Who Payed the 75% Tax on Millionaires? Optimization of Salary Incomes and Incidence in France

Labour and Public Economics (internal seminar)

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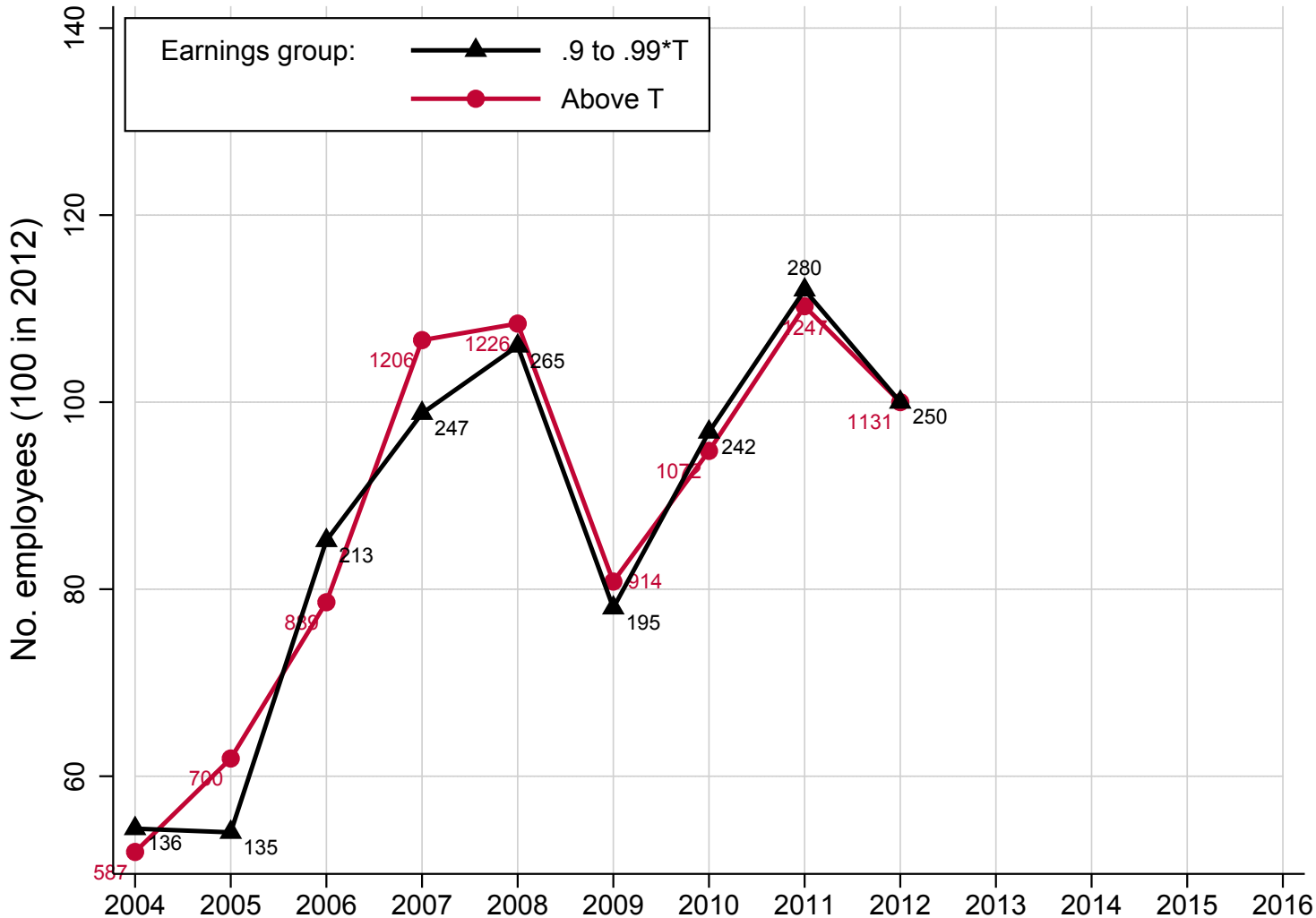
- Research question:
  - What is the incidence of this tax?
  - How did the 75% tax on wages impact the (economic or optimization) behaviour of individuals and/or firms?

Figure 1: Number of employees in different earnings groups



Source: *Échantillons lourds des déclarations de revenus*

T = €1m of annual gross wage = €1.309m of annual labour cost

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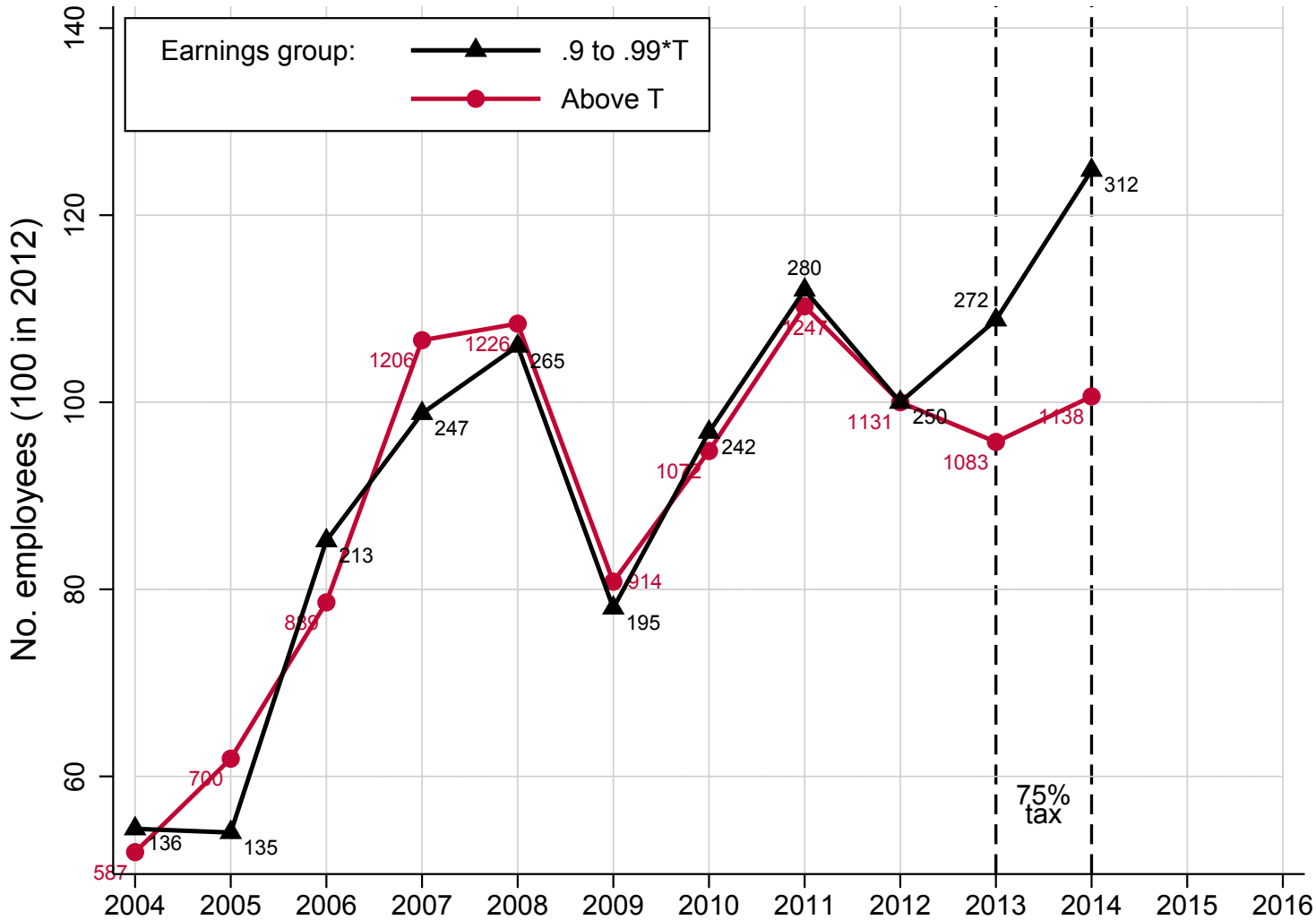

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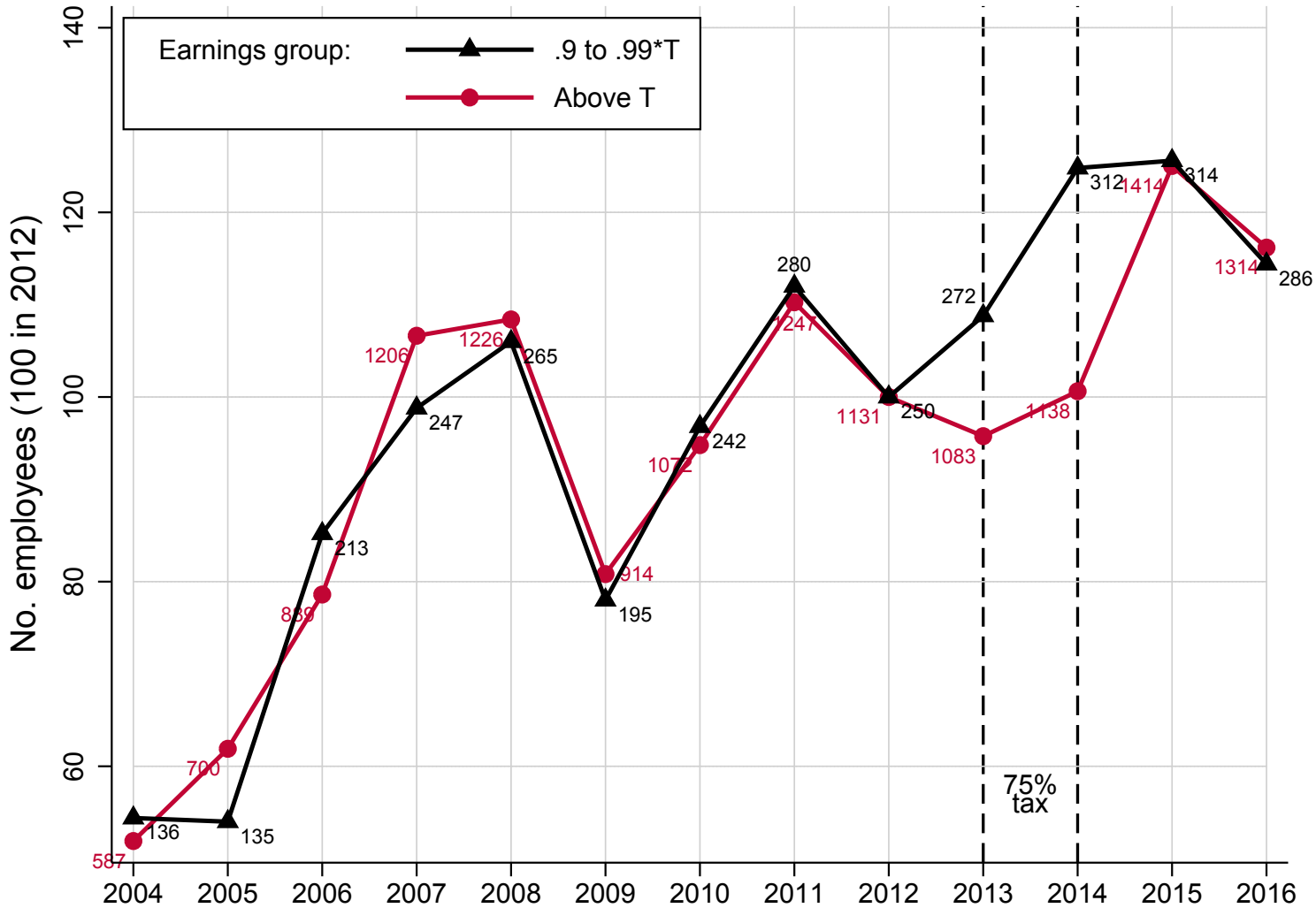

