Intertemporal Labor Supply Substitution? Evidence from the Swiss Income Tax Holiday

Isabel Martínez ¹  Emmanuel Saez ²  Michael Siegenthaler ³

¹University of St.Gallen  ²UC Berkeley  ³KOF ETH Zurich

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The Frisch Elasticity of Labor Supply

- How much more are people willing to work when their wage increases \textit{temporarily}, e.g., due to a positive technology shock?
- Key parameter in macro models: it amplifies the effects of productivity shocks on labor supply and economic activity.
- Many business cycle models require very large Frisch elasticities (1.5 – 4) to match business cycle movements in employment.
- Hard to identify well empirically, especially for a macro-wide change.
- Longstanding divide in the micro and macro literature.
Contribution: A Population-wide Natural Experiment to Estimate the Observed Frisch Elasticity (with Frictions)

- Tax holidays: income faces a tax rate \( \tau = 0 \) for one period
- Ideal natural experiment (Chetty et al., 2013):
  - exogenous variation in wage rates \textit{unrelated} to labor supply or human capital accumulation decisions
  - substantial \textit{temporary} change in net-of-tax wages
  - \textit{entire} population
  - \textit{annual} frequency (relevant time frame for business cycles)
  - quasi-pure \textit{substitution} effect
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**Our paper:**
- Variation across time and *regions*
- Identification: Diff-in-Diff (DiD) and Event Studies (ES)
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Our paper:
- Variation across time and regions
- Identification: Diff-in-Diff (DiD) and Event Studies (ES)

Most closely related papers:
1990s Income Tax Reform in Switzerland

Transition from retrospective taxation to annual pay-as-you-earn

- Reasons: modernizing, simplifying and harmonizing
- Side effect: incomes earned during the two years prior to the change remained **untaxed** (blank years, tax holiday)

|--------|------|------|------|------|------|------|------|------|

- Decided at Federal level in December 1990 (DBG and StHG)
- Cantons chose different years to change: 1999, 2001, and 2003
Outline

1 Introduction

2 Estimation Approach
   ■ Identifying Variation
   ■ First Stage
   ■ Salience
   ■ Common Macro Trends
   ■ Data

3 Results
   ■ Extensive Margin (Did more people work?)
   ■ Intensive Margin (Did workers work more hours?)

4 Conclusion
Identifying Variation: Timing Across Regions

Blank Years in Each Canton

- 1997/98, federal and cantonal
- 1997/98 federal, 1998 cantonal
- 1999/00, federal and cantonal
- 1999/00 federal, 2000 cantonal
- 1999/00, federal tax only
- 2001/02, federal and cantonal
- No blank years
First Stage: Substantial Change in Average Tax Rates

![Graph showing average tax rate on a gross income of 100K CHF (real value 2010) from 1990 to 2010.]

- **Avg. tax rate in % on a gross income of 100K CHF (real value 2010)**
- **Tax Holiday in 1997-98**
- **Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.**

1 CHF $\approx$ 1 USD
First Stage: Substantial Change in Average Tax Rates

![Chart showing avg. tax rate in % on a gross income of 100K CHF (real value 2010) from 1990 to 2010.]

Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.

1 CHF ≈ 1 USD
First Stage: Substantial Change in Average Tax Rates

![Graph showing changes in average tax rates from 1990 to 2010.](image)

- **Avg. tax rate in % on a gross income of 100K CHF (real value 2010)**
- **1 CHF ≈ 1 USD**

Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.

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First Stage: Substantial Change in Average Tax Rates

![Graph showing changes in average tax rates over time.]

- **Avg. tax rate in % on a gross income of 100K CHF (real value 2010)**
- **Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.**

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First Stage: Substantial Change in Average Tax Rates

Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.

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First Stage: Substantial Change in Average Tax Rates

Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.

1 CHF ≈ 1 USD
First Stage: Substantial Change in Average Tax Rates
Mean average tax rate in the economy: 11.1%

Tax Holiday in...

Total federal, cantonal and municipal tax, single taxpayer; weighted by municipality population.

