HIGHLIGHTS

MEASURING THE VALUE OF DISABILITY INSURANCE FROM TAKE-UP DECISIONS

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This working paper develops a novel revealed-preference approach to measure the insurance value of Disability Insurance (DI) benefits. The method compares the DI take-up response to a change in benefits with the DI take-up response to a change in wages. This comparison makes it possible to evaluate the central incentive-insurance trade-off in DI: providing insurance to those in need while maintaining incentives to work.

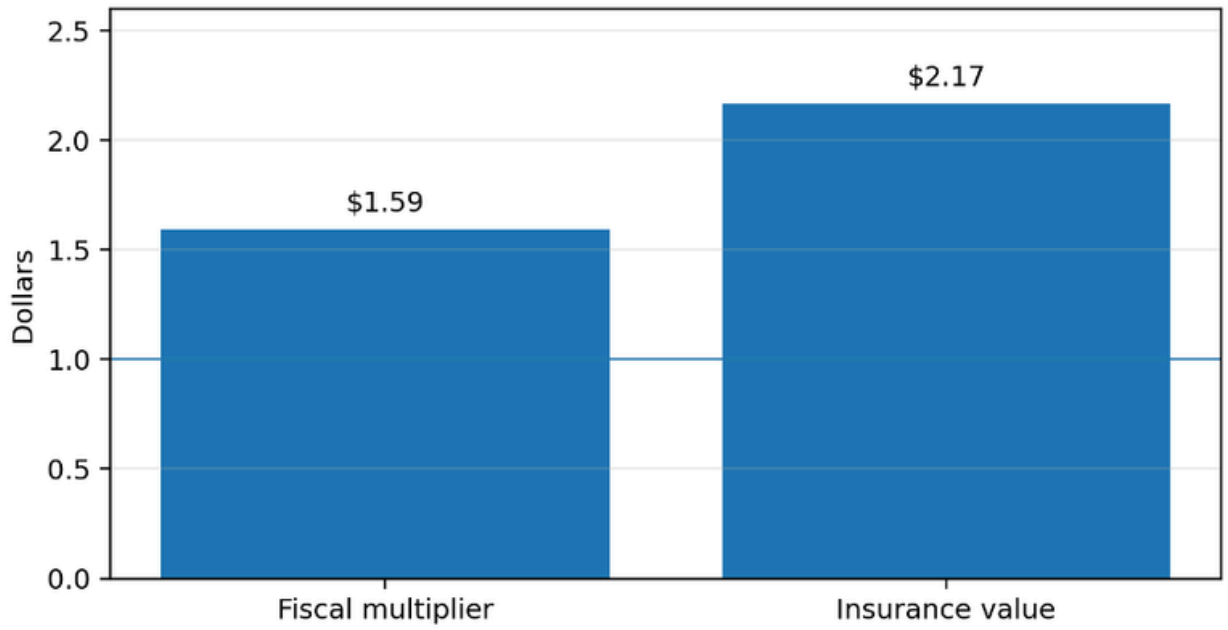
The analysis combines administrative tax return data from the Longitudinal Administrative Databank, a representative panel of 20% of Canadian tax filers between 1982 and 2019, with two sources of quasi-experimental variation. The first is the 1987 reform that increased Canada Pension Plan Disability (CPP-D) benefits by about 36% to align them with Quebec Pension Plan Disability (QPP-D) benefits. The second uses local labor market shocks generated by differences in industry composition across Census Divisions, together with variation in oil and gas employment and prices. The analysis focuses on individuals aged 15 to 59 and uses a difference-in-differences design and instrumental-variable strategies.

This working paper finds that:

- Before the reform, average DI benefit receipt was 1.25% in the Rest of Canada and 1.33% in Quebec over 1982–1986. Five years after the reform, DI take-up in the Rest of Canada was 0.527 percentage points higher relative to Quebec. The authors estimate a DI take-up elasticity with respect to DI benefits of 0.58.
- A $1,000 increase in DI benefits raises DI take-up by about 0.208 percentage points.
- Conversely, a $1,000 increase in lifetime income reduces DI take-up by about 0.096 percentage points in the preferred specification based on the industry shift-share design. Estimates based on oil and gas employment and oil prices imply reductions of 0.061 to 0.072 percentage points.
- About 87% of the reform-induced increase in DI inflow comes from individuals who had positive labor income in the previous two years. This decomposition suggests that benefit substitution from other welfare programs is limited in this setting.

- Combining the take-up responses to DI benefits and lifetime income implies an insurance value of $2.17 for each additional $1 of DI benefits in the preferred specification. The oil-based designs imply higher insurance values, between $2.89 and $3.42, but they identify different complier populations and may partly reflect composition differences.
- The fiscal multiplier of a $1 increase in DI benefits is estimated at $1.59. This includes the $1 paid to current beneficiaries plus about $0.59 in additional fiscal costs associated with induced entry into DI.
- Because the data do not observe receipt of other welfare programs before 1992, the authors use DI inflows from individuals with no labor income in the previous two years as an upper-bound proxy for possible benefit substitution from other welfare programs, such as provincial social assistance. These inflows account for about 13% of the reform-induced DI inflow. Even if all of them are attributed to benefit substitution, the corrected insurance value remains $1.88, above the estimated fiscal cost of $1.59. Here, benefit substitution refers to movement from other income-support programs into DI, not substitution within the CPP-D.
- The marginal entrants affected by changes in DI benefits and lifetime income have broadly similar observable characteristics. They are around age 50, have similar mortality by age 60, and are over-represented at the lower end of the earnings and income distributions. This similarity supports interpreting the results as differences in insurance value rather than composition effects.

Fiscal multiplier and insurance value of a $1 increase in DI benefits



CONCLUSION

The point estimates indicate that Canadian public DI benefits provide insurance value that exceeds their marginal fiscal cost, although the authors cannot reject the hypothesis that the insurance value and marginal fiscal cost are equal. Higher benefits increase DI take-up and therefore generate a sizable incentive cost, but the marginal utility of an additional dollar in the disabled state is more than twice the marginal utility of an additional dollar in the non-disabled state. In the preferred specification, the insurance value is estimated at $2.17 against a fiscal multiplier of $1.59. The authors interpret this as evidence that Canadian public DI benefits are not overly generous. In richer models, the revealed-preference approach identifies the insurance value for marginal entrants; under the conditions discussed in the working paper, this estimate can be interpreted as a lower bound for the program's average insurance value.

POTENTIAL POLICY IMPLICATIONS

Assessments of DI generosity should consider take-up responses, work incentives, and insurance value jointly. A higher take-up response to more generous benefits should not be interpreted only as an incentive cost, because the same behavior also reveals the value of insurance. The proposed approach can be applied in other countries where data on take-up, benefits, and wages are available, and it can be extended to other social insurance programs in which individuals choose between working and program take-up, including sick leave and old-age pensions. Applications in other settings should verify that benefit and wage changes affect comparable marginal entrants and should account for possible benefit substitution across programs.