

Issues in disability insurance

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World Bank core course,

November 2007

Why disability benefits?

- Old age benefits and disability benefits are both designed for part of life when people can no longer earn and work productively.
- Disability benefits came first historically--war veterans, new systems
- Reasons for making disability mandatory—myopia by buyers, fear of adverse selection by sellers, social cost
- Disability benefits 20-30% of soc sec costs

Key differences between old age and disability insurance

- Most people reach old age—so this is an event with high probability for all of us. Rationale for mandatory saving as part of old age plan.
 - Age is objective unambiguous condition.
- Few people become disabled—lower probability but higher cost because occurs early in life. Rationale for insurance (pooling).
- But disability is often a subjective ambiguous condition so insurance difficult and costly
 - high administrative costs, false positives
 - moral hazard, corruption

I will discuss

- Some major issues concerning disability insurance
- Chile as case study of a new approach to disability, designed to solve these problems
 - how to integrate disability into multi-pillar system
 - how to use funding in a disability plan
 - how to use private sector to control costs
 - Based on James, Edwards and Iglesias, 2007

Disability Issues

- High costs, sometimes rising
- Type 1 vs. type 2 errors—social choice
- Interactions between disability and old age systems
- Work (dis)incentives in disability programs—affect costs and national output

Issues: 1) High (rising) costs

- Cost of disability ins. usually 2-10% of wages, 20-30% of total social security costs.
- Demand-side forces that raise costs:
 - Tighter early retirement: Disability an alternate
 - High UnE—workers lose jobs, claim disability
 - Adverse selection into formal system by workers with higher probability of disability
- Supply side forces that raise costs:
 - Weak incentives for tight administration
 - Easy disability used to cut unemployment rates
 - More generous benefits and expanded definition of disability (mental illness)

Issues: 2) Type 1 vs. type 2 errors

- Definition of disability often ambiguous so choice must be made between false positives vs. false negatives
 - Especially difficult as “hard” diagnoses (cardiac, cancer) decline and “soft” diagnoses (back pain, psychiatric) rise
- Emphasis on avoiding false negatives raises system costs and vice versa
- What is the right mix of type 1 vs. type 2 errors, insurance benefits and costs? No single right answer, social choice needed.

3) Poor integration with old age benefits raises costs

- If ER is tightened, disability claims rise—
plan for spillover effects
- If disability more generous than old age benefits, workers may apply for disability—
coordinate benefits
- In multi-pillar systems, should disability benefit be DC or DB?
 - In DC, small accumulations for young disabled workers=>small pensions
 - But if disability benefit is generous DB, moral hazard =>excessive disability claims

4) Work incentives

- Desirable to encourage the disabled to return to work, to increase economy's labor supply and productive capacity
 - Should money be spent on retraining, rehab?
 - Important in industrialized countries. Less in developing countries with high unemployment
- Dilemma: Benefits often stop when individual can work, earns wages—this is work disincentive. But if benefits continue, they may be paid to people who are no longer disabled, costly.

Some methods used by traditional systems to cut costs

- Certification by system doctors required
- Case reviewed after period of temporary disability
- Parity between disability and old age benefits
- Individual converts to old age benefit at age 65-67
- Preparation for higher claims and rejection rates when early retirement is tightened
- Governments stop using easy disability as means to cut unemployment rates
- Adverse selection countered by eligibility rules
- Retraining, rehabilitation to raise work capacity

Chilean case study: How disability system works

- Individual contributes 10% of wage to pension fund (AFP) for retirement saving--DC
- If worker becomes disabled, he is guaranteed a DB (70% total, 50% partial disability) by his AFP
- If money in account isn't enough to cover lifetime DB, top-up by additional payment
- Each AFP purchases term group insurance policy that covers cost of top-up for its affiliates
- Insurance fee is included in general administrative fee that AFP charges workers—about .7% of wage
- Survivors insurance for workers also DB covered by individual account + group policy for top-up

2 structural changes in new system

- Pre-funding rather than PAYG
 - through accumulation in retirement accounts
 - through additional payment to cover DB life annuity when person is permanently disabled
 - simulations show this cuts costs in long run, especially when interest rates are high
 - makes cost less sensitive to population aging
- New financing and assessment procedure
 - Combined public + private, DB + DC
 - Include participation in assessment by private pension funds (AFPs) and insurance companies
 - AFPs have strong incentives and power to control costs