1 CHF ≈ 1 USD

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First Stage: Substantial Change in Marginal Tax Rates

Mean marginal tax rate in the economy: 24%

1 CHF ≈ 1 USD

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Expected Behavioral Responses

- Extensive margin (average tax rate): more people work
- Intensive margin (marginal tax rate): people work more
- Tax avoidance margin: shift earnings into tax holiday years

- Expect larger responses for more elastic subgroups/subgroups with larger tax changes
  - Women
  - High income earners
  - Self-employed
Salience: Newspaper Coverage and Cantonal Votes

Newspaper Coverage

- Newspapers and magazines extensively covered the tax holidays, starting prior to the tax-free years, and with region-specific timing. ◀ evidence

- Many articles specifically discuss the tax saving opportunities. ◀ example

Cantonal Votes

- 14 out of 25 cantons held a referendum ◀ dates

- Voting material explains the tax holiday to a broad public. ◀ voting material
Common Macro Trends: Unemployment Rates
Main Data: Matched AHV-Census Data

Social security data (AHV) 1981-2010
- panel data covering the universe of the Swiss population
- entire individual labor market histories containing uncapped labor incomes (incl. bonuses and stock options)
- job spells and unemployment spells per month

Census 2000 and 2010
- residential history
- marital status history
- household identifier (relevant for tax calculation)
- children
- education
Main Data: Matched AHV-Census Data

Disadvantages

- hours worked not known $\rightarrow$ focus on labor earnings
- non-random missing data in 1998 for employees
  $\rightarrow$ 1998 generally excluded from analysis
- self-employment incomes missing in 1999 & 2000
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4. Conclusion
Wage Employment Rate: Men Aged 20-60

![Graph showing wage employment rate for men aged 20-60 from 1990 to 2010, with data points indicating a trend and shaded areas for tax holidays in 1999-00, 2000, and 2001-02.]

Data source: AHV-STATPOP

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Wage Employment Rate: Women Aged 20-60

Data source: AHV-STATPOP

Intertemporal Labor Supply Substitution
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Event Study - Regressions at Individual Level

\[ Y_{it} = \alpha_i + \alpha_t + \sum_{k=-4}^{4} \delta_k TH^k_{ct} + X_{it} + \epsilon_{it} \]

- **\( Y_{it} \):** outcome of individual \( i \) in period \( t \)
- **\( \alpha_i \) and \( \alpha_t \):** person and year fixed effects
- **\( \sum_{k=-4}^{4} \delta_k TH^k_{ct} \):** a sequence of event study dummies equal to 1 \( k \) periods away from the first year of the federal tax holiday in canton \( c \) (excluding \( t - 2 \), which serves as reverence period)
- **Controls \( X_{it} \):** age, age squared, age by gender; linear time trends by canton of residence; two dummies for \( t \leq 5 \) and \( t \geq 5 \)

Identifying assumptions:
- Common trends in outcomes (e.g., employment and unemployment rates)
- Elastic labor demand evidence

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Event Study - Regressions at Individual Level

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Identifying assumptions:
- Common trends in outcomes (e.g., employment and unemployment rates)
- Elastic labor demand
Event Study: First Stage

-0.05 0 0.05 0.1 0.15

Effect of tax holiday

\[ \ln(1 - \text{average tax rate}) \]

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Event Study: Extensive Margin (Wage Earners)

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Nothing Ever Happens at the Extensive Margin

- Married women
- Older workers (age 51-60)
- Number of jobs
- Months employed
- Entry or exit of self-employed
- ...
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Average Wage Earnings per Employee

![Graph showing average wage earnings per employee from 1990 to 2010 with tax holiday periods indicated.]
Event Study: First Stage

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Event Study: Intensive Margin (Wage Earners)

Intertemporal Labor Supply Substitution

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Event Study: Intensive Margin (Wage Earners)

Effect of tax holiday

Average wage earnings

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Frisch Elasticity Estimates ▶ IV estimates

Frisch elasticity \( \eta^F = \Delta \ln y / \Delta \ln[1 - \tau] \)

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment rate</td>
<td>Earnings* p. employee</td>
</tr>
</tbody>
</table>

A: Total sample
Frisch elasticity \( \eta^F \)

<table>
<thead>
<tr>
<th>Employment rate</th>
<th>Earnings* p. employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>Women</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment rate</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
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</tr>
</tbody>
</table>

