General Equilibrium Effects of Insurance Expansions: Evidence from Long-Term Care

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PRELIMINARY: PLEASE DO NOT CITE OR CIRCULATE

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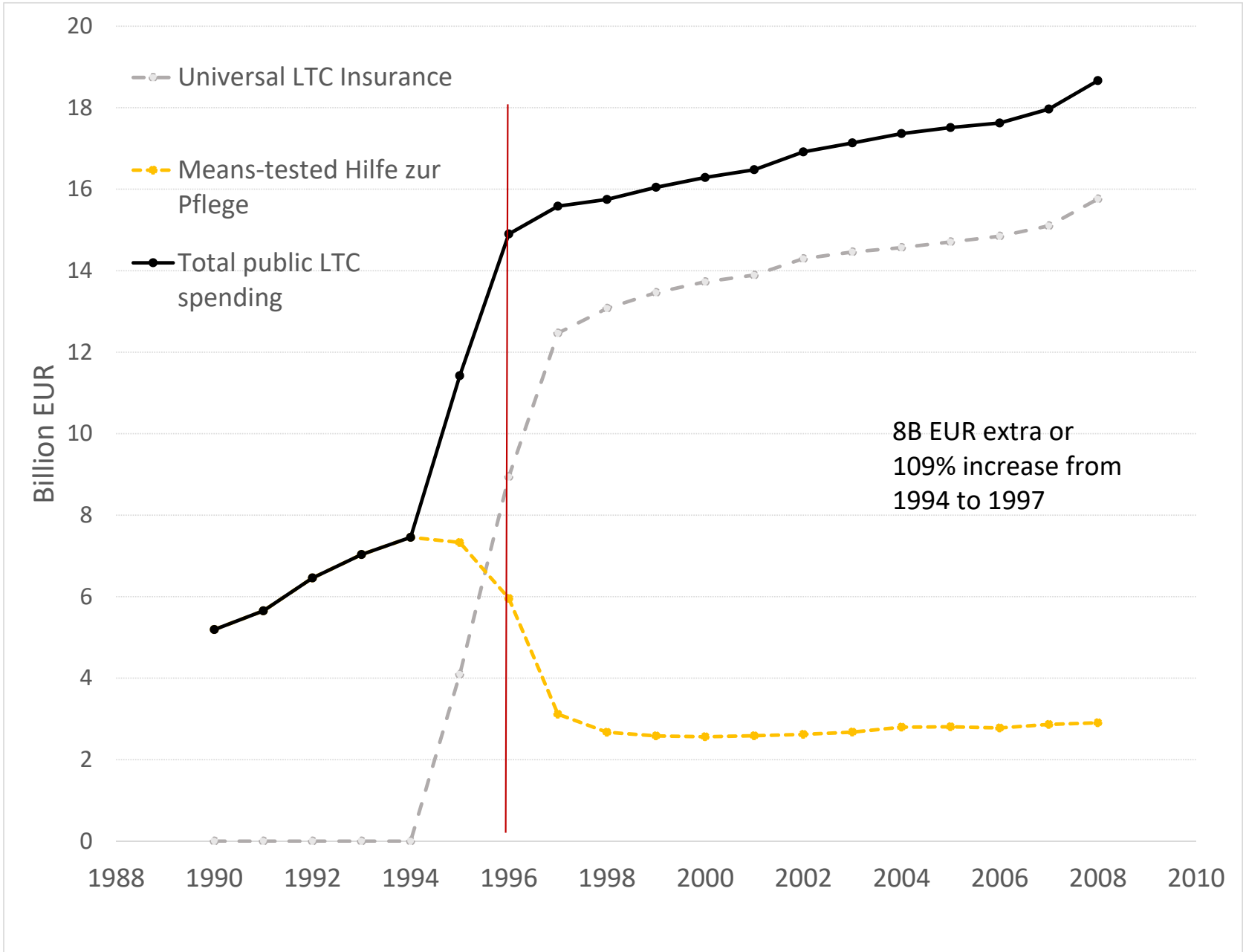
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Motivation

- Health insurance and the growth of the healthcare sector
  - Most work on health insurance expansions measures direct effects on healthcare utilization and health
  - Very **little evidence on general equilibrium effects** (Finkelstein, 2007; Kondo and Shigeoka, 2013)
  - For example, do health insurance expansions create jobs?
- Conceptually, insurance expansions should lead to supply-side expansions
  - Insurance gives risk protection to consumers, but also generates **more demand** for healthcare via (i) moral hazard and (ii) by relaxing liquidity constraints.
  - Demand expansion should lead to expansion of healthcare supply (Arrow, 1963)
  - Many anecdotes about how health insurance lead to the rapid growth of the healthcare sector, but limited systematic empirical evidence of this mechanism

This paper: Examine the expansion of LTC sector and LTC jobs in response to a rapid roll-out of the national long-term care insurance program (LTCI) in Germany in 1995/1996.