Role of AFPs in assessment procedure

- Initial claims evaluated by 21 Regional Medical Boards chosen by regulator—each has 3 doctors
 - AFP Association has medical observers who attend regularly, monitor procedure, don't vote
 - AFPs & ins. companies can appeal approved claims to Central Medical Board (26% appeals)
- 3 years later, assessment for permanent disability
 - AFPs and insurance companies participate.
 - if granted, workers keeps for life, even if he works (removes work disincentive)
- AFPs have reps on Technical Commission that determines criteria for total and partial disability

How adverse selection is countered

- To be insured--work & contribute last 12 months
 - AFPs have contribution records, check eligibility
 - Counteracts adverse selection in informal market
 - In 2004 40% of successful claims were ineligible
 - (If disabled but not insured, get access to own account but not top-up and may get MPG)
- Reference wage: average earnings during past 10 years (price-indexed)
 - Low contribution density and high informality means low reference wage. AFPs check records
 - Average contribution density is 60% so average reference wage only 60% full time wage
 - Reduces costs and incentive for adverse selection

Cost-control measures

- Assessment by system's medical experts
- Re-assessment after 3 years
- Appeals against positive or negative decisions
- Eligibility rules and ref wage counter adverse selection in shift from informal to formal markets
- Use of own-account reduces moral hazard and insurance fee
- No penalty for continued work
- Most of these measures could be used by traditional systems. But Chile also includes pre-funding and participation by private AFPs with strong incentive to control costs

Pecuniary interest of AFPs to control costs

- Suppose total fee is 2.4% of wage
 - 1% is insurance fee + 1% admin cost + .4% profit = 2.4
- If insurance cost cut to .8% and fee is unchanged, profit increases by 50%
- AFPs have incentive and are given role in assessment procedure to control costs
- Contrast with traditional systems where assessment is run by public agency or medical experts who have no direct incentives to cut cost--importance of incentives facing gate-keepers

Results

- Low payroll tax for disability in Chile—
 - .7% in Chile, 1.8% in US up to age 65, 2-6% in most OECD, up to 10% in some countries
- Lower proportion (28%) of claims approved
- Lower incidence of disability
- This may be due to many other differences between countries
- But also lower disability hazard in new than traditional old system in Chile
 - Only 20-35% as high as in old system
- New system targets most severely disabled with highest mortality rates