B: Married with children
Frisch elasticity \( \eta^F \)

<table>
<thead>
<tr>
<th>Employment rate</th>
<th>Earnings* p. employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>Women</td>
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</tbody>
</table>

C: Married without children
Frisch elasticity \( \eta^F \)

<table>
<thead>
<tr>
<th>Employment rate</th>
<th>Earnings* p. employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>Women</td>
</tr>
</tbody>
</table>

Observations 60 60 60 60
Canton group FE Yes Yes Yes Yes
Period FE Yes Yes Yes Yes

* In 1000 CHF
Average Wage Earnings: High-income Employees

Wage earnings per person (in 1000 CHF)


Wage earnings per person (in 1000 CHF)

100 125 150 175 200

High income: avg. real wage earnings in 1994-1996 > 100k CHF/year
### Frisch by Pre-Reform Earnings (annual avg. 1994-1996)

#### IV estimates

<table>
<thead>
<tr>
<th>Earnings p.p. (incl. 0)</th>
<th>Earnings per employee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1–25k CHF</strong></td>
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<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.04</td>
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<tr>
<td><strong>25k–50k CHF</strong></td>
<td></td>
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<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.02</td>
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<tr>
<td><strong>50k–100k CHF</strong></td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.03*</td>
</tr>
<tr>
<td><strong>100k–200k CHF</strong></td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.05***</td>
</tr>
<tr>
<td>More than 200k CHF</td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.09**</td>
</tr>
</tbody>
</table>

Observations: 60
Canton group FE: Yes
Period FE: Yes

---

**Intertemporal Labor Supply Substitution**

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Event Study: Self-Employment Income

By gender

- Effect of tax holiday
  - t-4
  - t-3
  - t-2
  - t-1
  - 1st TH
  - 2nd TH
  - t+2
  - t+3
  - t+4

All self-employed
>100k CHF in 1994/96

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Conclusion

1. Significant but quantitatively small responses of earnings consistent with an observed Frisch elasticity of 0.05

2. No responses along the extensive margin, even for groups less attached to the labor force

3. Self-employed and high income earners display larger responses

4. Estimates may even be upward biased due to tax avoidance

Our results do not support the idea that the labor supply channel plays a major role in explaining business cycles.
Thank you.

Comments and questions welcome: isabel.martinez@unisg.ch
Appendix
Empirical Evidence: Extensive Margin Elasticity

\[
\epsilon^F_{ext} = \frac{\Delta \log (E/P)}{\Delta \log (w^{net})}
\]

Chetty et al. (2013), Table 1

<table>
<thead>
<tr>
<th>Study</th>
<th>(\epsilon^F_{ext})</th>
<th>(\Delta \log (w^{net}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Intertemporal Substitution (Frisch) Elasticities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Carrington (1996)</td>
<td>0.43</td>
<td>0.08</td>
</tr>
<tr>
<td>11. Gruber and Wise (1999)</td>
<td>0.23</td>
<td>0.07</td>
</tr>
<tr>
<td>12. Bianchi, Gudmunndsson, and Zoega (2001)</td>
<td>0.42</td>
<td>0.07</td>
</tr>
<tr>
<td>13. Card and Hyslop (2005)</td>
<td>0.38</td>
<td>0.03</td>
</tr>
<tr>
<td>14. Brown (2009)</td>
<td>0.18</td>
<td>0.01</td>
</tr>
<tr>
<td>15. Manoli and Weber (2011)</td>
<td>0.25</td>
<td>0.01</td>
</tr>
<tr>
<td>Unweighted Mean</td>
<td>0.32</td>
<td></td>
</tr>
</tbody>
</table>

Men, Age 59, variation in social security replacement rates
Iceland, 1987 zero tax year
Single Mothers, Canadian Self-Sufficiency Project
Teachers Near Retirement, California Pension System Cutoffs
Workers Aged 55-70, Austria severance pay discontinuities
Average Tax Rates over Time: Low Income Households

Data source: Parchet (2018) and ESTV, own calculations
Average Tax Rates over Time: SSER-Sample