Growth in public spending on LTC, W.Germany 1990-2008



Economics of insurance expansion

- LTC insurance affects LTC market through two channels:
  1. Substituting for pre-existing sources of insurance or other public support for LTC - pure transfer, wouldn't expect any aggregate effects
  2. Insuring people without any pre-existing coverage
- Newly insured - LTCI is a subsidy for LTC services
- Consumer-facing prices go down, demand goes up (unless have 100% incidence on providers, which is unlikely)
- LTC sector needs to expand to meet new demand
- LTC is extremely labor-intensive - expansion all about the labor force

Our goals: (i) estimate how much LTC jobs grew; (ii) examine where these workers came from — are these new jobs; (iii) what was the quality of the jobs; (iv) fiscal implications and welfare: did this insurance expansion save lives?

Context: German Long Term Care

Why German LTC?

1. **Natural Experiment:** Sweeping LTC insurance expansion in 1995/96; ex ante expect a large demand shock
2. **Identification:** Variation in pre-existing LTC coverage levels - clean identification of causal effects of insurance expansion
3. **Data:** Detailed administrative data on all workers in LTC in years before and after the reform
4. **Policy:** Huge concern over shortages of skilled LTC workers - one *the* central policy debates in Germany in 2019

Data

1. Administrative data on establishments (BHP) and linked employer-employee data (SIAB)
   - Panel data covering 1975-2015 for 100% of all German workers except self-employed and public servants
   - Data on industry, occupations, earnings, hours, apprentices, education background, ownership type, ...
   - Focus our analysis on *inpatient* LTC providers, as these can be precisely identified in the data
2. Data on pre-expansion insurance coverage at the regional level from printed sources: statistical reports from late 1980s and early 1990s

German Long Term Care Reform: Details

- Sweeping reform in 95/96: more than doubled public spending
- Replaced means-tested program for the poor, "Hilfe zur Pflege" (HzP), by universal coverage based on LTC needs
- Beneficiaries can choose between cash and in-kind benefits and between inpatient, outpatient, and informal care
  - We focus on **inpatient** care due to better data
  - Substitution and expansion effects go in the same direction (more inpatient LTC) for our measure of exposure
- Main policy goals:
  - Provide financial risk protection to elderly
  - Financial relieve to local budgets that paid HzP
  - Provide incentives for outpatient (formal and informal) care
  - More provider resources, hope for competition and improvements in quality of care

Research Design

We exploit **variation in exposure**, $Exposure_c = 100\% - ShareHzP_r^{pre}(c)$, between counties c in regions r. For county c and year t, we estimate:

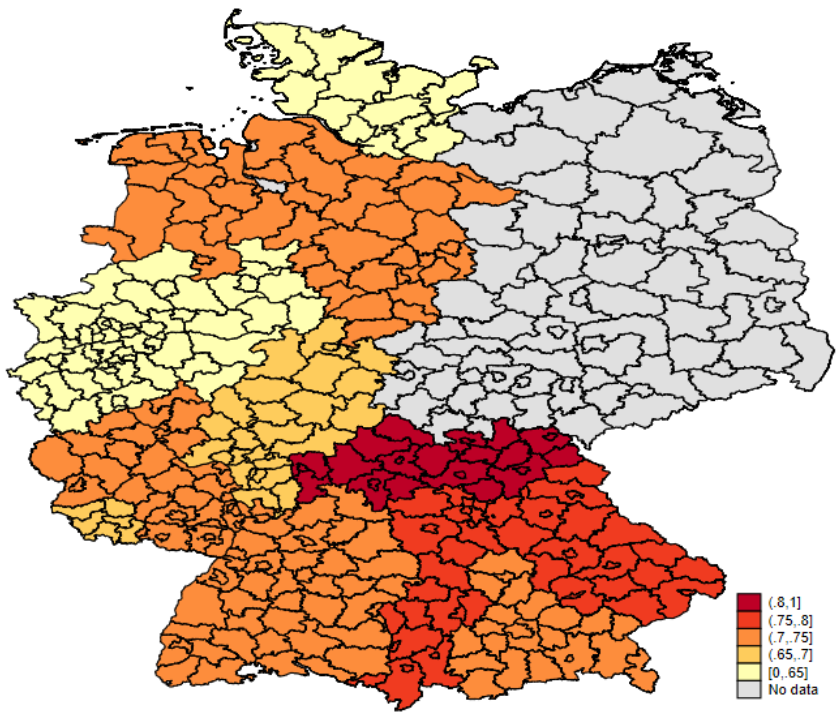
$$Y_{ct} = \alpha_c + \gamma_t + \sum_k \beta_k \times Exposure_{r(c)} + \epsilon_{ct}$$

where Y_{ct}

- Nursing homes per 1,000 elderly (by ownership type)
- Employees in inpatient LTC per 1,000 elderly
- New inpatient LTC workers: new jobs or re-allocation of jobs across sectors?
- Origins of new jobs: hiring from unemployment, migration, or recruiting people from non-LFP
- Quality of new jobs: full-time vs. part-time, skill levels and wages