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Related literature

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No study:

- on a tax on payroll at the top
- on the top 0.01% of the labour income distribution

What I do

- Use the French 75% tax on millionaires:
  - Tax on payroll, born by employers
  - Large change in marginal tax rate: **+11 p.p.t** .
- Use administrative payroll and income tax datasets
- Focuse on the taxation of the top 0.01% wage earners in the context of the firm

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  - Large change in marginal tax rate: **+11 p.p.t** .
- Use administrative payroll and income tax datasets
- Focuse on the taxation of the top 0.01% wage earners in the context of the firm
- Main findings so far:
  - Short-term incidence: 80% of the tax paid by employers
  - No evidence of income-shifhting
  - Time-shifting:
    - No evidence of response in 2012-14
    - Weak evidence in 2015
  - Firm-level effect: employment and net income decreased, potential optimization

Outline

1. Institutional Context
2. Data
3. Individual Response
4. Firm-level response
5. Conclusion

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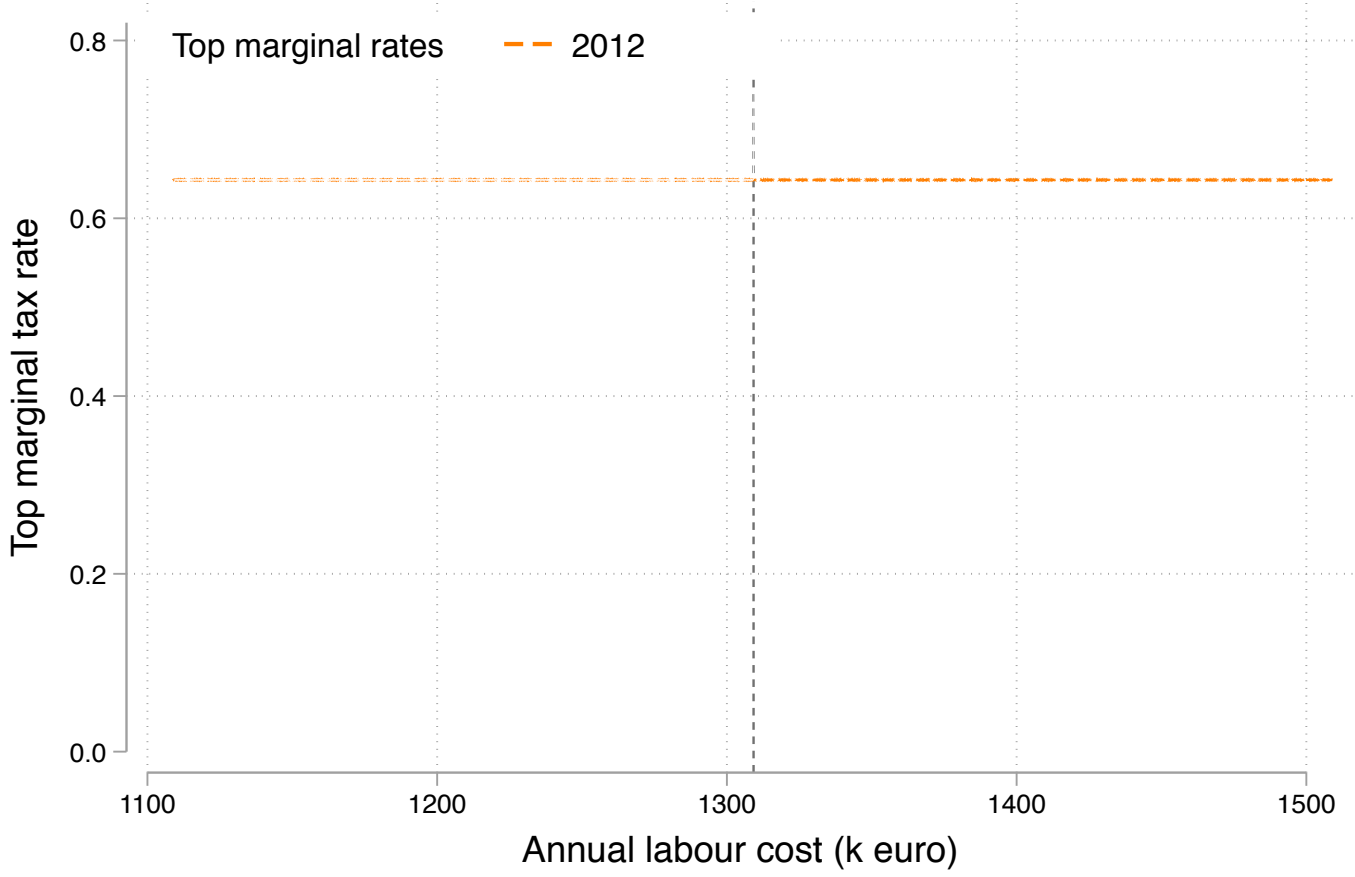
  - On 2013 and 2014 incomes ONLY
  - **Tax base**: annual gross wage, including incentive bonus and profit-sharing schemes
  - Paid by employers and **caped** at 5% of the firm profit
  - **Tax schedule**: new marginal tax rate of **50%** on gross income above €1m of gross income

Figure 2: Introduction of the 75% tax



Source: Taxipp 0.3

▸ Decomposition (average) ▸ Decomposition (marginal) ▸ Labour tax rates

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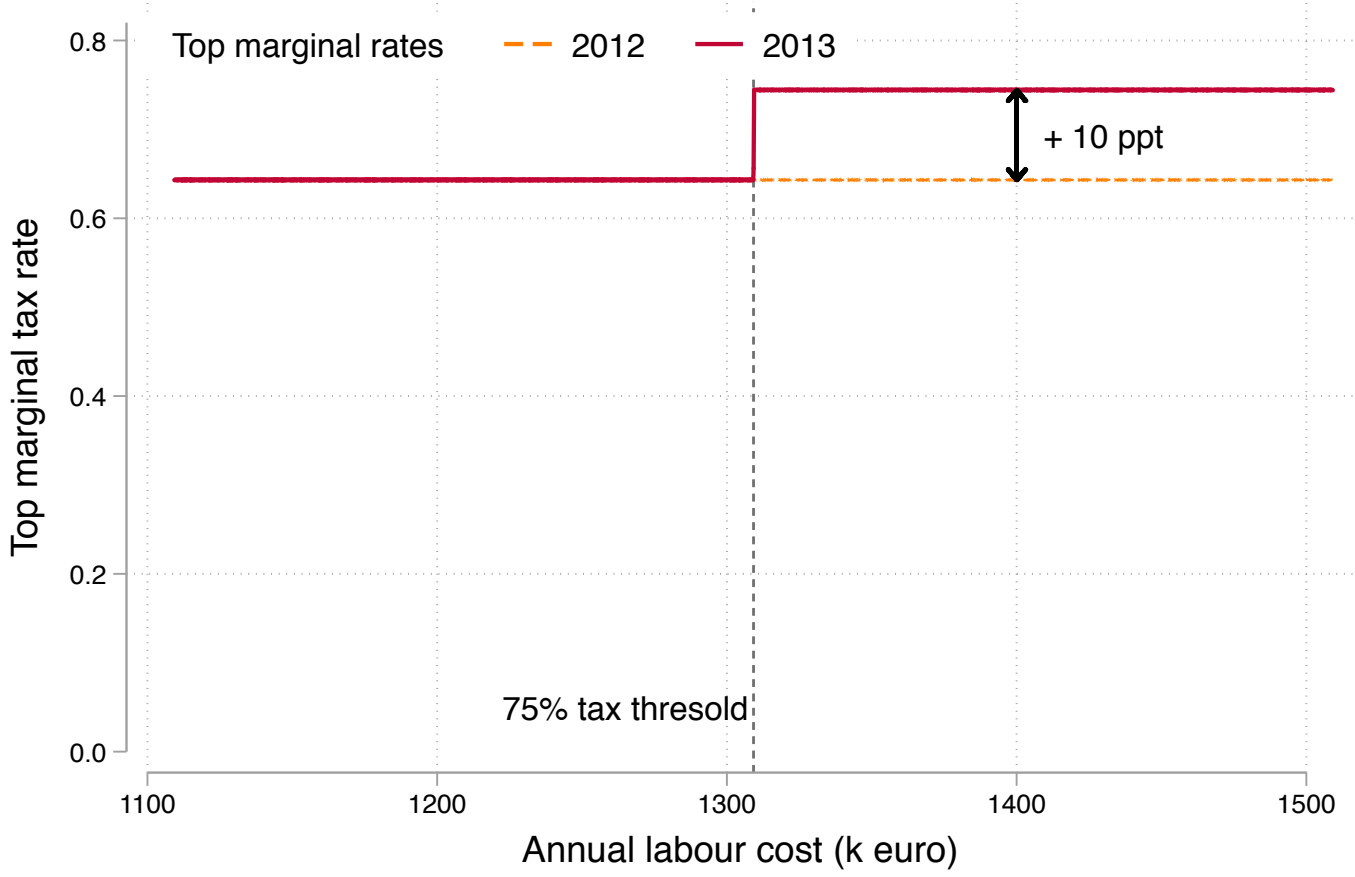

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  - Exhaustive linked employer-employee data (*DADS Postes*)
  - 2-years individual panel: T & $T-1$
  - Firm identifier

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- Firm tax data (FARE)
  - 2009 – 2014
  - Accounting information on the firm
  - Firm identifier

Data for the Individual-level Effects

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1. Selection: maximum wage for each individual
2. Year-to-year matching on:
   - Firm identifier
   - Job information: wage, hours, days, type of occupation
   - Employee information: month, year and county of birth, sex
   - Exact matching except for the wage (difference of €10 max)
3. Aggregation and individual panel identifier
4. Selection on wage earners with at least a gross wage $>$ 500 000€

Descriptive Statistics

	2010	2011	2012	2013	2014
Private sector	94%	94%	94%	93%	92%
Labour cost	617,98	649,91	654,22	699,56	750,47
Executives	71%	65%	65%	65%	61%
N	12968	12607	11590	10786	9847

Source: DADS Postes

Note: Labour cost is in k€2013

Data for the Firm-level Effects

1. Selection of firms from the individual database
2. Panel dataset based on those firm based on the merge of
    - Payroll tax data at the firm-level
    - Firm-tax data