Data source: Parchet (2018) and ESTV, SSER-data, own calculations

Intertemporal Labor Supply Substitution
Martínez, Saez, Siegenthaler
Marginal Tax Rates over Time: SSER-Sample

Data source: Parchet (2018) and ESTV, SSER-data, own calculations
Figure 1a: 1987 Tax Holiday in Iceland
Salience: Popular Referenda Held in 14 Cantons

Dates of popular referenda on the reform

- ZH 8.6.1997
- AG 18.4.1999
- AI 25.4.1999
- GR 13.6.1999
- BL 13.6.1999
- OW 24.10.1999
- GL 7.5.2000
- AR 21.5.2000
- BE 21.5.2000
- UR 21.5.2000
- SH 27.8.2000
- SZ 24.9.2000
- NW 26.11.2000
- ZG 26.11.2000

Date of popular referendum

Gewusst wie:

2003 wird im Wallis die Gegenwartsbemessung eingeführt.
Was hat dieser Steuersystemwechsel für Auswirkungen in der Bemessungslücke 2001 und 2002


Von Alois Kämpfen, dipl. Wirtschaftsprüfer


Vorteile der neuen Methode

Was auf den ersten Blick nach zusätzlichen Papierkrieg aussieht, hat jedoch auch ihre Vorteile.

Ablauf des Wechsels des Veranlagungssystems


Im Jahr 2003 wird das Durchschnittseinkommen von 1999 und 2000 (Fr. 62'500) aufgrund der diesjährigen Steuererklärung versteuert.

2003 wird aktuelles Einkommen 2003 (Fr. 65'000) versteuert.

2004 wird aktuelles Einkommen 2004 (Fr. 75'000) versteuert.

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38/29
This table explains the transition with a numerical example, pointing out the blank years and extraordinary incomes and expenses (canton AI).

### Vereinfachtes Zahlenbeispiel:

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td><strong>Einkünfte:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Ordentliches Jahreseinkommen</td>
<td>70'000</td>
<td>70'000</td>
<td>80'000</td>
<td>90'000</td>
<td>65'000 inkl.</td>
</tr>
<tr>
<td>ausserordentliche Einkünfte</td>
<td></td>
<td></td>
<td>100'000</td>
<td>20'000</td>
<td></td>
</tr>
<tr>
<td>ausserordentliche Aufwendungen</td>
<td></td>
<td></td>
<td>30'000</td>
<td>0</td>
<td>inkl.</td>
</tr>
<tr>
<td><strong>Steuerveranlagung:</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ordentl. Einkommen: Revision vorbehalten! (80'000 und 90'000 fallen in die Bemessungslücke)</td>
<td></td>
<td></td>
<td>70'000</td>
<td>70'000</td>
<td>65'000</td>
</tr>
<tr>
<td>ausserordentliches Einkommen: (separate Jahressteuer)</td>
<td></td>
<td></td>
<td>100'000</td>
<td>20'000</td>
<td></td>
</tr>
<tr>
<td>ausserordentliche Aufwendungen:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revision der HE 1999/2000:</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>70'000 – (30'000 : 2) = 55'000</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Schematische Darstellung der Übergangsregelung:

**Revision der HE 1999/2000:**

\[
70'000 - \frac{(30'000)}{2} = 55'000
\]

This table explains the transition with a numerical example, pointing out the blank years and extraordinary incomes and expenses (canton AI).
Salience: Pillar 3a Savings

No incentives to contribute to pillar 3a during blank years

Source: BFS, BSV

Intertemporal Labor Supply Substitution

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Common Macro Trends: Unemployment Rates

Intertemporal Labor Supply Substitution
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Common Macro Trends: Growth in GDP p.c.

The diagram illustrates the annual growth rate in GDP per capita for various years, from 1990 to 2004. The growth rate is shown for different tax holiday periods and countries, including Switzerland. The graph highlights the impact of tax holidays on GDP growth, indicating periods of tax holidays in 1997-98, 1998, 1999-00, 2000, and 2001-02.
Was Labor Demand Elastic?

