Development are projected to experience a roughly 50 percent increase in the share of GDP devoted to old age pension expenditures over the next fifty years, from 7.4 percent of GDP to 10.8 percent of GDP.<sup>1</sup> The aging of the population is widely recognized as one important cause of these financial crises — most countries’ programs are financed on a “pay as you go” basis, and a rising fraction of the population will be retired and collecting benefits as the population ages, causing program expenditures to swell.

Less attention has been paid, however, to the fact that the provisions of social security programs often penalize work beyond the first age of benefit eligibility. If workers

are induced to retire earlier as a result of these incentives, this will magnify the financial burden caused by population aging.

For over five years, NBER researchers **Jonathan Gruber** and **David Wise** have led a team of researchers in twelve countries in conducting a cross-country analysis of the relationship between social security and retirement. In the first stage of the research project,<sup>2</sup> Gruber and Wise documented the enormous disincentives for continued work at older ages in many countries. The authors also found a strong correspondence across countries between social security program incentives to retire early for a typical worker (“tax force” in Figure 1) and the proportion of older persons that have left the labor force. The authors suggested that the relationship between incentives and early retirement was likely causal, but that further analysis

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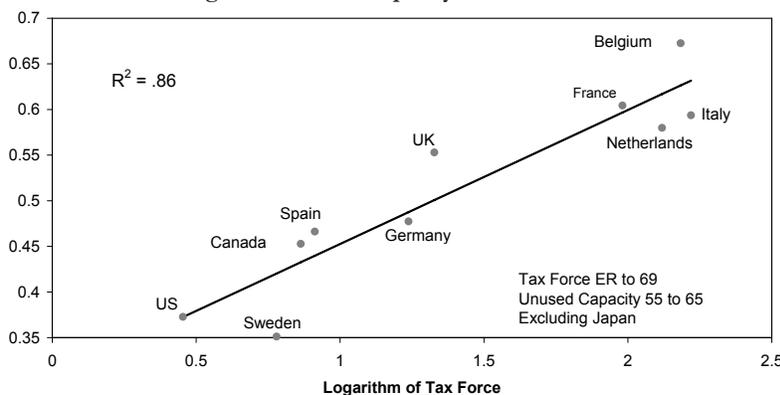
would be required to establish this.

In “**Social Security Programs and Retirement Around the World: Micro Estimation**,” (NBER Working Paper 9407), Gruber and Wise present the results of the second stage of this research project, which revisits the link between social security and retirement using micro data.

For this analysis, researchers in each country compile a large database of near retirement-age individuals from their country, compute the incentives for continued work for each individual, which depend on the provisions of the country’s social security program and the individual’s work history and family situation, then estimate models of retirement behavior.

Strikingly, Gruber and Wise find very similar results across countries: in ten out of twelve countries, workers are significantly less likely to retire when additional work results in larger increases in “social security wealth,” the stream of benefits workers and their families receive in retirement.

Figure 1: Unused Capacity vs. Tax Force



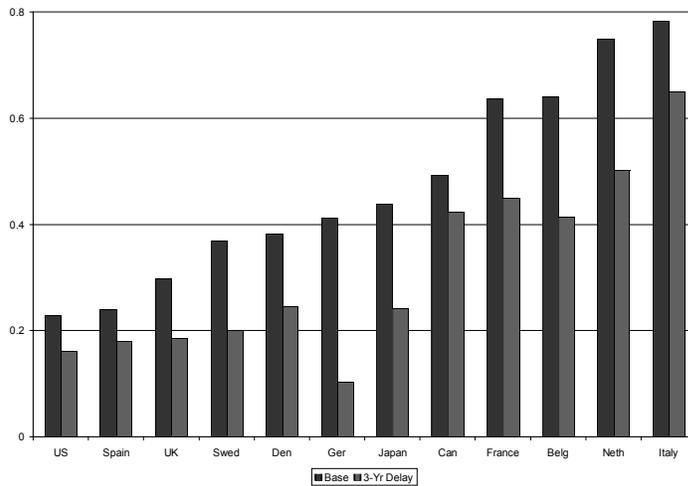
This strongly suggests a causal interpretation of the results from the first stage of the project. The authors conclude that in spite of non-trivial cultural differences across countries, there is an important relationship between the incentives for continued work resulting from the provisions of social security programs and the labor force participation of older workers.

To better illustrate the magnitude of the estimated relationship, researchers in each country simulate the effect of two sample policy changes, a three-year increase in the age of benefit eligibility and a move to a common social security system where benefits are equal to 60 percent of average lifetime wages. Researchers estimate that these policies would have large effects

on retirement: averaging across countries, the three-year delay policy would reduce the proportion of men aged 56-65 out of the labor force by as much as one-third (see Figure 2), while the common reform would have very different effects on countries depending on whether the common system is more or less generous than the country's current system.

In the next phase of the project, researchers will use the results and methods developed in this phase to estimate the fiscal impact of social security reforms on the balance sheets of the social security system and the government.

