How Do Public Pensions Affect Retirement Incomes and Expenditures? Evidence over Five Decades from Canada

Kevin Milligan
University of British Columbia
and
David A. Wise
NBER

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In this paper, we study the impact of Canada's public pension system on the income and expenditures of the elderly. Two factors make the study of these effects in Canada particularly advantageous. First, the Canadian system has undergone tremendous change since its introduction in 1966, transforming from a small flat benefit for 70 year olds to a complex multi-tiered structure that incorporates flat benefits, income-tested benefits, and earnings-related benefits. These reforms provide a rich source of policy variation for analyzing incremental impacts on well-being. Importantly, the reforms affect pension recipients of only certain ages and in certain years, allowing us to analyze impacts both across individuals and over time. Second, we have access to comparable Canadian microdata spanning five decades, allowing us to analyze income and expenditures in detail throughout the introduction and historical evolution of the program.

We study the income and expenditures of Canadian elderly families over the five decades from 1960 to 2010. We first document the tremendous changes in income and expenditures over this period. We then use simulations to estimate the impact of the public pension system on these measures of well-being. We calibrate our simulations to capture the institutional variation in policy parameters across ages and over time. These simulated benefits are then used as instruments in a regression analysis of the impact of public pension benefits on income and expenditures. We close with a counterfactual policy simulation of how poverty in the 2000s would have looked had Canada imposed the public pension system prevailing in each decade from 1960 to 2010.

Our analysis reveals three important findings. First, we document that the expansion of Canada's public pension system over the last 50 years has coincided with a large improvement in elderly living standards, measured by income or consumption. In addition, the patterns of income and expenditure growth over this period are consistent with the timing of the impact of various policy changes, suggesting that the introduction and expansion of the public measures had some causal impact on elderly well-being.

Second, we use an instrumental variables strategy exploiting variation across ages and years in the Canadian system to test for a causal relationship. We find strong evidence that public pensions have lifted income. For expenditures, the evidence is more mixed but there is strong evidence of improvements in reducing expenditure poverty. Related, we find stronger responses of income at the bottom of the distribution than at the top.

Third, taking our estimates on the effect of income poverty, we perform counterfactual simulations by applying the public pension system of different decades to the data from the 2000s. Overall, these simulations show the large impact of the expansion of Canada's public pension system over the five decades from 1960-2010. To put some more precise numbers on the extent of the reduction, the average relative income poverty rate for ages 70-79 under the 1960 system was 33.9 percent. Under the 2010 system, relative income poverty dropped to 4.1 percent, for an 88-percent drop. For expenditures, the drop between 1960 and 2010 in the simulations is from 36.3 percent to 15.9 percent, which is a 56-percent drop.