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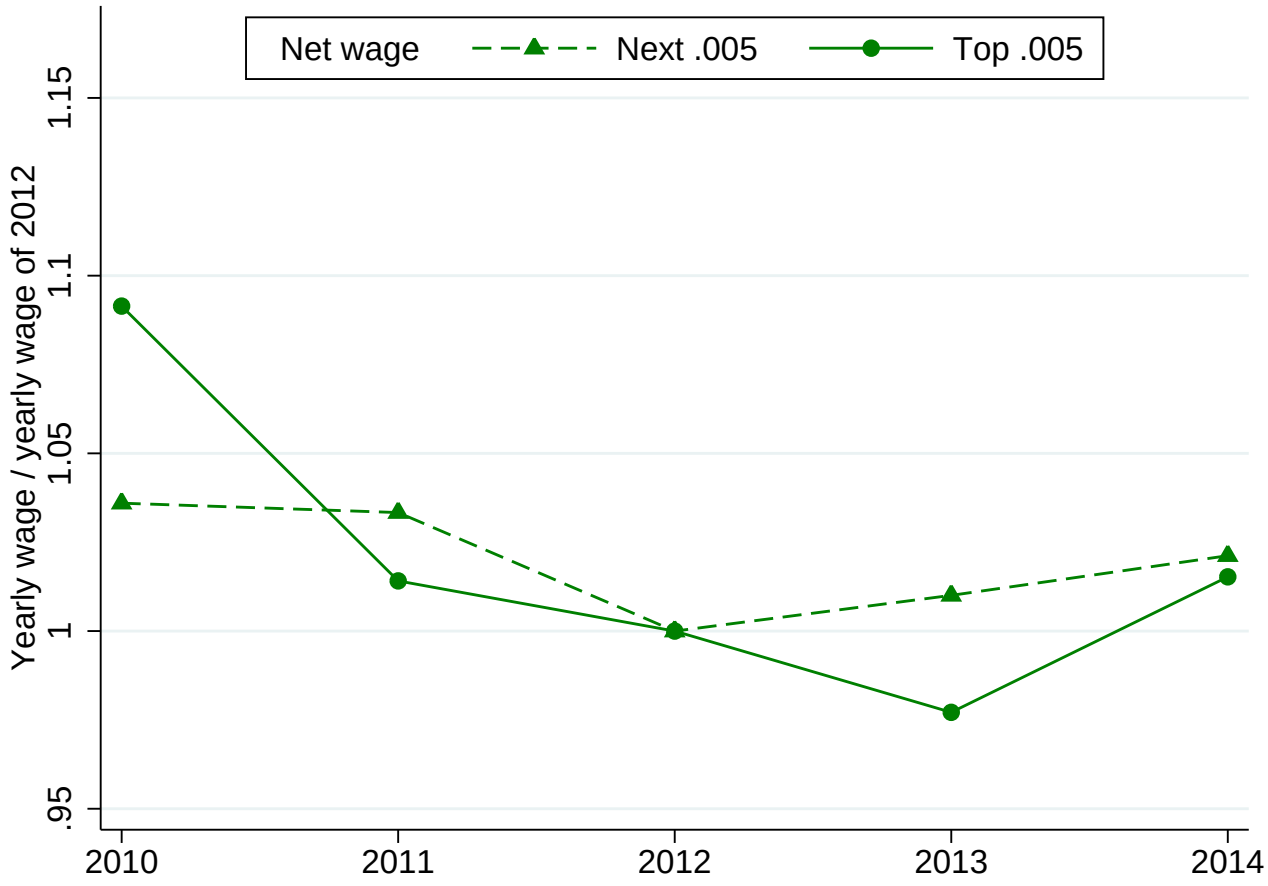
Individual-level Analysis

1. Incidence
    - Differential evolution of labour cost and disposable labour income for top percentiles
2. Optimization:
    - Income-shifting
        - On other tax bases
        - Labour income from a different firm
    - Time-shifting

Impact on Wages



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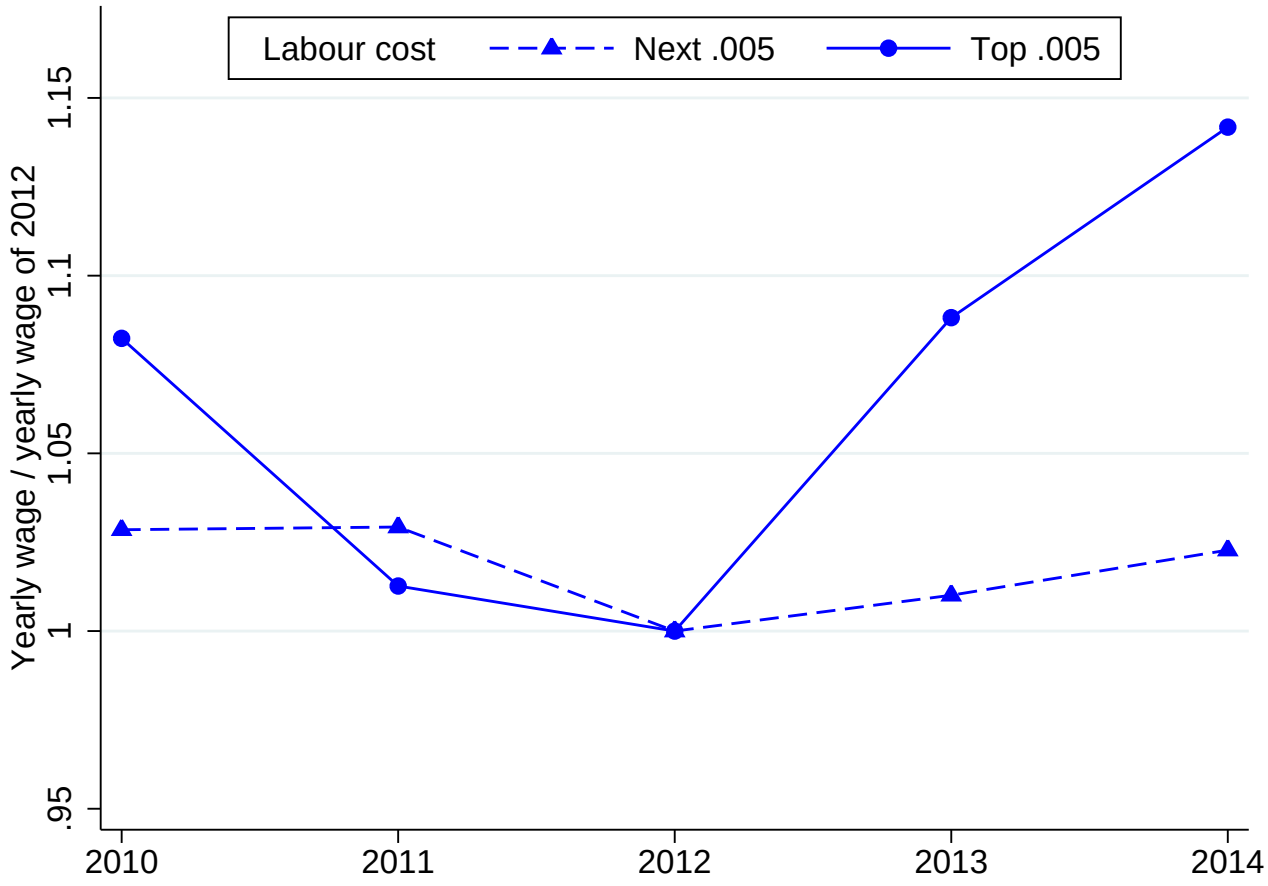

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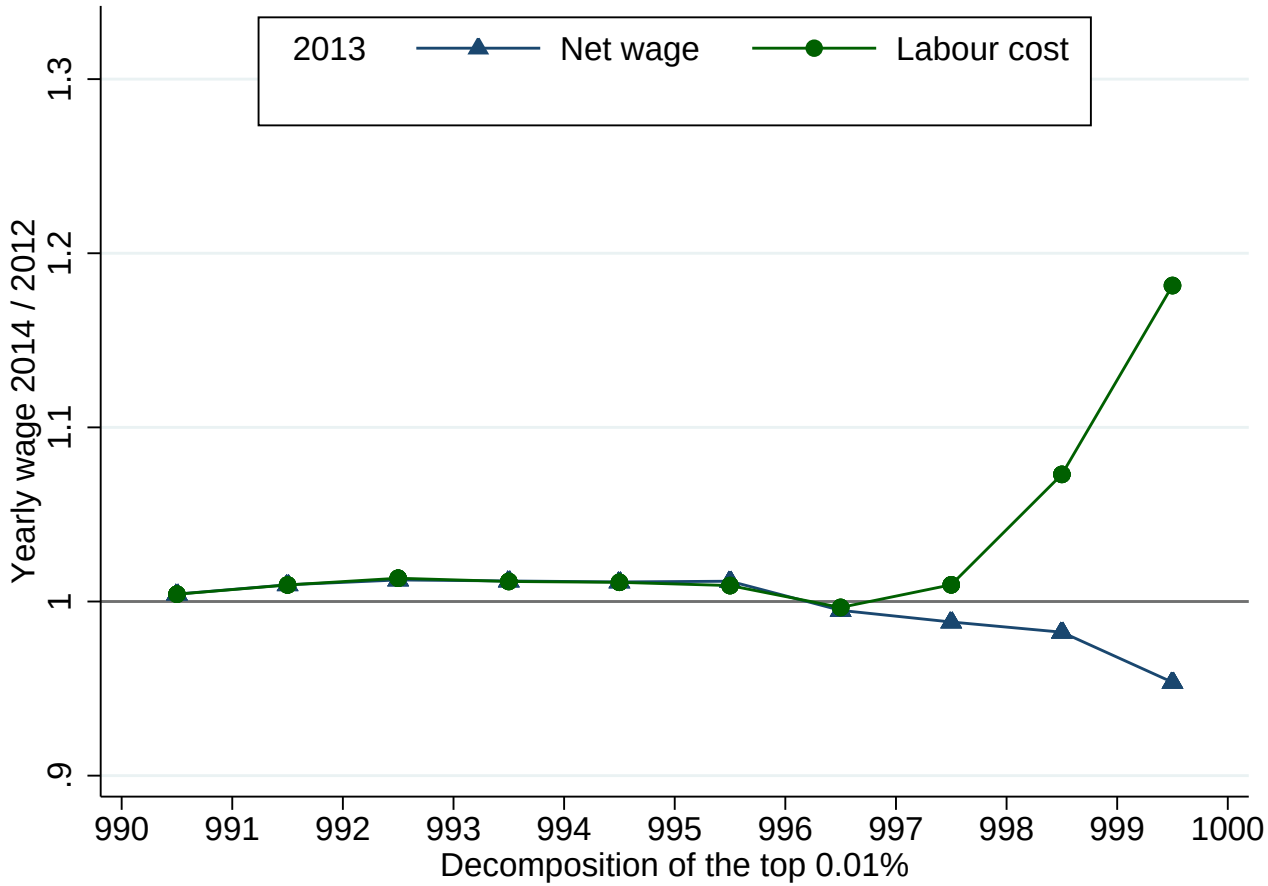
Impact on Wages, by percentile$= p$, $\frac{wages_{p,t}}{wages_{p,2012}}$



