

# THE FIRM AS TAX SHELTER

MICRO EVIDENCE AND AGGREGATE IMPLICATIONS OF CONSUMPTION THROUGH THE FIRM

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NBER (from September 2025)

107th GEE/GPEARl Seminar

July 09, Lisbon, 2025

## MOTIVATION

- *Consumption through the firm* prevents business income from being taxed as a distribution – either as dividends or wages – and inflates firm costs.
- It is a *margin of tax evasion* that **circumvents CIT, PIT & VAT**, regardless of differences in tax rates between L and K, and irrespective of how broadly the tax bases are designed.
- It does not require tax sophistication and it is almost impossible to enforce given the *wide range of expenditures that lie on the border between business and personal consumption*.
- Has important **implications** for the measurement of the *scale of tax evasion* and *income inequality*, and it might distort the measurement of household's final consumption and firms' intermediate consumption, and result in undervaluation of the GDP.

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Despite these implications, **consumption through the firm has not been well studied.**

## STATE OF ART

- The literature has focused on the flexibility of owner-managers to choose how to label business income to minimize taxes at payout and to use firms as tax-free saving vehicles through strategic earnings retention (Smith et al., 2021; Miller et al., 2020).
- Some authors have suggested it as a payout strategy among individuals who control firms (Kopczuk and Zwick, 2020; Alstadsæter et al., 2014; Clotfelter, 1983).
- For example, following a reform that increased dividend taxes in Norway in 2006: *"While all categories of assets grow, the increase in durable asset categories that include company cars, planes, and boats is particularly striking"* (Alstadsæter et al., 2014).

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Yet, the press is full of colorful anecdotal evidence... ▶ Sources

# Former Caja Madrid directors accused of misusing company credit card

Eighty-three executives collectively spent €15m over 10 years at savings bank that merged to become Bankia before 2012 bailout



Ex-Bankia chair Rodrigo Rato, above, and former Caja Madrid CEO Miguel Blesa have been summoned to appear before a judge over the scandal. Photograph: Dominique Faget/AFP/Getty Images Photograph: Dominique Faget/AFP/Getty Images

Fresh evidence is emerging of the spendthrift lifestyle of the directors of the once-mighty Caja Madrid savings bank even as the 300-year-old institution drifted into crisis.

The 83 directors were each issued with a "black" credit card, with the collective bill reaching €15m (£12m) over a 10-year period. The money was spent on holidays and shopping trips, with €3m spent in restaurants.

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By ABC News

February 5, 2009, 9:37 PM



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### Enquête

## Carlos Ghosn: quand le patron de droit divin revient sur la réunion de sa cour à Versailles

Dans son audition au Liban que révèle «Libération», le magnat de l'automobile, interrogé pour la première fois sur ses «dépenses personnelles» prises en charge par Renault-Nissan, a tenté de justifier maladroitement les fastes d'une soirée payée par l'alliance le jour de son anniversaire.



## THIS PAPER

- This paper uses data from *social security records* and *electronic invoices* in Portugal:
  - Monthly consumption expenditures covering  $\approx 70$ -75% of the net-of-VAT final consumption expenditures of resident households recorded in National Accounts.
  - Monthly business expenditures covering all business-to-business transactions.
  - Social security records capturing transitions from employee to business manager.
- Use panel event studies exploiting:
  - The variation in the flexibility to treat some forms of personal consumption as business expenditures that accompanies the employee-to-manager transition.
  - The impact of personal events of owner-managers on business expenditures.
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- 1 Introduction
- 2 Background and data
- 3 Consumption through the firm: Micro evidence
- 4 Aggregate implications
- 5 Conclusion