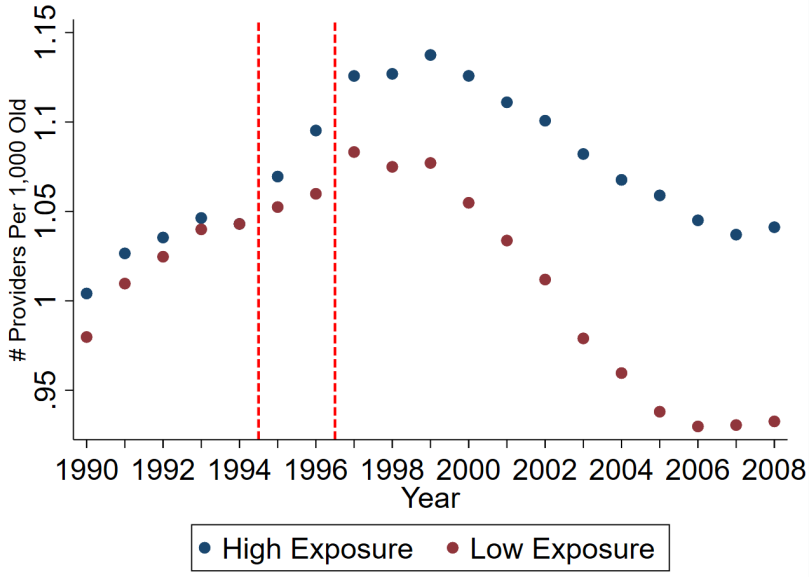
Measure of exposure

- Large expansion everywhere, but variation in exposure due to variation in means-tested HzP pre-reform (19% to 36%)
- LTCI replaced HzP payments
- $Exposure_c = 100\% - ShareHzP_r^{pre}(c)$. $ShareHzP_r^{pre}(c)$ defined as count of HzP recipients in 1993 divided by count of LTCI recipients in 1999. Measured for 15 geo regions.