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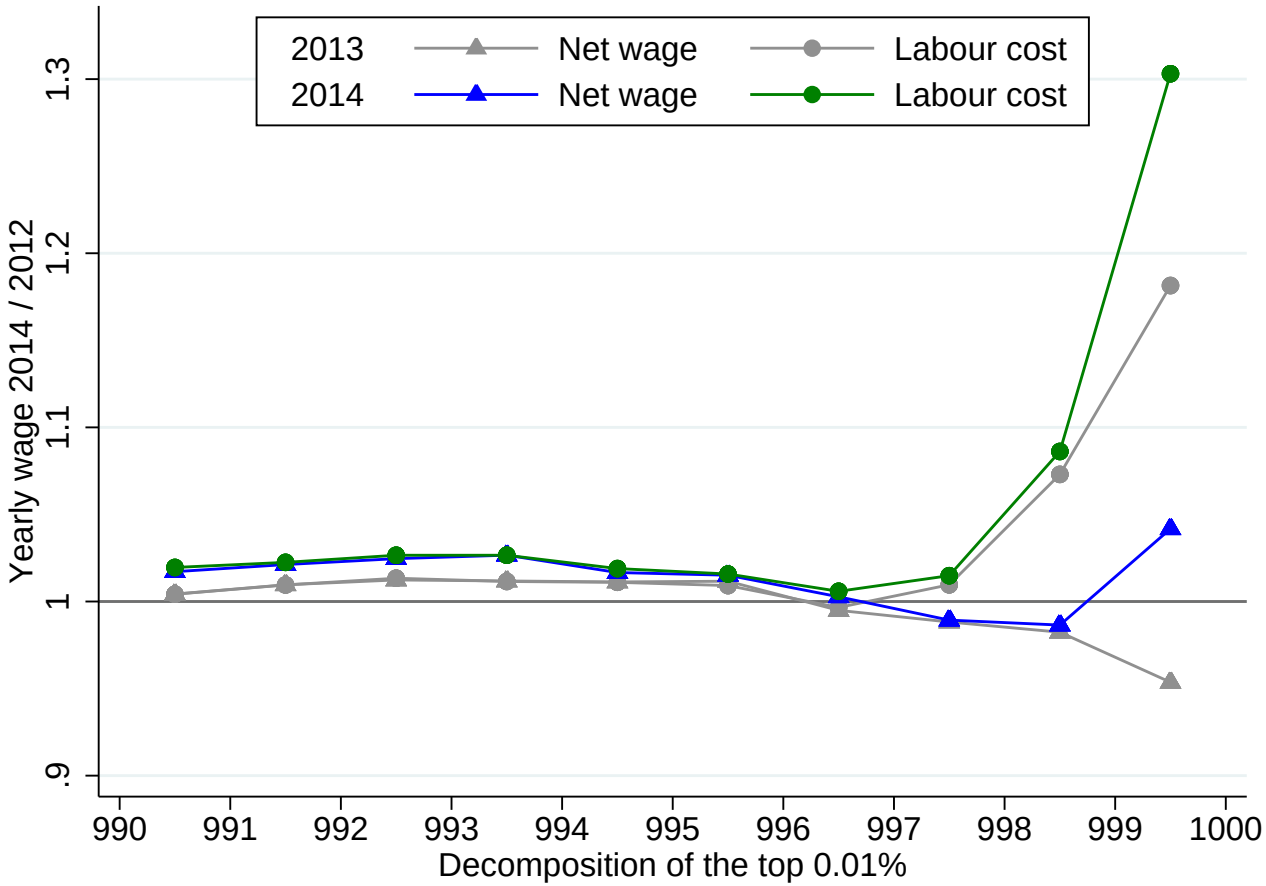

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Impact on wages - DiD

$$wages_{p,t} = \alpha_p + \beta_t + \gamma \cdot \mathbb{1}(p \geq p_{taxed}) \cdot \mathbb{1}(t = 2013, 2014) + \epsilon_{pt}$$

where

- $p = 990 - 991, ..., 999 - 1000$ denotes 10 percentiles categories,
- $t = 2010, ..., 2014$
- $wages_{p,t}$ = net wage or labour cost annual average income
- $\mathbb{1}(p \geq p_{taxed}) = 1$ if p is subject to the 75% tax,
- $\mathbb{1}(t = 2013, 2014) = 1$ for reform years,
- ϵ_{pt} is the error term

Impact on wages - DiD

	(1)	(2)	
	2013-14	2013	2014
Net wage	-52.72	-78.58	-26.85
	(28.6)	(36.68)	(36.68)
Labour cost	190.64	137.53	243.74
	(70.9)	(88.8)	(88.8)
Pass-through	0.78	0.64	0.90
	(0.02)	(0.05)	(0.01)
N	50	50	

Sources: DADS POSTES 20010-14 and TAXIPP 0.3

Note: the pass-through is the share of the tax paid by employers. Standard errors of the pass-throug are estimated by the delta method.

Optimization Response

- Income-shifting
  - Reform on dividend taxation at the same time
- Time-shifting
  - Very high incentives
  - Tax enacted in late 2013: no retiming to 2012 incomes
- Overall elasticity of response: 0.35** (using the panel dataset at the individual level)

▸ Firm-level response

Conceptual Framework

Optimization problem $u(c, z)$

$$\text{s.t. } c = z - T(z) = (1 - \tau).z + y$$

Solution $z = z(1 - \tau, y)$

Specification $\log(z_{it}) = \alpha + \epsilon . \log(1 - \tau_{it}) + f . \log(y_{it}) + u_{it}$

Where

- $y = \tau.z - T(z)$: virtual income
- ϵ: **uncompensate elasticity** of the reported income z with respect to the marginal net-of-tax rate $1 - \tau$
- f: income elasticity

Estimation Strategy

- Assumption: **no income effects** ($f = 0$)
- First-difference specification:

$$\Delta \log(z_{it}) = \epsilon.\Delta \log(1 - \tau_{it}) + \alpha_t + u_{it}$$

- α_t : year fixed-effects

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- 2 potential problems:
  - **Endogeneity of the tax rate** τ: function of the taxable income, which also determines z.
  - **Mean-reversion** (panel)
    - Transitory income process
    - Major issue for such high wages

Instrumentation Strategy

- Classical instruments
  - post-reform X treatment dummy
  - change in the predicted net-of-tax rate $1 - \tau_{it}^{p}$= value of $1 - \tau_{it}$ if income is z_{it-1}:

$$X_{it}^{0} = \log\left(\frac{1 - T_t(z_{t-1})}{1 - T_{t-1}(z_{t-2})}\right)$$

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- Conditions for an instrument to be valid:
  - **Existence** of the first stage
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- New instruments (Weber 2014):

$$X_{it}^{k} = \log\left(\frac{1-T_t(z_{t-1-k})}{1-T_{t-1}(z_{t-2-k})}\right)$$

Panel Estimates: Comparing 2012 and 2013 Only

	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta(1-\tau_t)$	2.48***	2.31***	2.45***	1.98***	0.46**	0.35**
	(0.33)	(0.34)	(0.32)	(0.28)	(0.23)	(0.21)
Instruments	$z_{12} > T$	$z_{09-12} > T$	0 lag	0, 2 lags	1 lag	1, 2 lags
Observations	6907	6907	6907	6907	6907	6907
Individuals	6907	6907	6907	6907	6907	6907
First stage F-stat	871	549	876	609	592	418

Table 1: Elasticity Estimates

Notes: two-years differences estimated by 2SLS. Heteroskedasticity-robust standards errors clustered at the individual level in parentheses, $*p < .05$, $**p < .01$, $***p < .001$.
Sources: DADS POSTES and FARE 2009-2014
$T = 1\ 309$k€ is the top bracket threshold

Panel Estimates: Using all Year-to-year Changes

	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta(1-\tau_t)$	3.26***	3.00***	14.61***	2.72**	0.77*	0.47
	(0.47)	(0.49)	(3.42)	(0.56)	(0.41)	(0.29)
Instruments	$z_{12} > T$	$z_{09-12} > T$	0 lag	0, 2 lags	1 lag	1, 2 lags
Observations	13814	13814	13814	13814	13814	13814
Individuals	6907	6907	6907	6907	6907	6907
First stage F-stat	583	439	29	86	205	206

Table 2: Elasticity Estimates

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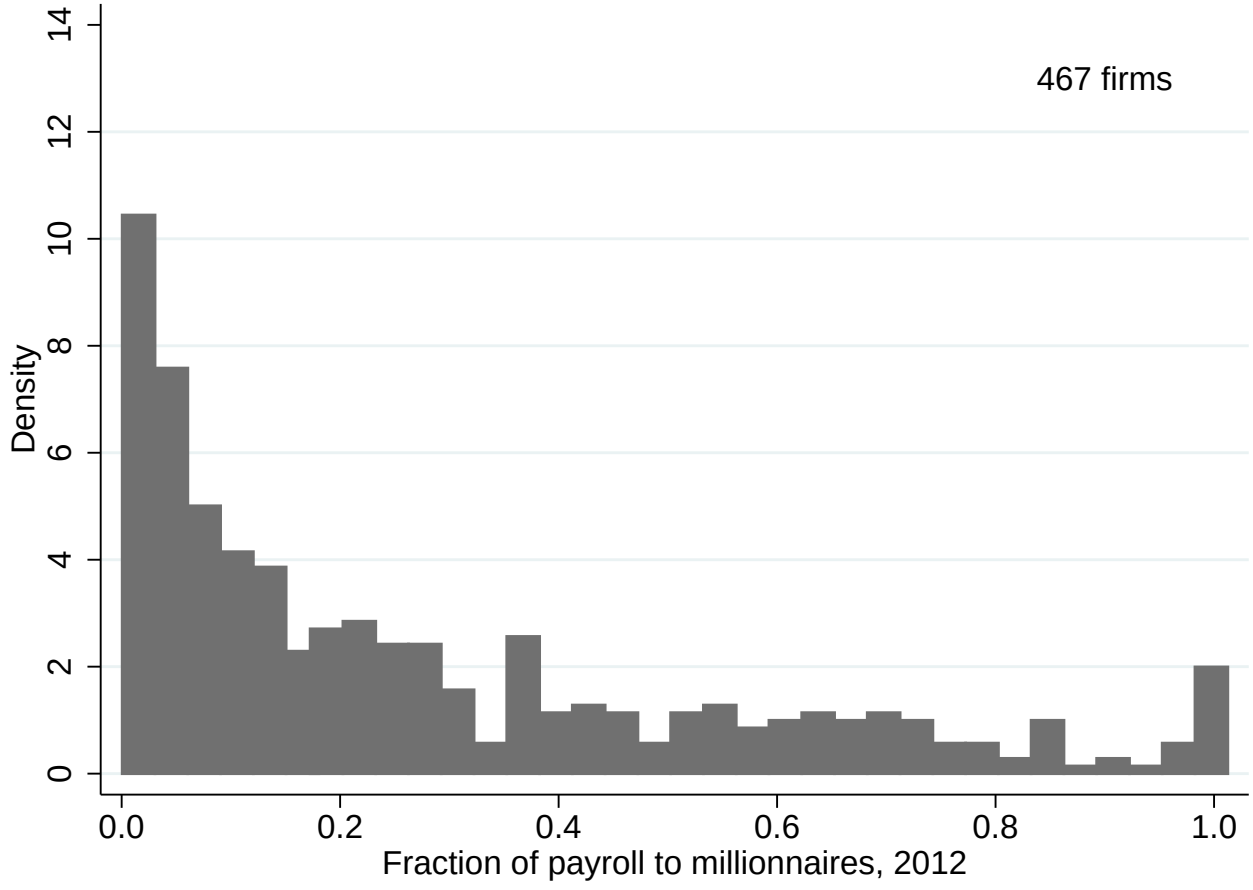
Channels of response at the firm-level

Potential consequence of an increase in the labour tax rate:

- Decrease in net income of the firm
- Decrease in wage and/or employment
- Shift toward:
  - Higher investment
  - Higher dividends

Payroll Share Treated $= \frac{\textbf{Treated wage bill}_{f,2012}}{\textbf{Total wage bill}_{f,2012}}$



