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fiscal adjustments raises inflation risks. Finally, even when long-run expectations are anchored on Regime M — where monetary policy can control inflation perfectly — the central bank's loss of inflation control can be dramatic along the transition path.

This research demonstrates that inflation can arise for *fiscal* reasons that are beyond the control of independent central banks. It also suggests that efforts by central banks to offset fiscally-induced inflation through more aggressive monetary policy cannot succeed if fiscal policies and their expectations are inconsistent with the central bank's inflation goals.

[1] *The CBO posits a constant inflation rate over the projection period, implying that inflation achieves some target level throughout.*

[2] *H. Chung, T. Davig, and E.M. Leeper, "Monetary and Fiscal Policy Switching," NBER Working Paper No. 10362, March 2004, and* Journal of Money, Credit and Banking *39(4), 2007, pp. 809–42; T. Davig and E.M. Leeper, "Fluctuating Macro Policies and the Fiscal Theory," NBER Working Paper No. 11212, March 2005, and in* NBER Macroeconomics Annual, *vol. 21, D. Acemoglu, K. Rogoff, and M. Woodford, eds., Cambridge: MIT Press, 2006, pp. 247–98; T. Davig and E.M. Leeper, "Monetary-Fiscal Policy Interactions and Fiscal Stimulus," NBER Working Paper No. 15133, July 2009, and* European Economic Review *55(2), 2011, pp. 211–27; E.M. Leeper, "Anchoring Fiscal Expectations," NBER Working Paper No. 15269, August 2009, and* Reserve Bank of New Zealand Bulletin *72(3), 2009, pp. 7–32; E.M. Leeper, "Anchors Aweigh: How Fiscal Policy Can Undermine the Taylor Principle," NBER Working Paper No. 15514, November 2009, and in* Monetary Policy Under Financial Turbulence, *Santiago: Central Bank of Chile, 2010, pp. 411-53; T. Davig, E.M. Leeper, and T.B. Walker, "'Unfunded Liabilities' and Uncertain Fiscal Financing," NBER Working Paper No. 15782, February 2010, and* Journal of Monetary Economics *57(5), 2010, pp. 600–19; T. Davig, E.M. Leeper, and T.B. Walker, "Inflation and the Fiscal Limit," NBER Working Paper No. 16495, October 2010, and* European Economic Review *55(1), 2011, pp. 31–47; E.M. Leeper, "Monetary Science, Fiscal Alchemy," NBER Working Paper No. 16510, October 2010, and forthcoming* Macroeconomic Challenges: The Decade Ahead, *Kansas City: Federal Reserve Bank of Kansas City; T. Davig and E.M. Leeper, "Temporarily Unstable Government Debt and Inflation," NBER Working Paper No. 16799, February 2011; E.M. Leeper and T.B. Walker, "Fiscal Limits in Advanced Economies," NBER Working Paper No 16819, February 2011.*

[3] *For a derivation of these two policy regimes, see E.M. Leeper, "Equilibria Under 'Active' and 'Passive' Monetary and Fiscal Policies,"* Journal of Monetary Economics *27(1), 1991, pp. 129–47. Pre-Accord policies are discussed in M. Woodford, "Fiscal Requirements for Price Stability," NBER Working Paper No. 8072, January 2001, and* Journal of Money, Credit and Banking *33(3), 2001, pp. 669–728. Recent policies are examined by J.H. Cochrane, "Understanding Policy in the Great Recession: Some Unpleasant Fiscal Arithmetic," NBER Working Paper No. 16087, June 2010, and* European Economic Review *55(1), 2011, pp. 2–30.*

[4] *T.J. Sargent and N. Wallace, "Some Unpleasant Monetarist Arithmetic,"* Federal Reserve Bank of Minneapolis Quarterly Review *5 (Fall), 1981, pp. 1–17.*

[5] *Sargent and Wallace rule out the fiscal theory a priori by using perfectly indexed debt.*

[6] *Sticky prices and long-term bonds alter the inflation dynamics, but not the underlying economic logic.*

[7] *This work takes sovereign debt default off the table, which is reasonable for the United States, but suspect for other countries. Some recent work connects fiscal limits to the probability of default: H. Bi, "Sovereign Risk Premia, Fiscal Limits and Fiscal Policy," CAEPR Working Paper No. 007-2010, Indiana University, May 2010; H. Bi and E.M. Leeper, "Sovereign Debt Risk Premia and Fiscal Policy in Sweden," NBER Working Paper No. 15810, March 2010; H. Bi, E.M. Leeper, and C. Leith, "Stabilization versus Sustainability: Macroeconomic Policy Tradeoffs," manuscript, Indiana University, November 2010.*