Figure 2: OLF Age 56-65. Base vs. 3 Year Delay: OV-S3



<sup>1</sup> "Fiscal Implications of Ageing: Projections of Age-Related Spending," OECD Economics Department Working Paper No. 305.

<sup>2</sup> "Social Security and Retirement Around the World," J. Gruber and D. A. Wise, eds., Chicago: University of Chicago Press, 1999.

The research was funded by the National Institute on Aging. It was summarized by Courtney Coile.

## Cigarette Taxes and Prenatal and Maternal Smoking

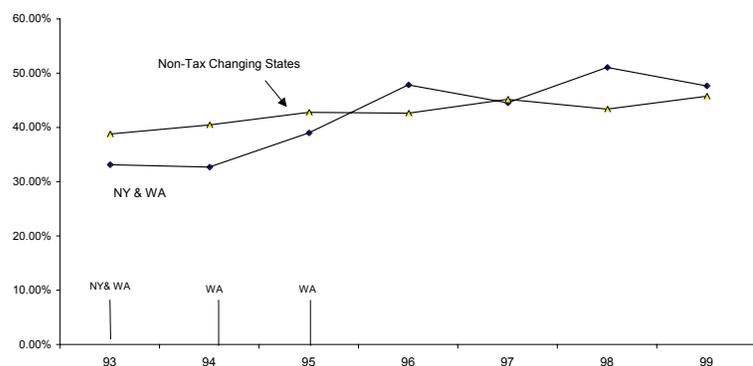
Prenatal and maternal smoking has significant detrimental effects on children's health. Prenatal smoking accounts for one in five low birth weight babies and is the most important modifiable risk factor for poor pregnancy outcomes. Even for women who quit smoking during pregnancy, postnatal smoking doubles the risk of Sudden Infant Death Syndrome and is a major risk factor for respiratory illness, middle ear problems, and asthma in children.

Cigarette excise taxes are one possible tool to discourage prenatal and maternal smoking. In "The Effect of Cigarette Excise Taxes on Smoking Before, During, and After Pregnancy" (NBER Working Paper 9245), Greg Colman, Michael Grossman, and Ted Joyce explore this relationship using data from the Pregnancy Risk Assessment Monitoring System, a monthly survey of recent mothers in twenty-five states.

Specifically, the authors ask whether individuals living in states that raised cigarette taxes between 1993 and 1999 experienced increases in prenatal quit rates and decreases in postpartum relapse rates relative to individuals in states with no change in taxes.

Figure 1 compares the prenatal quit rate for women in New York and Washington state, where cigarette taxes were raised early in the sample period, to the quit rate for women in six states that did not raise taxes. As the figure illustrates, the quit rate in

Figure 1: Quit rates During Pregnancy among Women that Smoked Three Months Before Pregnancy: Tax Changing vs. Non-Tax Change States in PRAMS\*



\*Tax Changes NY 39-56 6/1/93; WA 34-54 7/1/93, 54-56.5 7/1/94 56.5-81.5 7/1/95:

the two affected states rose by approximately 15 percentage points between 1994 and 1996, while the quit rate for the unaffected states remained relatively constant. A similar analysis of postpartum relapse rates suggests that these rates fell by 5 percentage points over the sample period in the affected states relative to the unaffected states.

Next, the authors directly estimate the effect of cigarette taxes on quit and relapse rates, using the same changes in state cigarette taxes to identify the effects. They find that a 10 percent increase in cigarette taxes increases the probability of a woman quitting smoking during pregnancy by 10 percent. This suggests that over

one-quarter of the 9 percentage point increase in quit rates that occurred over the sample period can be explained by increases in cigarette taxes during the period. The authors estimate that a 30-cent increase in taxes would have approximately the same effect on quit rates as enrolling women in prenatal smoking cessation programs.

The authors find some interesting differences across women. Women who intend to become pregnant are more likely to quit before pregnancy (though no more likely to quit during pregnancy) than women whose pregnancies are unintended. Women who are having their first child or are light smokers are much more likely to quit

during pregnancy and less likely to relapse than are women who have previous births or are heavy smokers.

Finally, the authors estimate that a 10 percent increase in cigarette taxes decreases the probability of postpartum relapse by 10 percent. However, the authors note that despite recent tax increases, 50 percent of all quitters still resume smoking within 6 months of delivery, suggesting that women may not fully understand the negative consequences of maternal smoking for children's health.

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*The research was funded by the National Institute of Child Health and Human Development. It was summarized by Courtney Coile.*

## Geography, Race, and Health

The existence of racial disparities in medical treatment and health outcomes is well known. A recent comprehensive study by the Institute of Medicine concludes that “only a handful of the hundreds of studies reviewed here... find no racial and ethnic differences in care.”<sup>1</sup> The study notes that racial differences could result from differences in access to care, socioeconomic or geographic factors, or racial differences in preferences of patients or attitudes of providers, but that more work is needed to determine the relative contribution of each factor.

In “**Geography and Racial Health Disparities**” (NBER Working Paper 9513), **Amitabh Chandra** and **Jonathan Skinner** argue that the influence of geography should be taken more seriously in measuring racial disparities and designing reforms to reduce them. The authors make several points to reach this conclusion.