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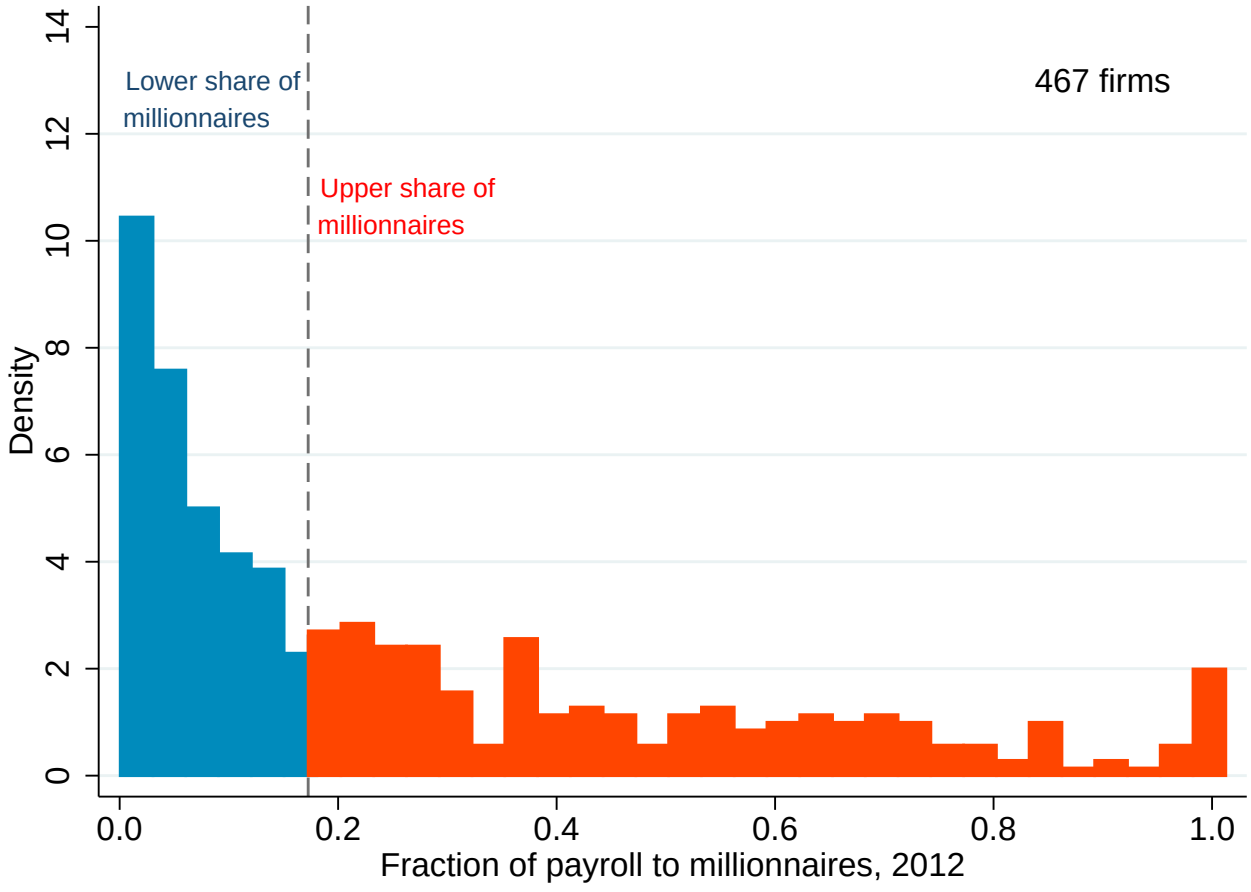

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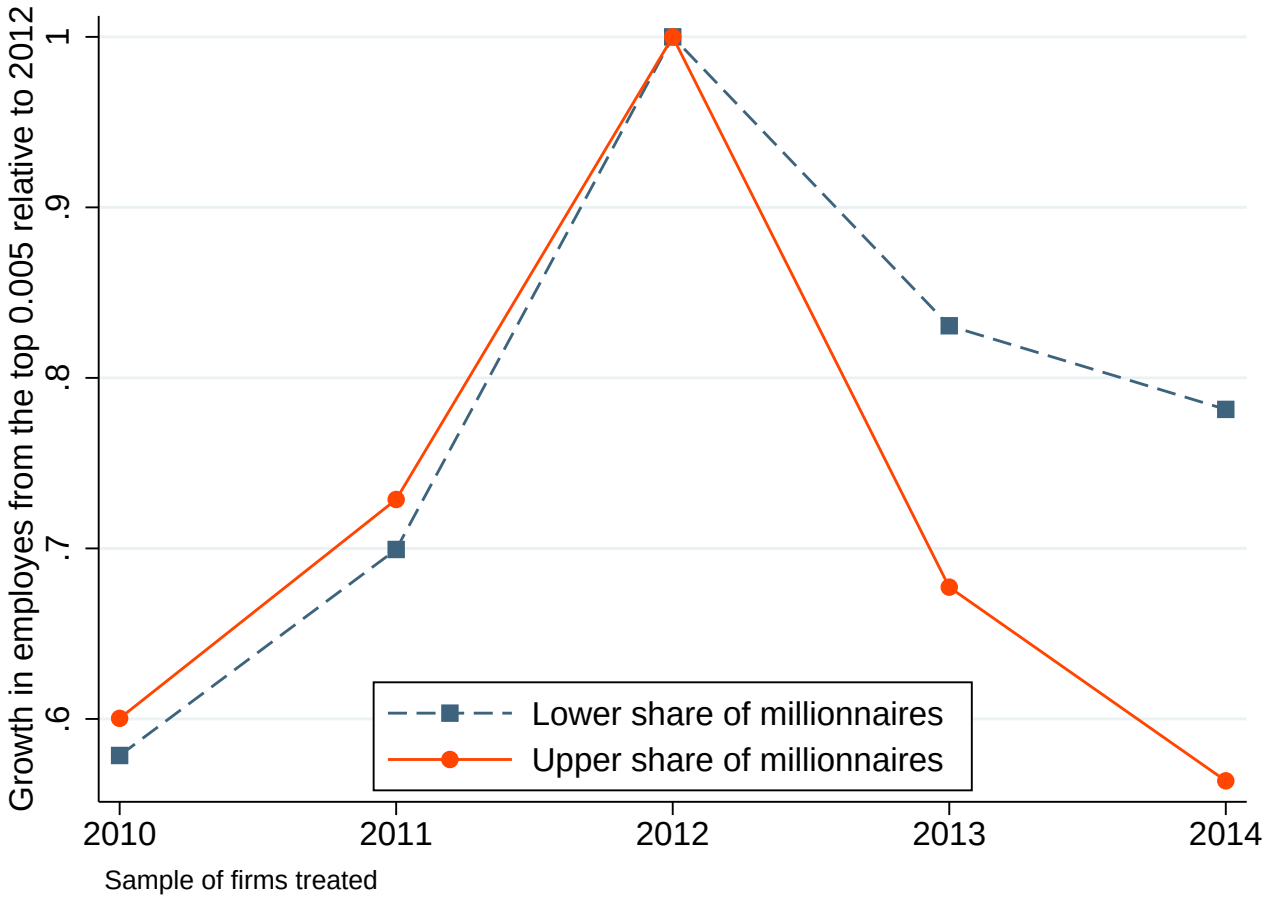
Descriptive Statistics of Firms, 2012

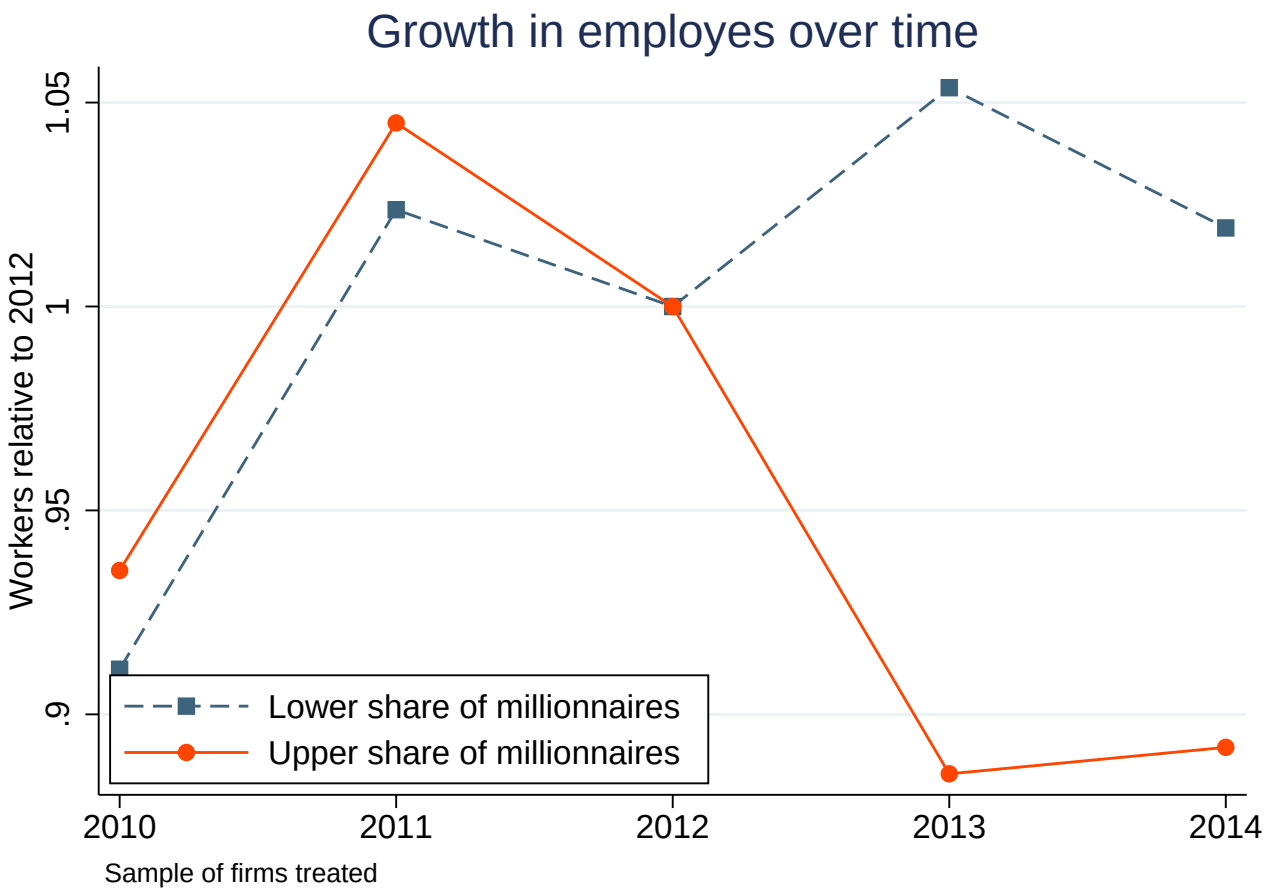
	Observations	Lower share	Upper share
Nb of employees (full time equivalent)	233	2039,9	45,7
Nb of employees in the top 0,005%	233	2,8	3,0
Nb of millionnaires	233	1,8	2,5
Net wage by employee (k€2013)	233	68,6	389,2
Treated share of payroll	233	0,1	0,5
Profit	193	733409	35261
Net income	193	94647	66340
Dividends	193	103459	87214
Cash available	193	78434	76984