Evaluating the Impact of Social Security

Kevin Milligan*

Although pressing issues, from immigration to national security, can capture the attention of policymakers from year to year, the problems associated with the fiscal consequences of an aging population are always looming in the background. The eventual impact of Social Security and Medicare on the long-run budget in the United States is likely to be substantial. But, the problems facing other OECD countries are perhaps even more severe. Birth rates elsewhere are lower, meaning that fewer workers will be paying for the benefits of retirees. Moreover, the share of retirement benefits provided through the state is higher in many other OECD countries than in the United States.[1]

In light of these pressures, many coun-

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tries already have implemented substantial reforms. Italy and Sweden are phasing in notional defined contribution plans to replace their traditional social security programs. Canada has a 140 billion dollar trust fund invested in a diversified portfolio of financial assets. Germany has lowered the public pension entitlement and encouraged the establishment of occupational pensions and individual savings plans. In the fall of 2010, France advanced the retirement age from 60 to 62 in the face of mass protests, joining the United States and other countries in a movement toward later benefit entitlement ages. Further reforms, both large and small, are under discussion in many other nations.

Over the past few years, I have participated in a number of research projects evaluating social security programs around the world. The broad goal of this work is a better understanding of the economic responses to the incentives embedded in public pension programs. Research on these issues can provide policymakers with some guidance as they face the demographic challenges of the future. Some of this work is undertaken through the NBER's International Social Security group, organized by Economics of Aging Program Director David A. Wise. It features the work of teams from twelve OECD countries, collaborating to produce comparable analyses that address important questions for the design and future of Social Security programs. To date, this project has produced four published volumes, with more on the way.

Here I describe work from two phases of the International Social Security project, as well as two other research projects related to retirement behavior.

Disability Insurance

The International Social Security project has focused recently on disability programs. Wise and I have written a summary paper describing and exploring the detailed work being done by the country teams.[2] In most countries, public disability insurance programs provide important insurance against income loss from disability for those too young to retire. However, in many countries disability programs may become a pathway for early retirement. Across countries, the uptake of disability insurance among younger working people is quite similar; however, among those who are older, uptake displays enormous variation. For men at age 64, for example, uptake ranges from 8 percent in Italy to 37 percent in Sweden. The cross-country comparisons suggest a strong level of substitutability between the availability of early public retirement pensions and disability insurance uptake.

We are also interested in how much of the growth of disability insurance programs can be attributed to changes in health and improvements in life expectancy. Japanese men aged 65 in 2005 could expect to live ten years longer than Japanese men who were 65 in 1960. There also have been large increases in self-assessed health over time. Still, the use of disability insurance has grown over these years. Making use of the cross-country data, we can compare changes in disability benefit use in countries with large and small improvements in health status. We find no evidence of a relationship between health changes and disability rates. Instead, the main driver of disability insurance uptake seems to be policy choices about how disability is defined, as well as variation in the generosity of benefits.

Elderly and Youth Employment

An earlier phase of the International Social Security Project delved into the relationship between elderly workers and youth employment. Over the last thirty years, governments around the world have occasionally extended early retirement benefits to older workers in periods of high youth unemployment in an effort to improve the employment outcomes of the young. Most economists are quick to invoke the "lump of labor fallacy" in rejecting these efforts, but the idea remains attractive to many policymakers. The introductory chapter for this phase of the research, written with Jonathan Gruber and Wise, pools the data to generate cross-country analyses and picks out the most compelling examples from the experience of individual countries.[3]

This cross-country analysis reveals no consistent relationship between long-run changes in elderly employment and the employment of those at prime labor market ages. Furthermore, each country team produced a detailed simulation of the retirement incentives embedded in its nation's public retirement insurance programs. While the cross-country results show a clear pattern between these incentives and the employment rates of older workers, no such relationship is found for younger workers.

Looking at the experiences of individual countries, the most striking comes from Denmark. In 1979, the "Post-Employment Wage" program was introduced, leading to an almost immediate drop of 28 percentage points in the employment rate of men aged 61–65. Over this same short time period, the employment rate of males aged 20–24 lost 5 percentage points, meaning that the young did not capture the lost employment of the older workers.