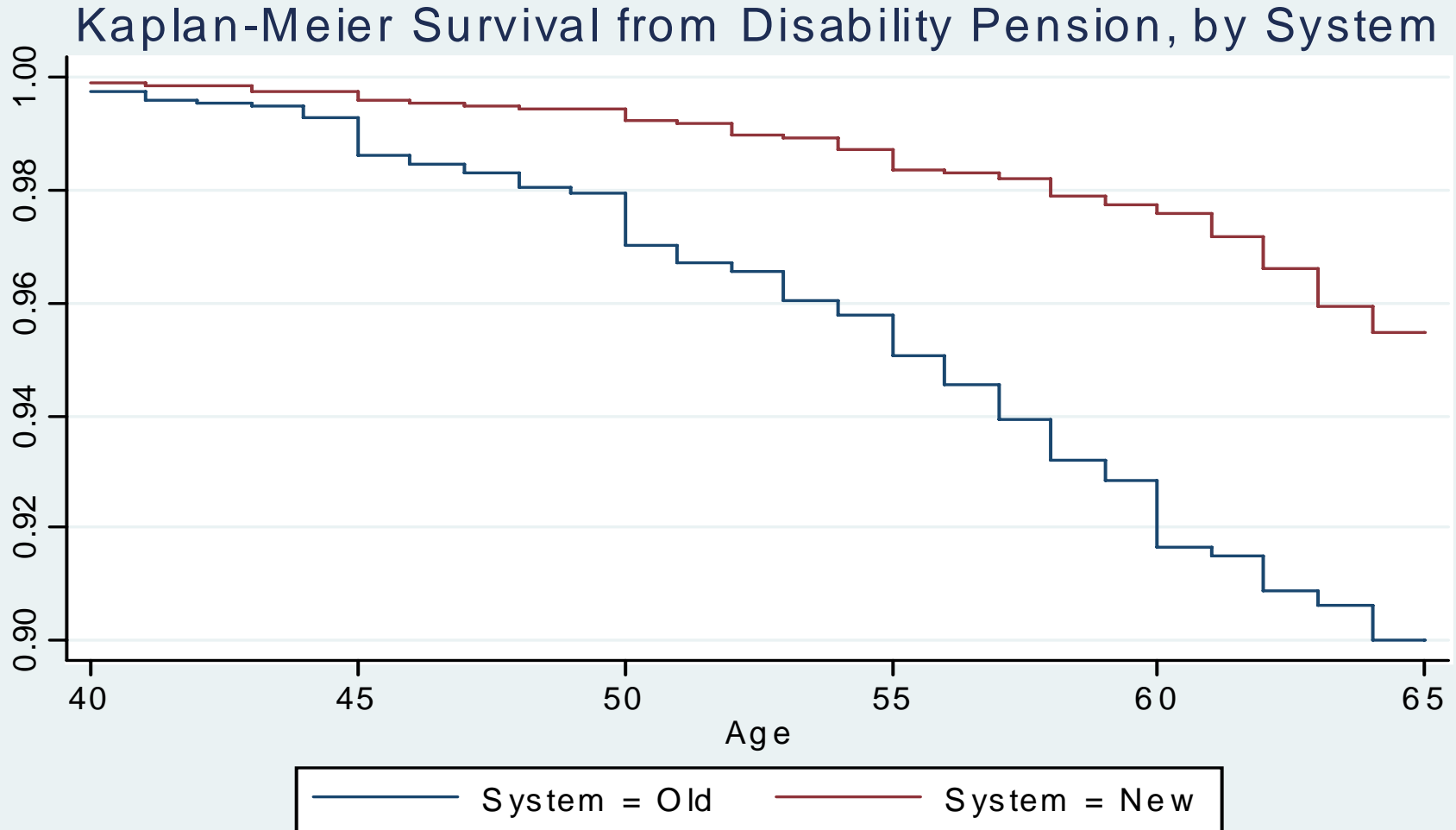
Table 1: Inflow to disability benefit status, Chile vs. US and OECD, 1999 (new inflow, per thousand insured)

Age group	20-34	35-44	45-54	55-59	60-64
Chile	.2	.9	2.9	7.2	12.3
US	2.7	4.5	7.8	13.9	12.8
OECD	2.3	4.2	8.6	14.9	14.1

Kaplan-Meier survival function and Cox hazard rate

- Using data from retrospective sample of 17000 new & old system affiliates, in systems between 1982-2002, we constructed KM survival function and Cox proportional hazard model
- At any given age, new-system affiliates have much lower hazard of becoming disability pensioner and higher probability of remaining non-disabled than old-system affiliates