(avg) Payroll Share of Top Incomes, by 2012 groups



Source: DADS POSTES 2010-2014

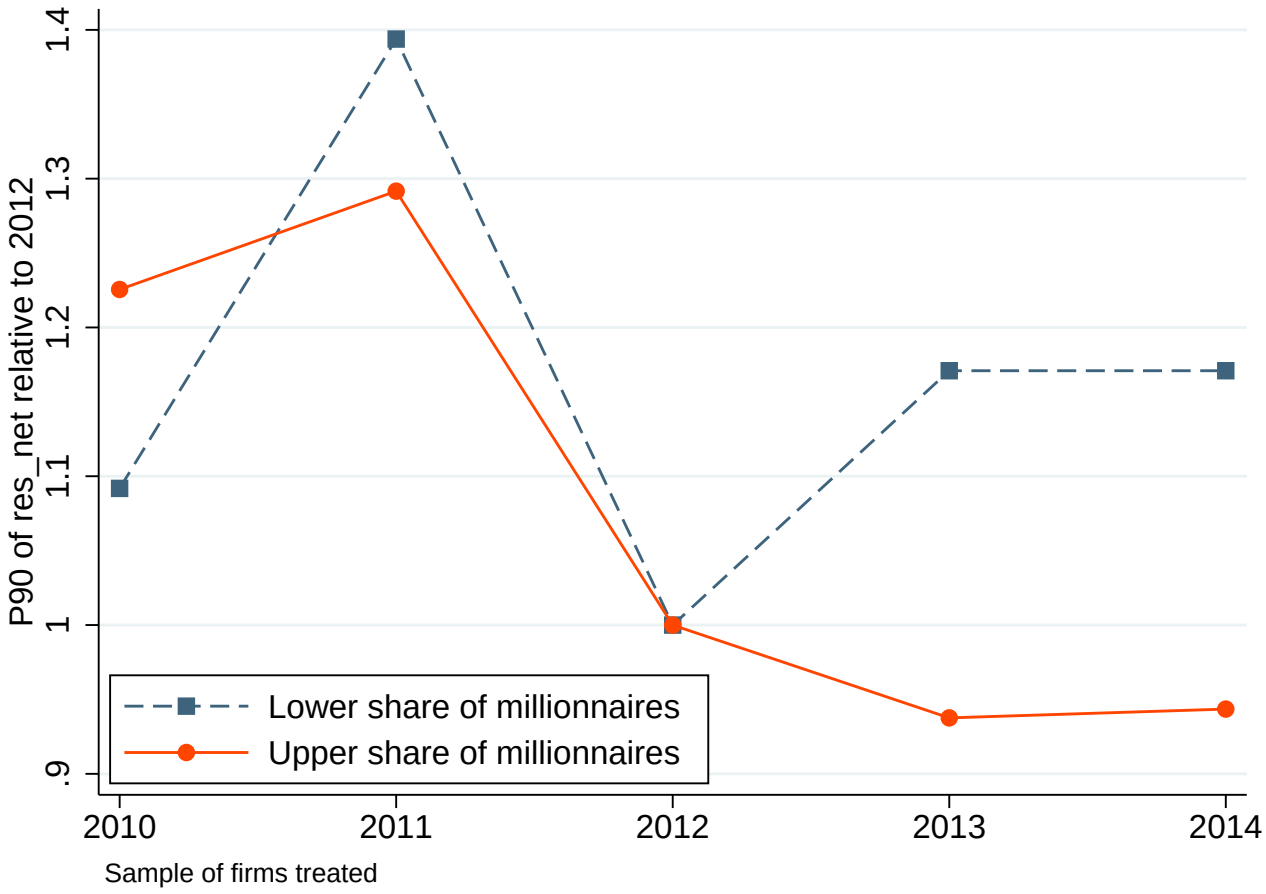
(median) Firm-level Employment, by 2012 Groups