Health and Wealth Allocation

To relieve pressure on public retirement income plans, many countries have considered private savings schemes designed to supplement or even replace incumbent public plans. Therefore, one important focus of the vast literature on social security privatization is the effectiveness of individual portfolio decisions among elderly populations. Courtney Coile and I have studied the impact of health shocks and aging on household portfolio decisions,[4] following the asset allocation of elderly American households in the Health and Retirement Study as they grew older and experienced health setbacks. We find that when an elderly couple experiences a death or a large shock to health, there is substantial disposition of assets, including the principal residence, vehicles, and small businesses. We also find a significant increase in the share of wealth that is held in dominated assets, such as bank accounts. This latter finding corroborates my earlier finding, using Canadian data, of a rising share of liquid assets held as households age.[5]

We then compare all of these asset changes for those with and without preexisting mental or physical impairment. We find the largest responses to health shocks among those with reduced mental capacity. Our findings suggest that the focus on the risk-return properties of portfolios may

be misplaced in the literature on aging and wealth allocation, because for many households the primary concerns are liquidity and the complexity of asset holdings.

Public Pensions and Wellbeing

While it is important to understand the impact of public retirement income plans on savings and on the labor supply of the elderly, it is also important to remember the economic justification for retirement income insurance in the first place. The risks of longevity, poor investment returns, and unexpectedly low career earnings can be diminished through insurance. Using data from Canada, Michael Baker, Gruber, and I investigate the impact of public retirement income plans on wellbeing in retirement.[6]

We exploit variation over 25 years in the rules governing Canada's public pensions to compare cohorts with higher and lower entitlements to income from public pensions. We find that expansions of public pensions increase income, especially among those at the lower end of the income distribution. Consumption also increases with higher public pension entitlements. On the other hand, we don't uncover any evidence of changes in happiness related to expansions of public pension income. Most intriguing, our measure of consumption poverty shows no change with increases in public pension entitlements. This result could be explained by lower-income families finding other ways to maintain their consumption, for example through charity, family donations, or other mechanisms, in the absence of enriched public pension benefits.

Summary

Through comparative analysis of the systems of different countries, and with in-depth studies of aspects of Canadian and American elderly families, my research has contributed to understanding the impact of retirement policy. This research helps us to build a menu of the available policy options as each country within the OECD seeks a path toward a fiscally sustainable system of retirement incomes.

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[1] *Public pensions represented 6 percent of GDP in the United States in 2005, but 14 percent in Italy and 12.4 percent in France, according to "Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries" published by the OECD. http://dx.doi.org/10.1787/651748842654*

[2] *See "Social Security and Retirement around the World: Historical Trends in Mortality and Health, Employment, and Disability Insurance Participation and Reforms — Introduction and Summary", with D.A. Wise, NBER Working paper No. 16719, January 2011.*

[3] *See "Social Security Programs and Retirement around the World: The Relationship to Youth Employment, Introduction and Summary," NBER Working Paper No. 14647, January 2009. The conference volume has been published as* Social Security Programs and Retirement around the World: The Relationship to Youth Employment, *J. Gruber and D.A. Wise eds., Chicago: University of Chicago Press, 2010.*

[4] *See "How Household Portfolios Evolve after Retirement: The Effect of Aging and Health Shocks" with C. Coile, NBER Working Paper No. 12391, July 2006, and* Review of Income and Wealth, *2009, Vol. 55, No. 2, pp. 226–48.*

[5] *See "Life-Cycle Asset Accumulation and Allocation in Canada," NBER Working Paper No. 10860, October 2004, and* Canadian Journal of Economics, *2005, Vol. 38, No. 3, pp. 1057–1106.*

[6] *See "Retirement Income Security and Wellbeing in Canada," with M. Baker and J. Gruber, NBER Working Paper No. 14667, January 2009.*

Trust and Finance

Paola Sapienza and Luigi Zingales*

In recent years, economists have become increasingly interested in studying how specific institutions and norms affect economic behavior and economic performance. One part of our research, developed with Luigi Guiso, examines the interactions between a small but important subset of norms and institutions: trust and civic capital. This research also explores the effects of these factors on economic outcomes, such as economic growth.

Trust, Social Capital, and Financial Development

Our first contribution in this area introduces the concept of trust into financial economics. One paper investigates how social norms affect financial develop-

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