Kaplan-Meier survival as non-disability-pensioner, by system

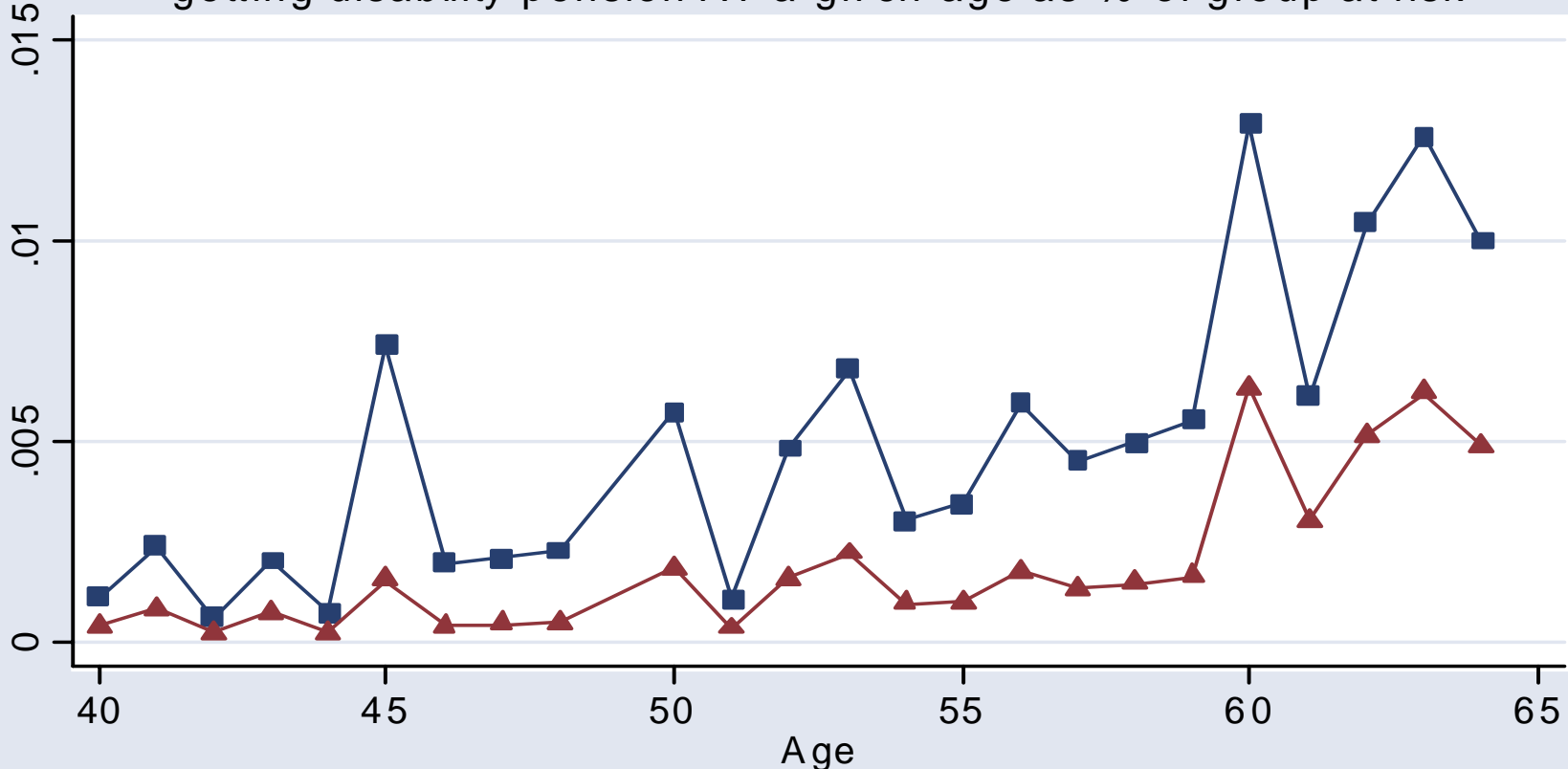


Estimate based on 1932-62 birth cohorts not pensioned by age 40

New vs. old system disability hazards for married men

Disability Baseline and New System Hazard - Cox Model

getting disability pension AT a given age as % of group at risk



—■— Married Men - Old System —▲— Married Men - New System

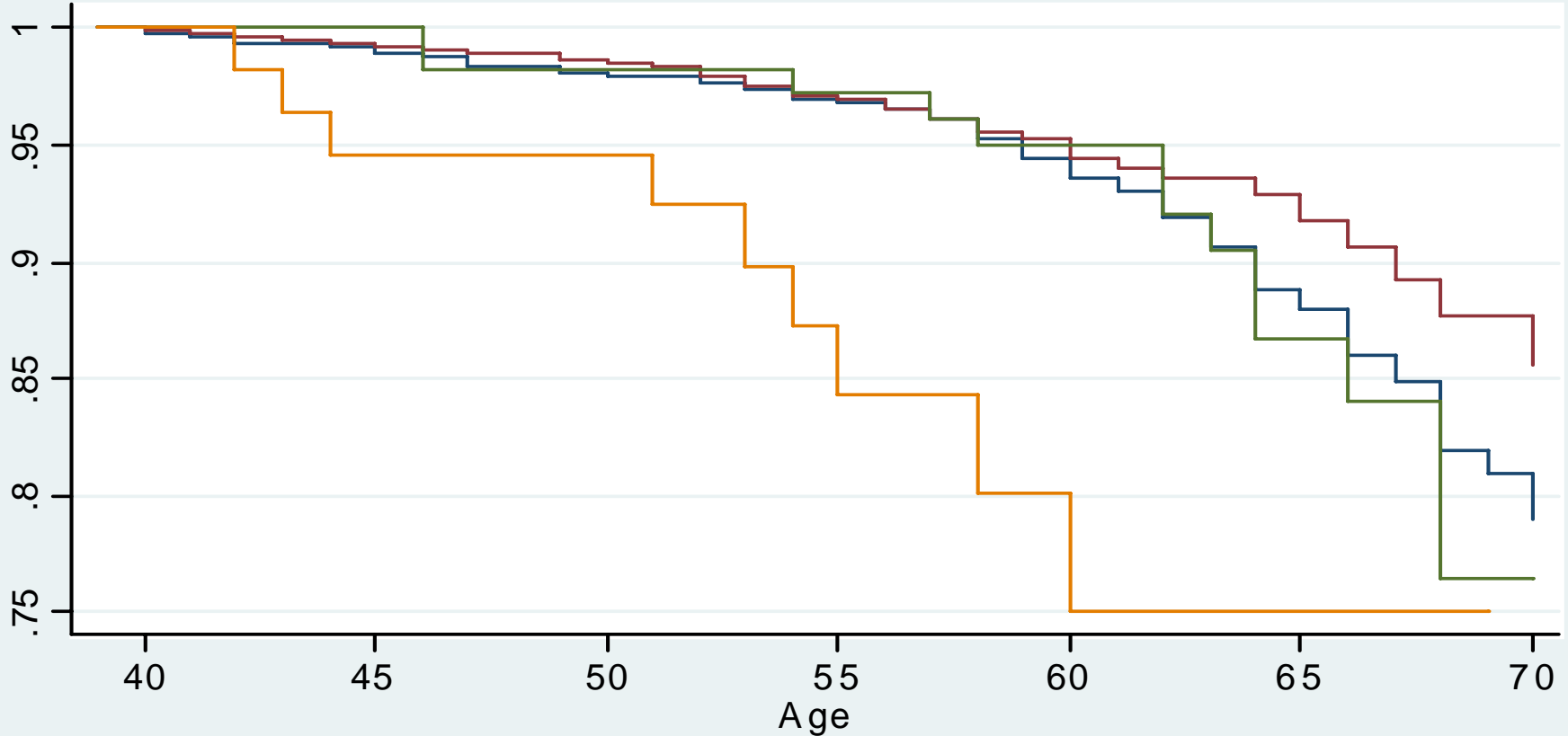
Estimate based on 1932-62 birth cohorts not pensioned by age 40

KM life survival function by age

- If disability system targets those with severe medical conditions, should have higher mortality rates for disabled than non-disabled.
- Probit analysis shows that in old system, age-specific mortality and survival rates are similar for disabled and non-disabled affiliates—no sorting
- In new system, life survival rates rise for non-disabled affiliates, fall for disability-pensioners—much better targeting, fewer false positives