Source: DADS POSTES 2010-2014

Note: the employment is measured by the sum of full-time equivalent workers

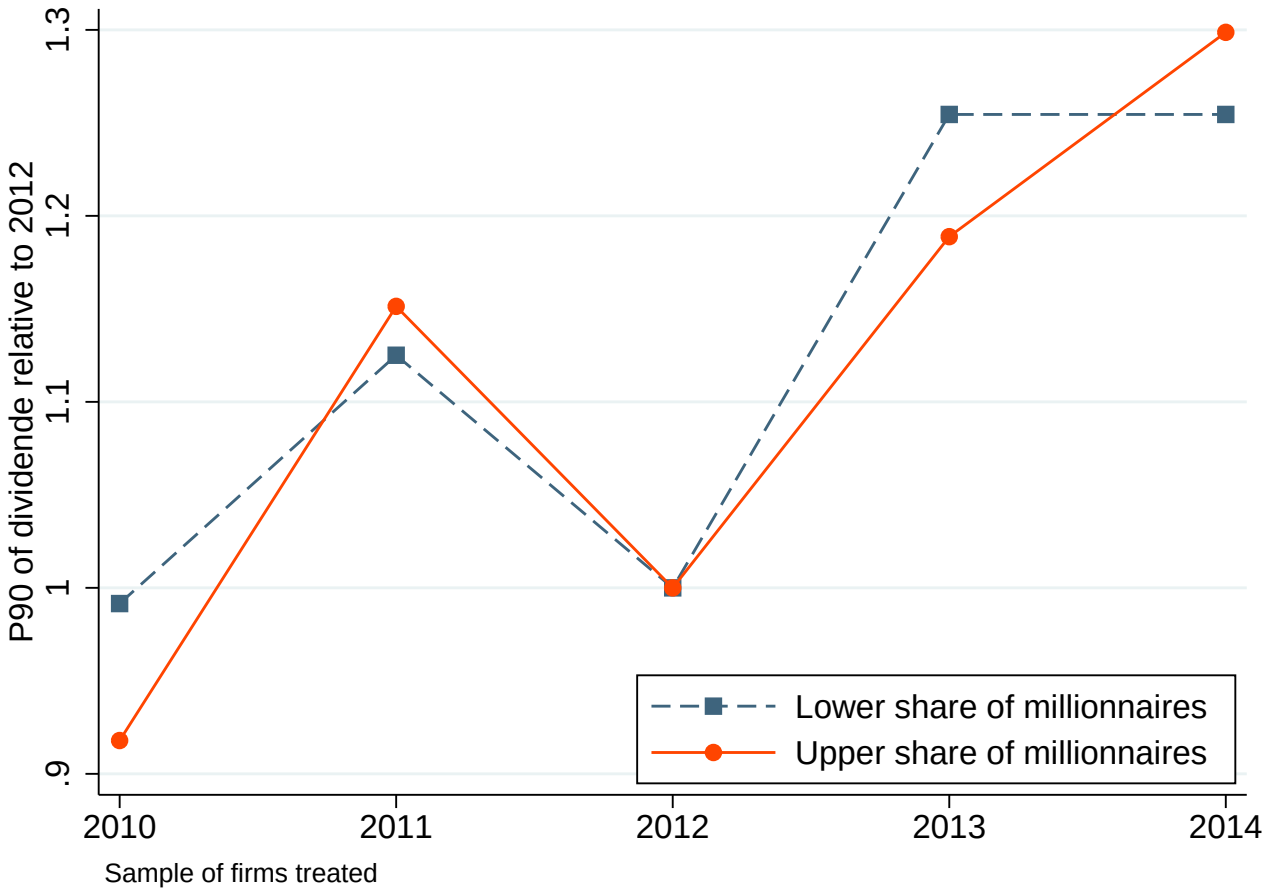
(P90) Net Income, by 2012 Groups



Source: DADS POSTES 2010-2014

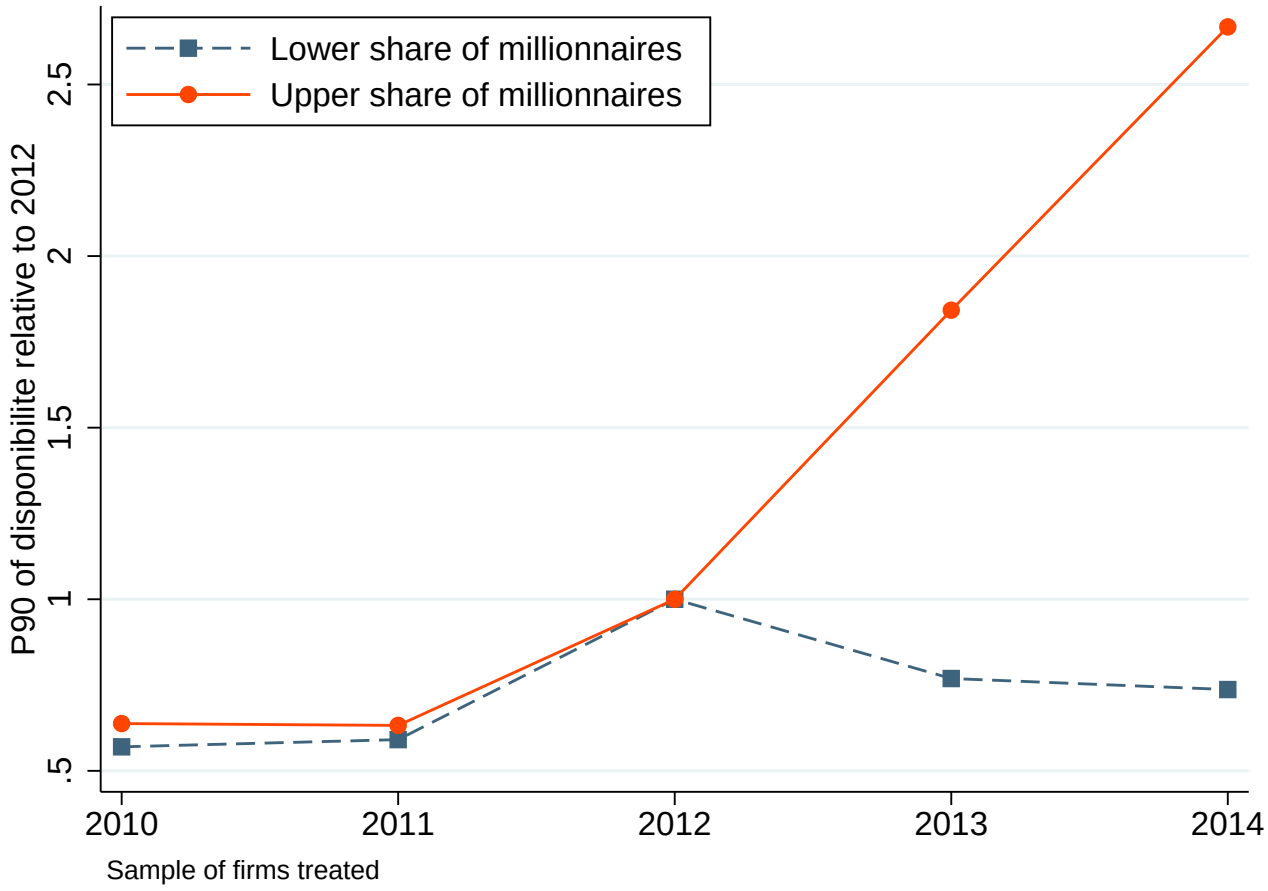
Note: net income = revenues − costs

(P90) Dividends, by 2012 Groups



Source: DADS POSTES 2010-2014

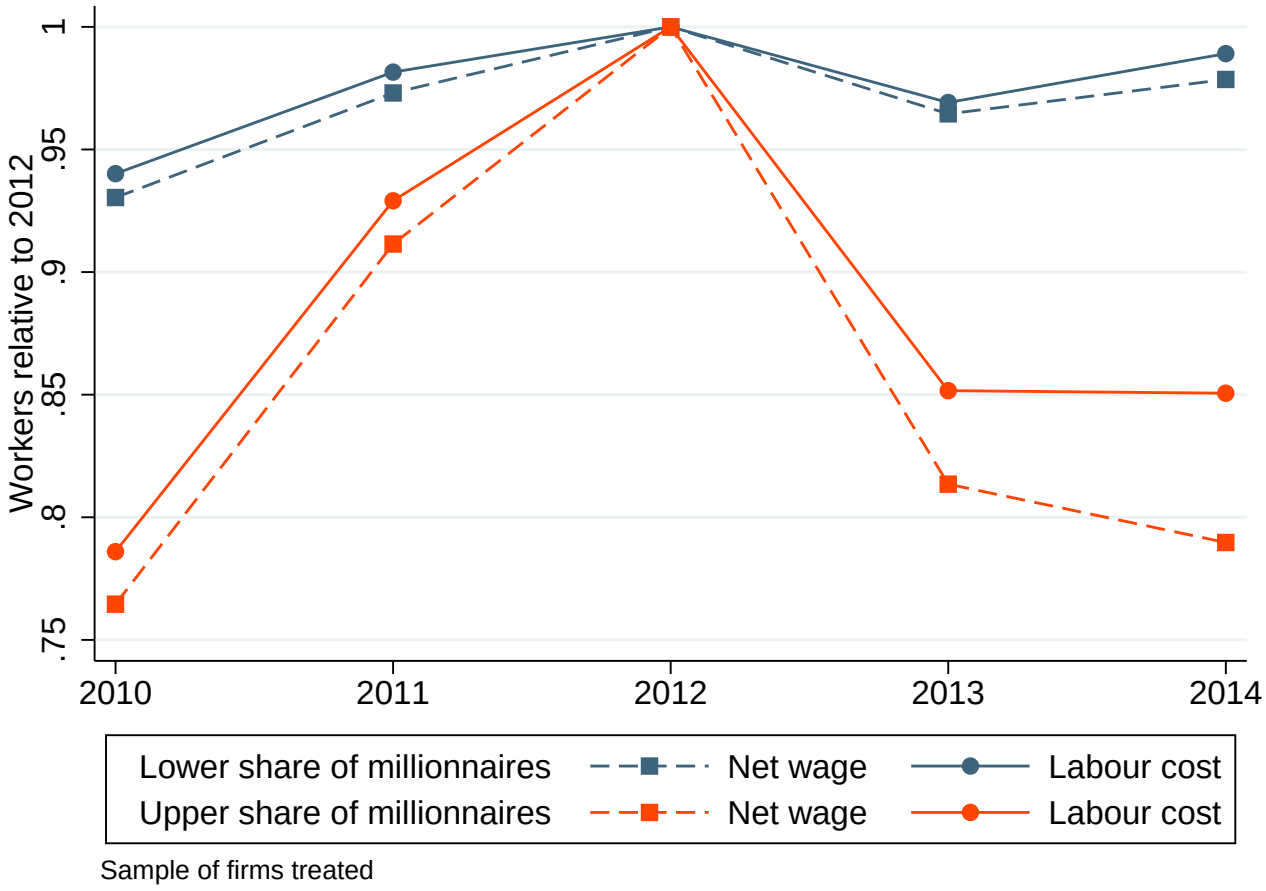
(P90) Cash available, by 2012 Groups



Source: DADS POSTES 2010-2014

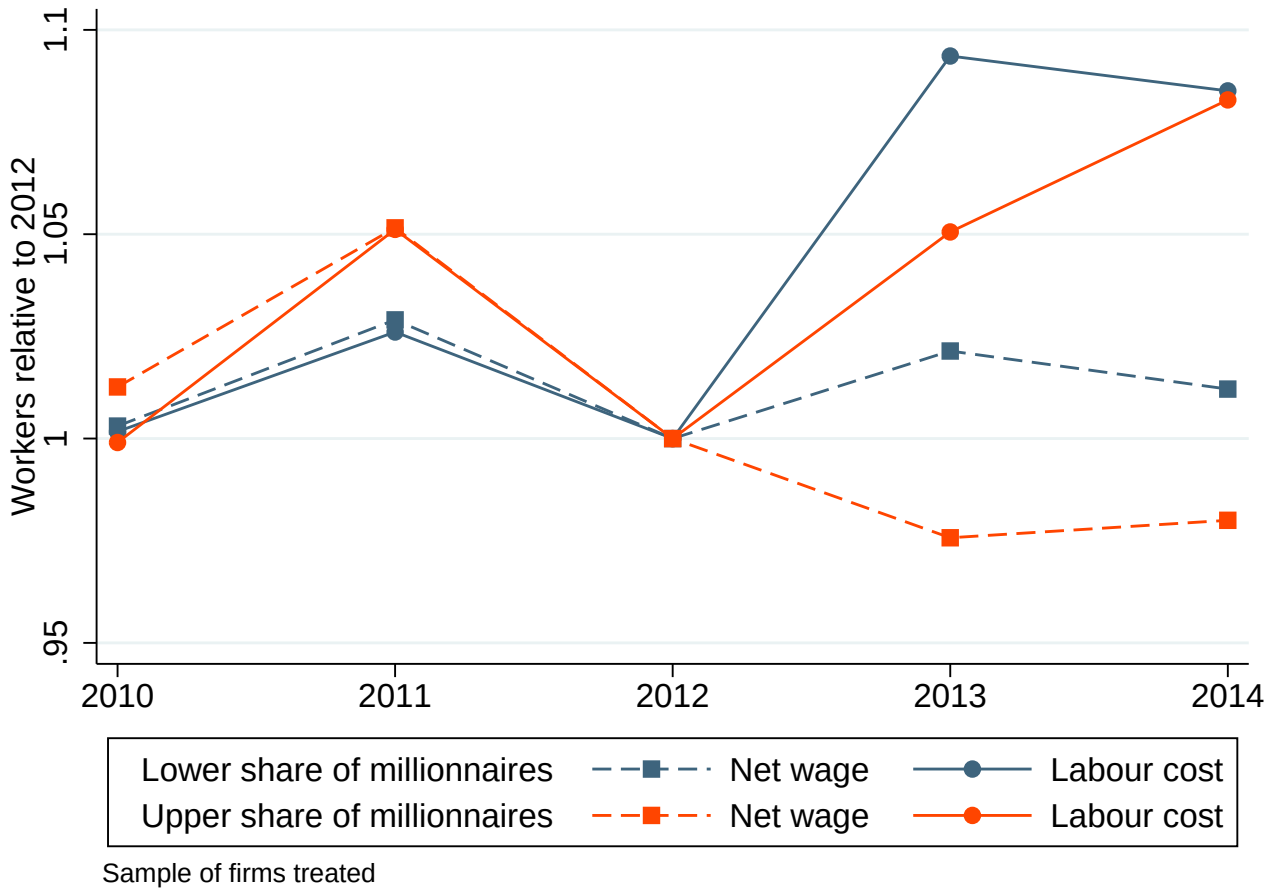
Note: "Cash available" denotes banking assets hold by the firm

(median) Average Wages by worker



Source: DADS POSTES 2010-2014

(median) Average Wages by Worker from the Top 0.005%



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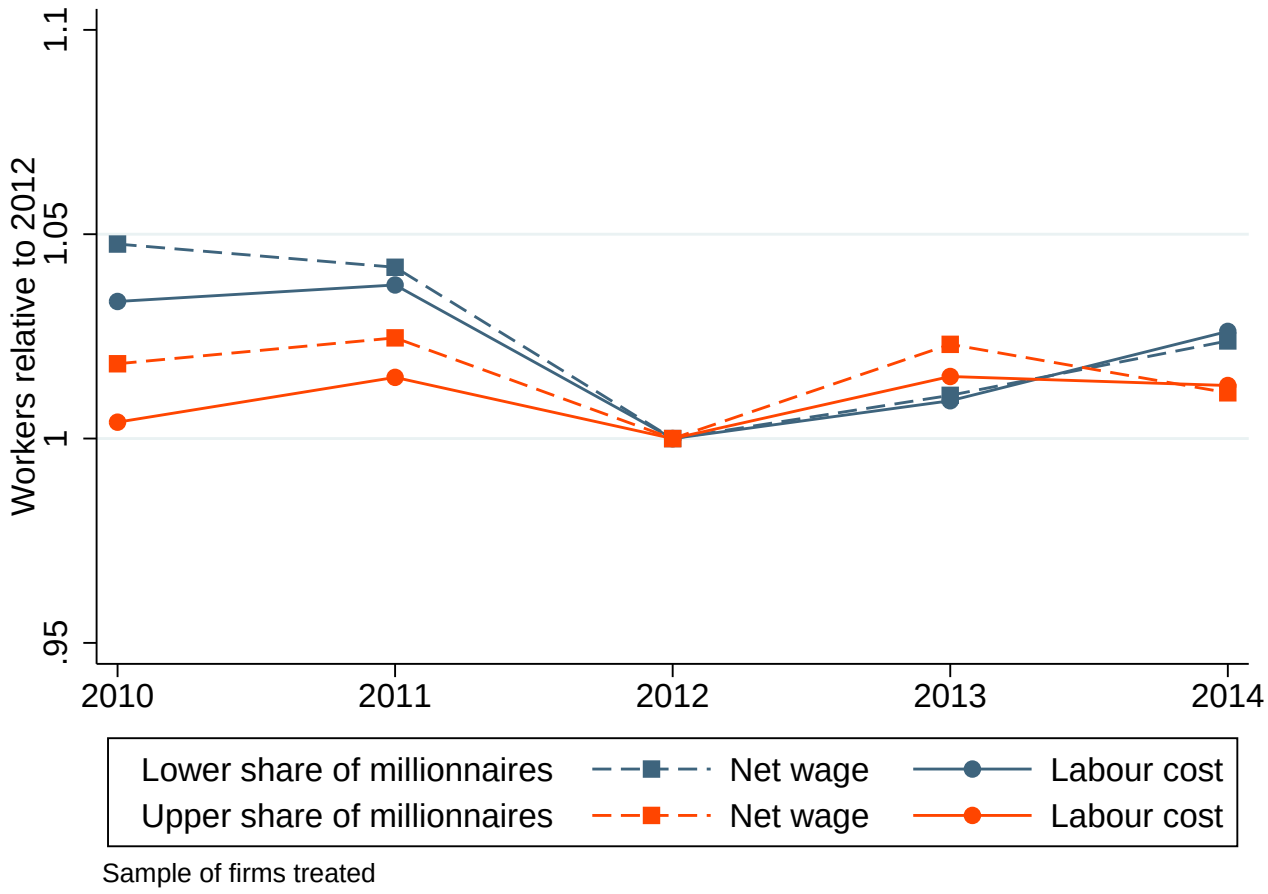
(median) Average Wages by Worker from the Next 0.005%



Source: DADS POSTES 2010-2014

Conclusion

- Worker-level effects:
  - Incidence at 80% on the firms
  - Coming from workers who do not change jobs
- Firm-level effects:
  - Firms less treated absorb the shock more than the other
  - No dividend shift
  - Potential optimization at the firm-level

Who Payed the 75% Tax on Millionaires? Optimization of Salary Incomes and Incidence in France

Labour and Public Economics (internal seminar)