First, they note that there are large geographic disparities in treatment and outcomes. For example, in 1996 there was an average of 7.5 angioplasty procedures performed per 1000 Medicare enrollees in the US, but the rate varied from 2.6 to 22.3 per 1000 across the 306 “hospital referral regions” (HRR) in the country. The authors find that substantial differ-

ences persist even after adjusting for differences in patient characteristics, and that large disparities exist not only across regions of the country but also within states and even cities.

Second, the authors find that people of different racial groups tend to seek care from different hospitals and physicians. The authors analyze admission patterns of Medicare patients treated for a heart attack and find that 50 percent of black patients are admitted to hospitals that combined account for just 14 percent of non-black admissions, not the 50 percent one would find if black and non-black patients were equally likely to go to each hospital. This may reflect residential segregation by race, but could also reflect the selection of different hospitals by blacks and non-blacks living in the same area.

Third, the authors note that racial disparities exhibit substantial geographic variation. For example, black and non-black Medicare patients in Massachusetts are equally likely to receive angioplasty, while blacks in Arkansas are only one-fourth as likely to receive angioplasty as similar non-blacks.

Building on these points, the authors demonstrate that ignoring region can produce a misleading estimate of racial disparities. For example, average expenditures for Hispanic

and non-Hispanic Medicare beneficiaries are the same, suggesting no disparity. However, most Hispanic beneficiaries live in states where Medicare expenditures are higher; incorporating these regional differences, Hispanics may well have lower expenditures than non-Hispanics. In general, estimates of racial disparities may be too high or too low when region is ignored, as differences that are the consequence of where people live are mistakenly classified as being due to race.

The authors conclude that the policy implications of racial disparities depend on whether disparities result from geographic variation in treatment norms or from differential treatment by race within a hospital or physician's practice. If minorities tend to live in areas where quality of care is lower for all patients, then reducing geographic disparities in quality of care could significantly reduce racial disparities in treatment and health outcomes.

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<sup>1</sup> B. D. Smedley, et. al. “Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care, Washington DC: National Academy Press, 2002.

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# The Effect of Medicaid HMOs on Spending and Health Outcomes

In the 1980s and 1990s, there was a dramatic shift in employer-provided health insurance from traditional fee-for-service plans to managed care plans — by 1999, 91 percent of covered employees were enrolled in a managed care plan. The Medicaid and Medicare programs, which together account for nearly \$500 Billion in annual spending and 75 million beneficiaries, have also moved to adopt managed care — currently, over one-third of the beneficiaries of the two programs are enrolled in a managed care plan.

A key motivation for the shift to managed care in these public programs is to reduce the level and growth of expenditures. In **“Does Contracting Out Increase the Efficiency of Government Programs? Evidence from Medicaid HMOs”** (NBER Working Paper 9091), **Mark Duggan** examines the effect of Medicaid HMOs on spending and health outcomes. As Duggan notes, managed care could lower spending without sacrificing quality — for example, paying providers a flat fee per patient may discourage them from providing services of marginal value and encourage more preventative care. However, managed care could also cause spending to rise or quality to fall — for example, the insurer may

charge the government a large mark-up over costs if the bidding process is not competitive or providers may fail to provide key services.

It is difficult to measure the effect of HMO participation on spending and outcomes because enrollment in managed care plans is often voluntary, and those who choose to enroll are likely to differ in unobservable ways from those who do not (for example, to be healthier). Duggan avoids this problem by using mandates in 19 California counties that required half of all Medicaid beneficiaries to join an HMO between 1993 and 1999. In his analysis, HMO participation depends only on whether the county had adopted a mandate.

Using data on 300,000 welfare recipients, Duggan finds that the average effect of the mandate is to increase spending by 12 percent. This increase may be due to higher payments to providers, higher administrative costs, the inclusion of a normal level of profit for the HMOs, or a mark-up of bids above cost. Duggan also finds that the spending increase depends on the level of pre-mandate HMO penetration, with a 20 percent increase in counties with no previous penetration and no increase in counties with one-third of beneficiaries voluntarily enrolled in HMOs. The

lack of a spending increase in counties with large pre-mandate penetration may reflect that counties were already paying HMOs above costs or that these counties have a more efficient managed care market or a more competitive bidding process.

Looking at health outcomes, Duggan finds that switching to a managed care plan leads to a 30 percent decrease in avoidable hospitalizations for children, suggesting a possible quality improvement. However, he also finds a 30 percent decrease in hospitalizations for injuries among children, suggesting that the former result is due to a change in treatment patterns rather than to improvements in health. He also finds that switching to a managed care plan does not reduce infant mortality or the incidence of low birth weight babies.

Duggan concludes that mandates requiring Medicaid beneficiaries to switch to HMOs did not improve the efficiency of the Medicaid program because they led to substantial spending increases with no demonstrable quality improvements.

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*The research was funded by the National Institute on Aging. It was summarized by Courtney Coile.*

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