- Tax holidays create incentive to increase labor supply

- If labor demand is not perfectly elastic: wage rate could fall
  → dampened effect on earnings
  → estimated Frisch elasticity too low

- BUT: Wage Structure Survey (LSE) shows:
  - If anything increasing wage rates
  - Small but positive response of hours worked
Wage Rate

Data Source: Wage Structure Survey (LSE)
Hours Worked

Data Source: Wage Structure Survey (LSE)
Hours Worked per Month: Married Women

Data Source: Wage Structure Survey (LSE)
Hours Worked per Month: Single Women

Data Source: Wage Structure Survey (LSE)
Hours Worked per Week (SLFS)
Married Women w/ Children, High-income Household

Tax holiday in...

Data Source: SLFS

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Event Study: Extensive Margin (Wage Earners)

Effect of tax holiday

Extensive margin
Employment Rate (SLFS)

Data source: SAKE

Intertemporal Labor Supply Substitution

Martínez, Saez, Siegenthaler
Employment Rate: Women

Data source: AHV-STATPOP
Employment Rate: Married Women
<table>
<thead>
<tr>
<th></th>
<th>(1) Jobs per employed</th>
<th>(2) Months employed per employed</th>
<th>(3) Self employed p.p. (in %)</th>
<th>(4) In-migrant p.p. (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blank year</td>
<td>0.0036</td>
<td>0.0099</td>
<td>-0.274</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>(0.0075)</td>
<td>(0.0167)</td>
<td>(0.177)</td>
<td>(0.077)</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blank year</td>
<td>0.0050</td>
<td>0.0117</td>
<td>-0.411</td>
<td>-0.020</td>
</tr>
<tr>
<td></td>
<td>(0.0090)</td>
<td>(0.0139)</td>
<td>(0.288)</td>
<td>(0.069)</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blank year</td>
<td>0.0022</td>
<td>0.0083</td>
<td>-0.146</td>
<td>-0.014</td>
</tr>
<tr>
<td></td>
<td>(0.0069)</td>
<td>(0.0253)</td>
<td>(0.116)</td>
<td>(0.084)</td>
</tr>
<tr>
<td><strong>Married women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blank year</td>
<td>0.0029</td>
<td>0.0018</td>
<td>-0.168</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td>(0.0051)</td>
<td>(0.0292)</td>
<td>(0.116)</td>
<td>(0.037)</td>
</tr>
</tbody>
</table>

| Observations             | 60                    | 60                              | 60                            | 60                          |
| Canton group FE          | Yes                   | Yes                             | Yes                           | Yes                         |
| Period FE                | Yes                   | Yes                             | Yes                           | Yes                         |
### Wage Earners: Individual-level IV Estimates

<table>
<thead>
<tr>
<th></th>
<th>Employee 0/1</th>
<th>Avg. wage earnings *</th>
<th>Employee 0/1</th>
<th>Avg. wage earnings *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Men</td>
<td>Women</td>
<td>Women</td>
</tr>
<tr>
<td><strong>Total sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st stage</td>
<td>0.115</td>
<td>0.248</td>
<td>0.107</td>
<td>0.239</td>
</tr>
<tr>
<td>Effect on $ln(1 - \tau_{it})$</td>
<td>(0.002)</td>
<td>(0.004)</td>
<td>(0.002)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>2nd stage</td>
<td>-0.006</td>
<td>3,397</td>
<td>-0.015</td>
<td>369</td>
</tr>
<tr>
<td>$ln(1 - \tau_{it})$</td>
<td>(0.005)</td>
<td>(376)</td>
<td>(0.006)</td>
<td>(235)</td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td><strong>-0.01</strong> (0.006)</td>
<td><strong>0.04</strong> (0.004)</td>
<td><strong>-0.02</strong> (0.008)</td>
<td><strong>0.01</strong> (0.005)</td>
</tr>
<tr>
<td>Observations</td>
<td>11,838,260</td>
<td>9,952,854</td>
<td>12,143,005</td>
<td>8,687,931</td>
</tr>
<tr>
<td><strong>Married w/ children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td>0.00 (0.005)</td>
<td><strong>0.04</strong> (0.005)</td>
<td>0.00 (0.015)</td>
<td><strong>0.04</strong> (0.008)</td>
</tr>
<tr>
<td><strong>Married no children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td><strong>-0.01</strong> (0.004)</td>
<td><strong>0.03</strong> (0.004)</td>
<td><strong>-0.02</strong> (0.005)</td>
<td><strong>0.01</strong> (0.003)</td>
</tr>
<tr>
<td><strong>Tertiary edu.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frisch elasticity $\eta^F$</td>
<td><strong>-0.01</strong> (0.007)</td>
<td><strong>0.04</strong> (0.005)</td>
<td><strong>-0.03</strong> (0.010)</td>
<td><strong>0.01</strong> (0.006)</td>
</tr>
</tbody>
</table>