Kaplan-Meier: Survival rates (not dying) by disability status and system

Kaplan-Meier Survival by Disability and System

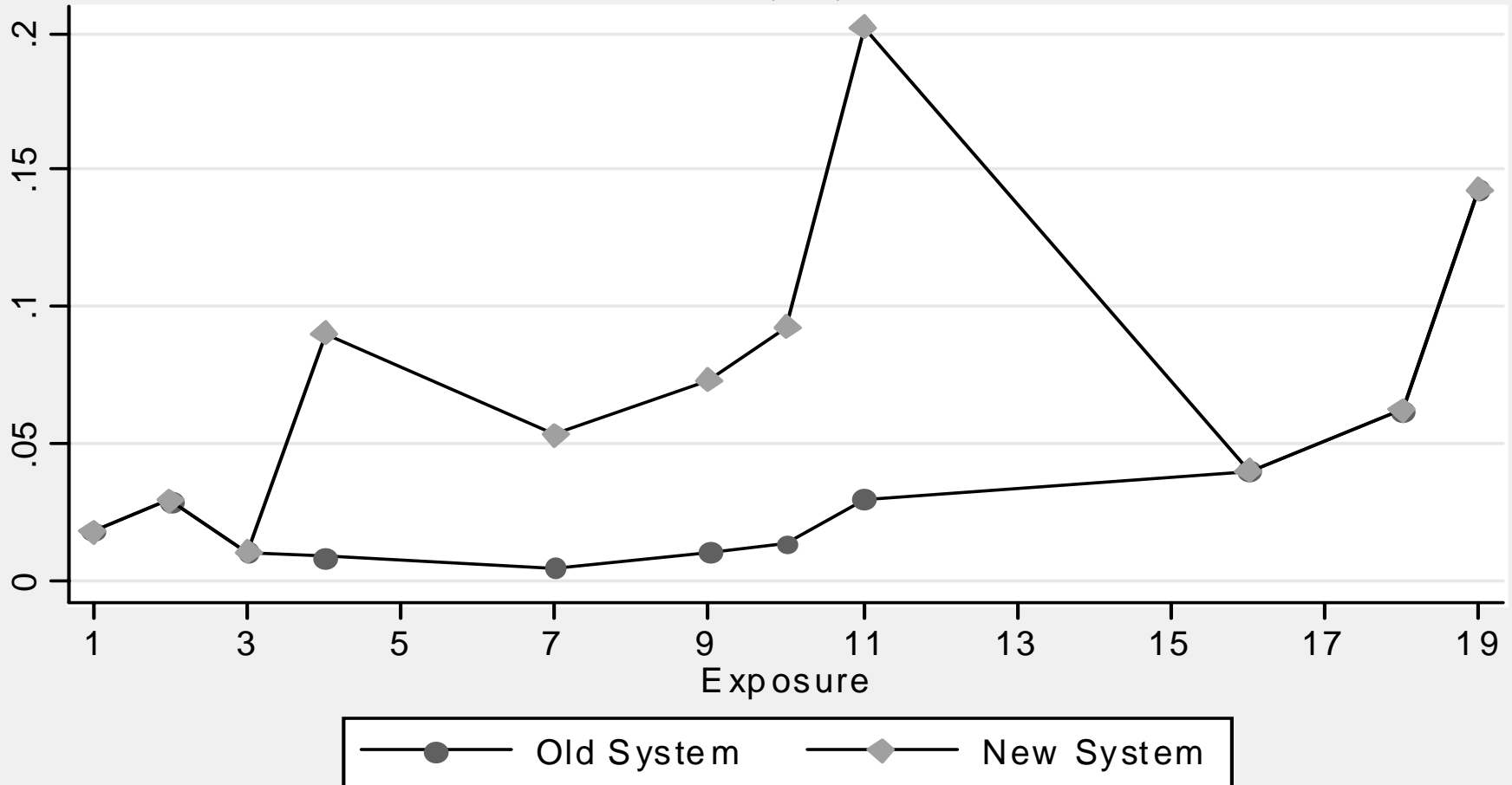


— Non Disable-Old System — Non Disable-New System
— Disable-Old System — Disable-New System

Estimate based on 1932-62 birth cohorts not pensioned by age 40

Death hazard among disability pensioners, by system

Death Hazard After Disability Pension - Cox Model Men - by System



Estimate based on 1932-62 birth cohorts not pensioned by age 40

What can other countries learn from Chile?

- Possible to cut costs substantially, and participation by private AFPs and insurance companies in assessment process does this
 - Hazard of becoming disabled pensioner is 65-80% lower in new compared with old system
- Possible to target toward those with most severe medical conditions
 - Mortality rates are much higher among disabled pensioners and lower among non-disabled in new system

Is Chile doing right thing?

- Cuts costs in accurate way, but may not have picked the “right” mix of total benefits & costs, average benefit vs. incidence, type 1 vs. type 2 errors. Value judgments inevitable, especially given ambiguity
 - How much to give to workers who might be disabled, financed by non-disabled workers
 - Right answer will vary among countries
- Incentives facing gate-keepers matter a lot
 - Pre-funding and private participation worth considering by countries that feel their disability costs are excessive