## BACKGROUND AND DATA

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## ELECTRONIC INVOICES: THE E-FATURA SOFTWARE SYSTEM

- e-Fatura is an electronic invoicing software adopted in 2013 to fight VAT fraud.
- For **firms** and other legal entities, electronic invoicing is mandatory, so e-Fatura cover the universe of business-to-business transactions.
- For **final consumers**, the government provides a set of incentives for them to ask for an invoice with their taxpayer number at the time of the purchase:
  - Weekly lotteries with a prize of 35,000 euros each.
  - Rebate on personal income tax of 15% of the VAT supported on restaurants, hairdressers, vets, car repair.
  - Deduction to personal income tax of 35% of all expenditures (up to 500 euros), plus 15% of the expenditures on health, education and transport expenditures.
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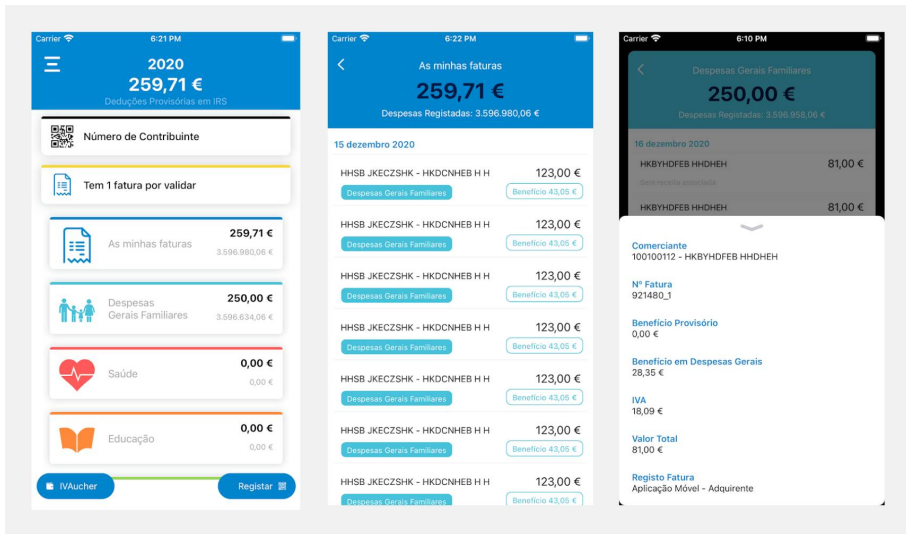
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# EXAMPLE OF THE E-FATURA ONLINE ACCOUNT



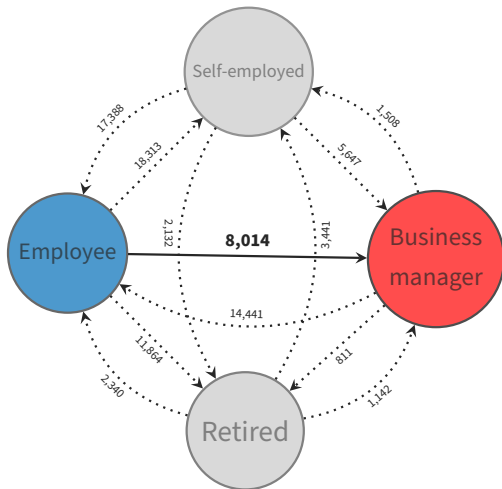
# EMPLOYEE-TO-MANAGER TRANSITIONS

Two distinct social security regimes:

- **Employees**
- **Business managers**

Social security records provide data on the month individuals start contributing under a regime  $\Rightarrow$  stocks & flows