* In CHF
### IV-Regressions by Pre-Holiday Earnings (Wage Earners)

**Macro estimates**

<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Frisch elasticity $\eta^F$</th>
<th>Employee 0/1 Earnings Men</th>
<th>Average Wage Earnings Men</th>
<th>Employee 0/1 Earnings Women</th>
<th>Average Wage Earnings Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–25k CHF</td>
<td>0.00 (0.024)</td>
<td>0.01 (0.014)</td>
<td>-0.02 (0.011)</td>
<td>-0.01 (0.013)</td>
<td></td>
</tr>
<tr>
<td>25–50k CHF</td>
<td>0.00 (0.007)</td>
<td><strong>0.03</strong> (0.004)</td>
<td>-0.02 (0.006)</td>
<td>0.01 (0.004)</td>
<td></td>
</tr>
<tr>
<td>50–100k CHF</td>
<td>-0.01 (0.003)</td>
<td><strong>0.03</strong> (0.003)</td>
<td>-0.01 (0.007)</td>
<td>0.00 (0.003)</td>
<td></td>
</tr>
<tr>
<td>100–200k CHF</td>
<td>0.00 (0.006)</td>
<td><strong>0.04</strong> (0.004)</td>
<td>-0.01 (0.013)</td>
<td><strong>0.02</strong> (0.009)</td>
<td></td>
</tr>
<tr>
<td>More than 200k</td>
<td>0.00 (0.007)</td>
<td><strong>0.07</strong> (0.013)</td>
<td>-0.07 (0.060)</td>
<td><strong>0.10</strong> (0.042)</td>
<td></td>
</tr>
</tbody>
</table>

*Intertemporal Labor Supply Substitution*  
Martínez, Saez, Siegenthaler
Event Study: Self-Employment Income by Gender

Intertemporal Labor Supply Substitution  
Martínez, Saez, Siegenthaler

57/29
High vs. Low Tax Municipalities: High Wage Earners

Intertemporal Labor Supply Substitution Martínez, Saez, Siegenthaler 59/29
High vs. Low Tax Municipalities: High Self-Empl Earners

![Graph showing the average earnings of self-employed individuals in municipalities with low, medium, and high taxes from 1995 to 2005. The graph includes a cantonal tax holiday in 2000.]

Intertemporal Labor Supply Substitution
Martínez, Saez, Siegenthaler
Effect on Male Wage Earners by Municipal Tax Burden

- Conclusion

Baseline + interactions with tax rates
Canton-group period FE + interactions with tax rates
Average Wage Earnings: High-Income Employees

*High income*: avg. income in 1994-1996 > 200,000 CHF/year

Data source: AHV-STATPOP
Bonus-Incidence: Male Employees in the Private Sector

Fraction with bonus above 5K CHF

Data Source: Wage Structure Survey (LSE)
Bonus Incidence: Insurance Industry

Fraction with bonus above 20K CHF

Data Source: Wage Structure Survey (LSE)
Anecdotal Evidence:
Doctors Shift Billing of Treatment Costs

**Tages-Anzeiger**

24. März 1999

**Raffinierte Ärzte**


Genauere Abklärungen hätten dann ergeben, dass es sich um Kantone handle, die gegenwärtig auf die einjährige Steuerveranlagung umstellen. Das Jahr 1999 fällt daher dort in die **Bemessungslücke**. Schlaue Ärzte verrechneten deshalb letzjährige Leistungen erst in diesem Jahr, um das so erzielte Einkommen nicht versteuern zu müssen. So viel Raffinesse haben ihnen die Krankenkassen offenbar nicht zugetraut.