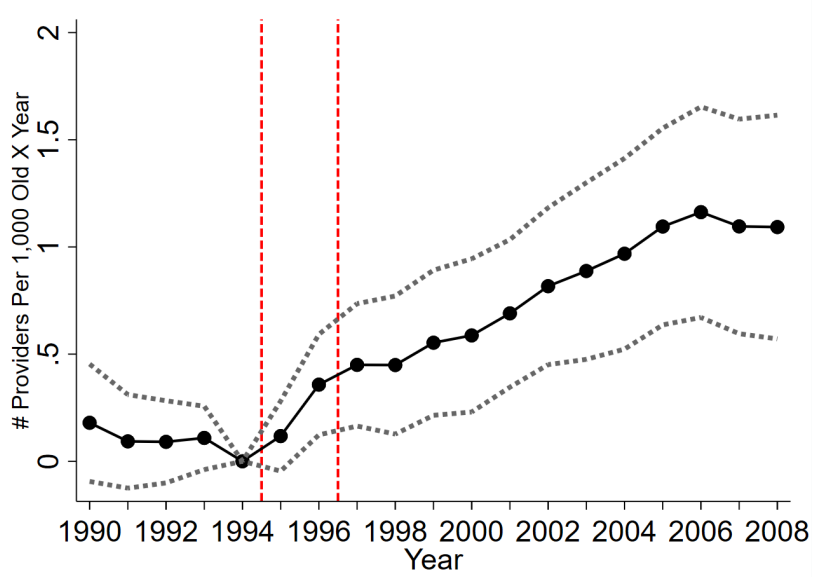


Results: Inpatient LTC entry per capita

(a) Time Series



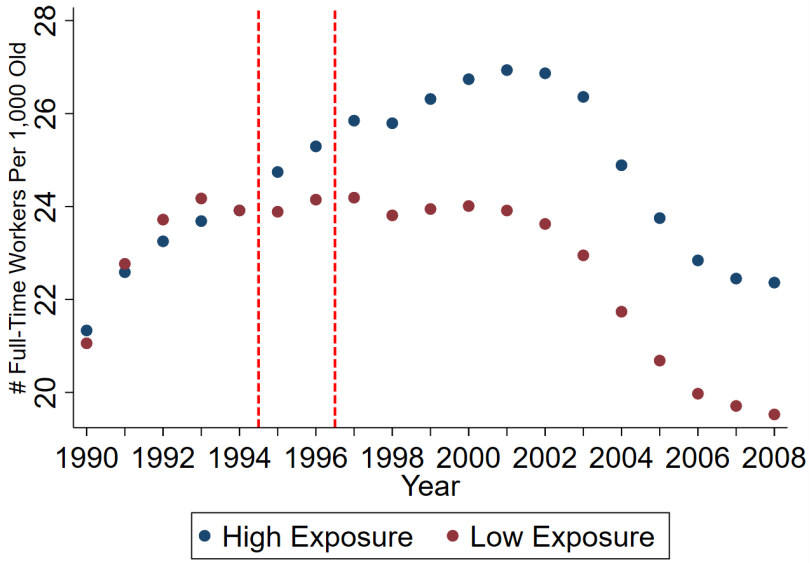
(b) Event Study



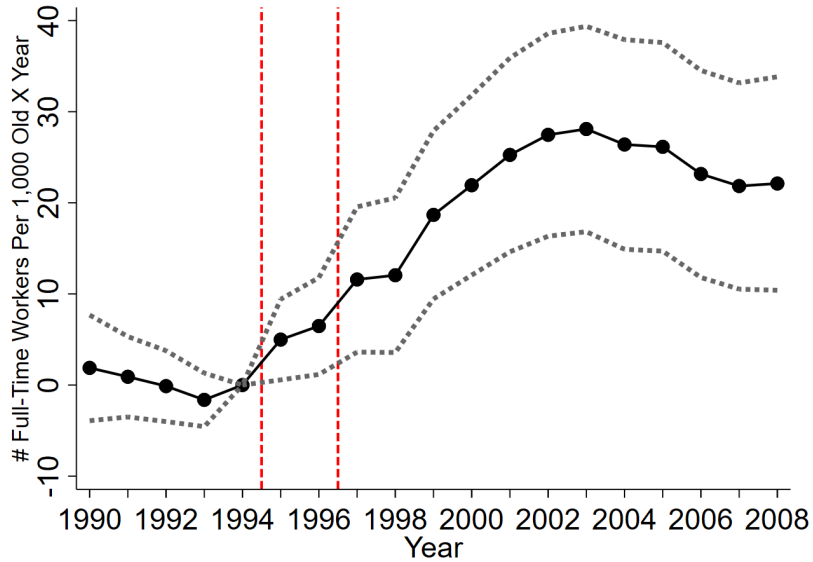
- Reform led to net entry in nursing homes: 10pp more in exposure generates ca. 0.1 per 1,000 nursing homes, which is roughly 10% increase relative to 1995 baseline
- Disproportionately larger effects among for-profit nursing homes
- Secular time-trend - rapid decline due to aging population; LTCI conceivably helps the catch-up

Results: Full-time inpatient LTC employment per capita

(a) Time Series



(b) Event Study



- Increase in nursing home full-time employment
- Roughly 10% increase in per capita workforce for each 10pp increase in exposure
- Disproportionately larger effects among for-profit nursing homes
- No disprop effects for female, part-time

Origins of full-time inpatient jobs

1. 41% from other sectors - **job shifting**
2. 35% from outside the current labor force - **new jobs**
3. 13% from short and long-term unemployment - **new jobs**
4. 11% migration from outside W.Germany - **new jobs**

- Do not see a change in the sources of hiring with the reform
- Hence, 59% of increase in LTC IP jobs are new jobs

Job accounting

- Event study estimates suggest ca. 3 full-time and 3 part-time extra inpatient LTC jobs per 1,000 elderly for each 10pp of exposure
- Average change in exposure - 70pp; on average have 42 more jobs per 1,000 elderly
- 59% new job ratio - get 25 **new** jobs per 1,000 elderly
- 10 million individuals over 65 in W. Germany in 1995
- Implies the **lower bound** (because counting only inpatient, not outpatient care) for the number of new jobs created is 248 thousand
- Get 32,000 EUR per job relative to 8 billion EUR total increase in spending through LTC insurance

Discussion

- Find that LTC insurance expansion lead to significant and rapid expansion in the number of employers and jobs in the LTC sector
- Many jobs were new - hiring workers from unemployment, outside of the labor force, or outside of W.Germany
- Fiscal results: spend under 32K EUR to generate one new job
  - *Policy question:* efficiency of spending funds via SI vs. other channels
- When thinking about **welfare gains from SI programs** and welfare losses from moral hazard, have to take into account **general equilibrium effects on local economies**