Malka Guillot

November, 23 2017

Paris School of Economics - EHESS

PARIS SCHOOL OF ECONOMICS
ECOLE D'ECONOMIE DE PARIS

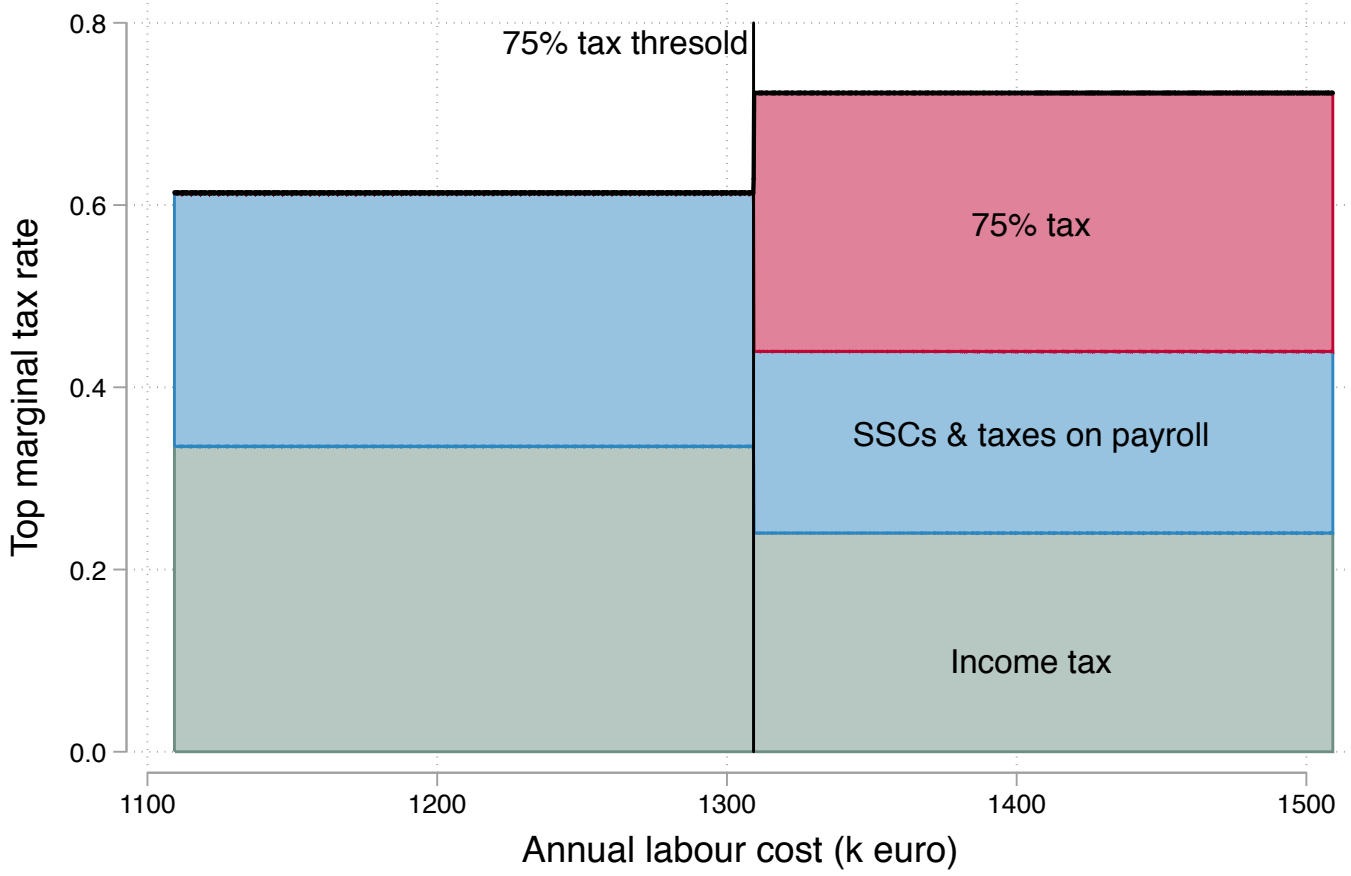


Figure 3: Introduction of the 75% tax

Source: Taxipp 0.3

◂ Return

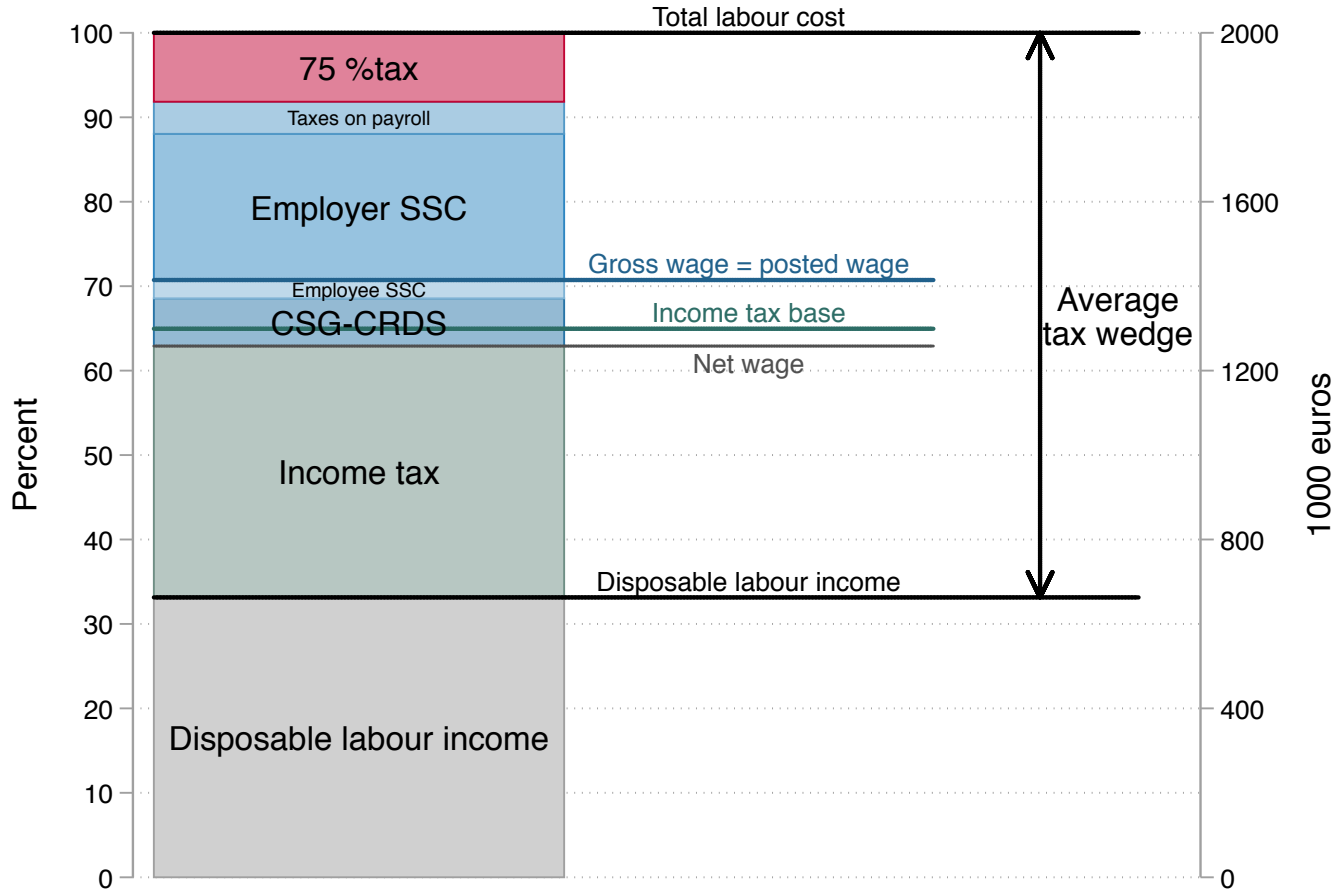


Figure 4: Decomposition of the average labour wedge for a labour cost of 2000 k€

Source: TAXIPP 0.3

◂ Return

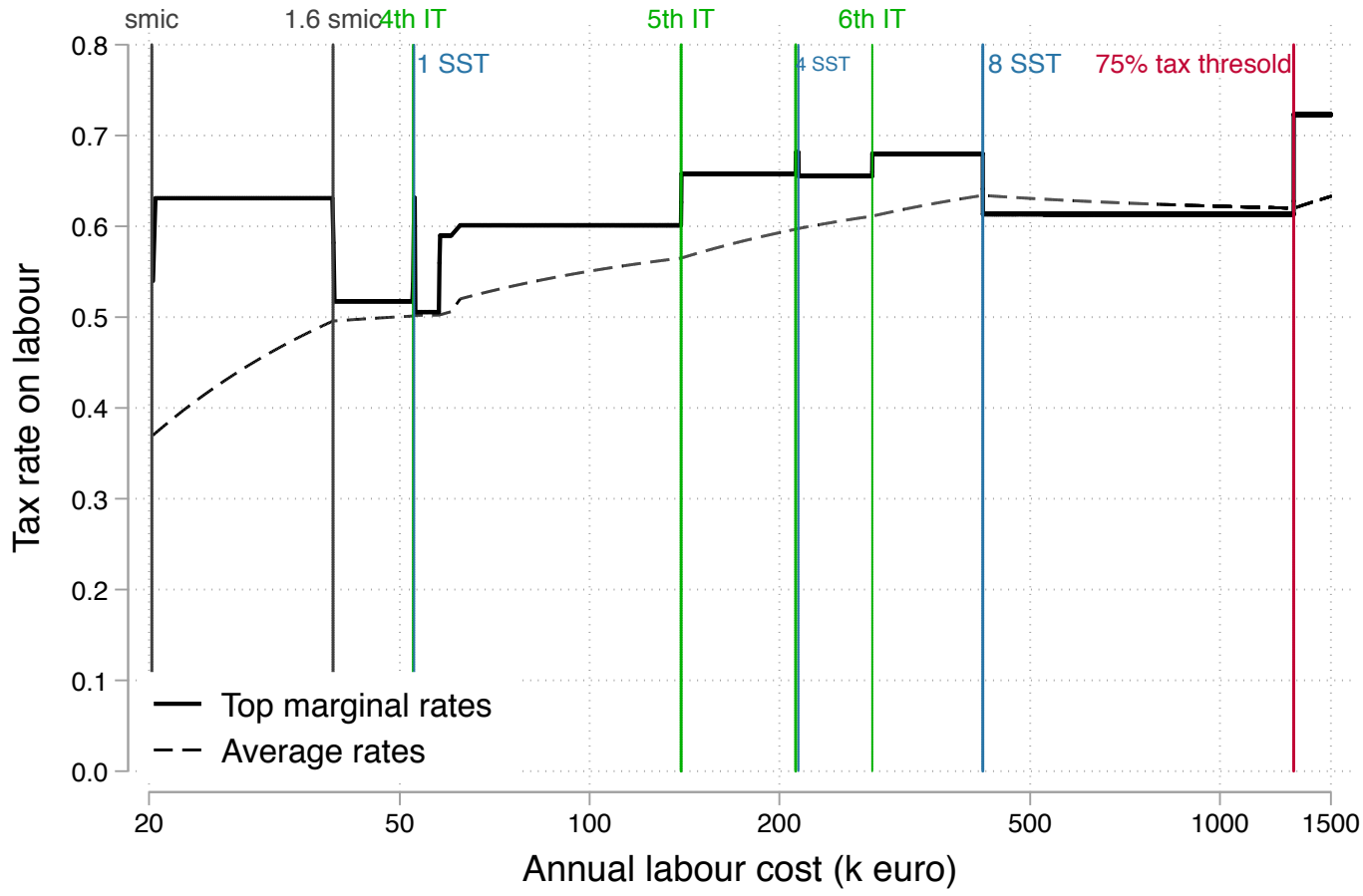


Figure 5: Labour tax rate along the income distribution (2013)

Source: TAXIPP 0.3

◂ Return