**Focus:** individuals who switch from **Employee** to **Business manager** from Jan-2016 to Dec-2019

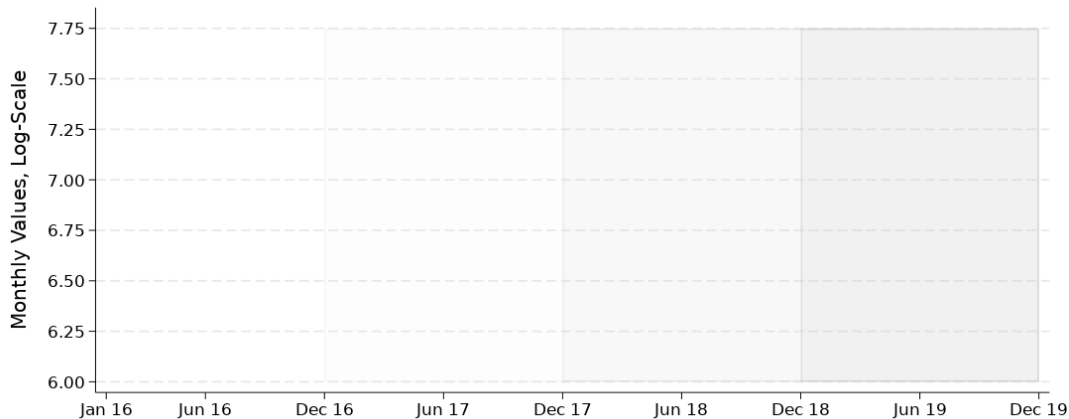


## ANALYSIS DATASET

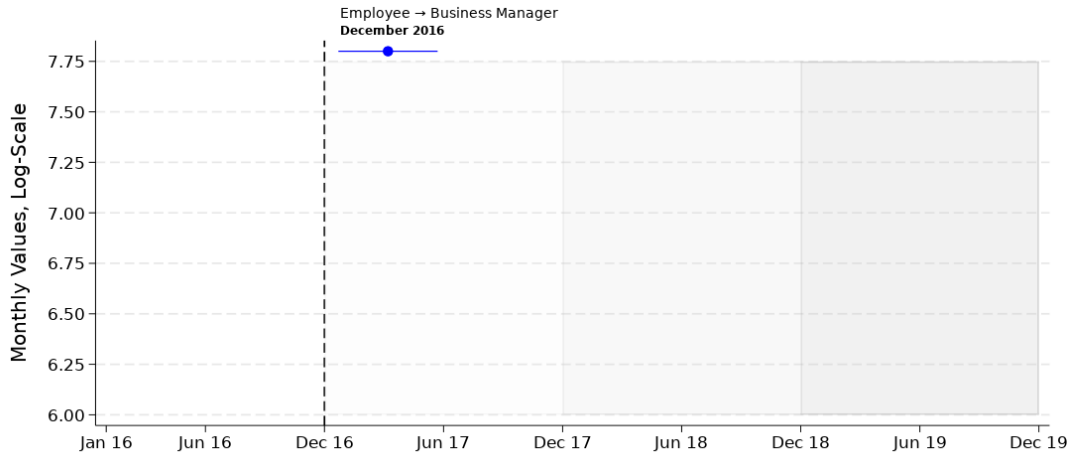
	2016	2017	2018	2019	2016-2019
<b><i>Individuals</i></b>					
Switchers	6,973	7,272	7,418	8,014	29,677
Spouse/partner	4,032	4,075	3,896	3,991	15,994
Children/others	6,514	6,503	6,294	6,498	25,809
All individuals	17,519	17,850	17,608	18,503	71,480
Share who stay 48 months	0.82	0.78	0.72	0.68	0.77
<b><i>Matched with Monthly Expenditure data</i></b>					
Total Observations	5,237,167	5,617,369	6,024,052	6,601,955	23,480,543



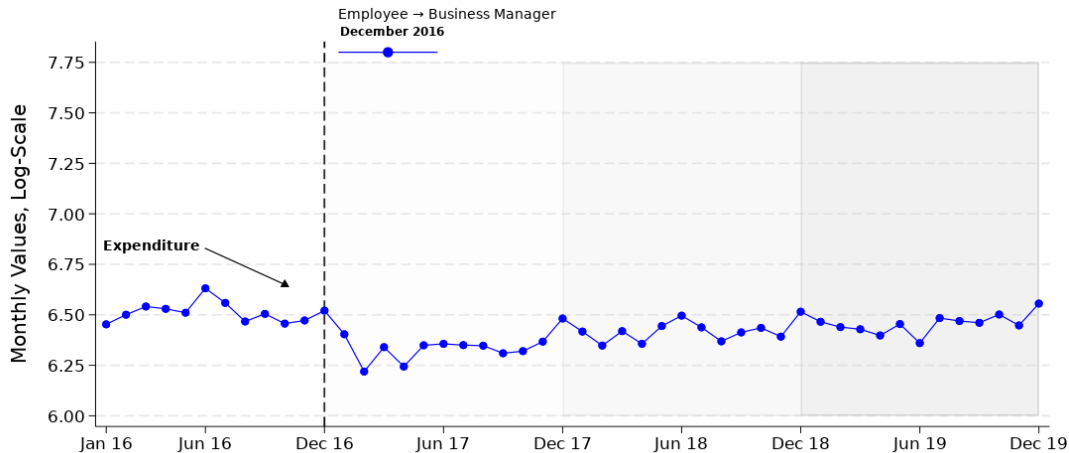
## EXAMPLE: INDIVIDUALS WHO SWITCH FROM EMPLOYEE TO BUSINESS MANAGER



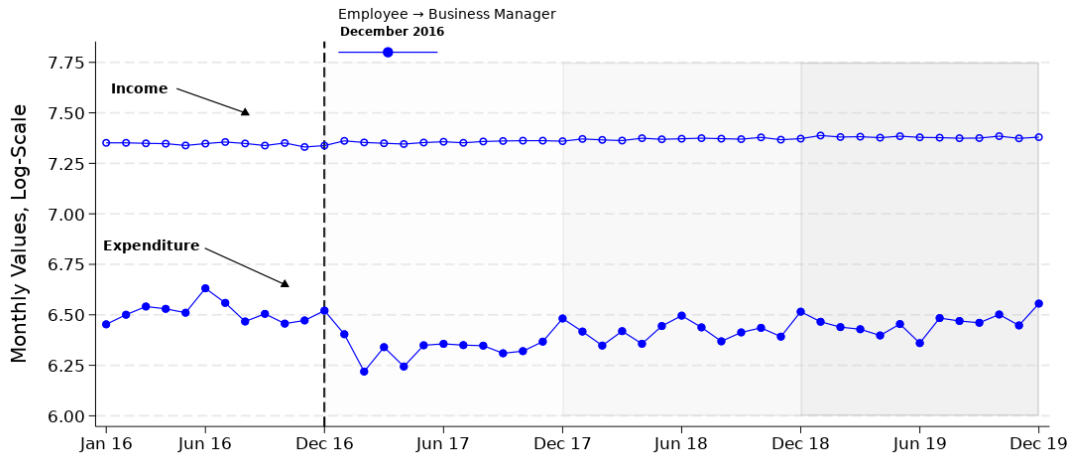
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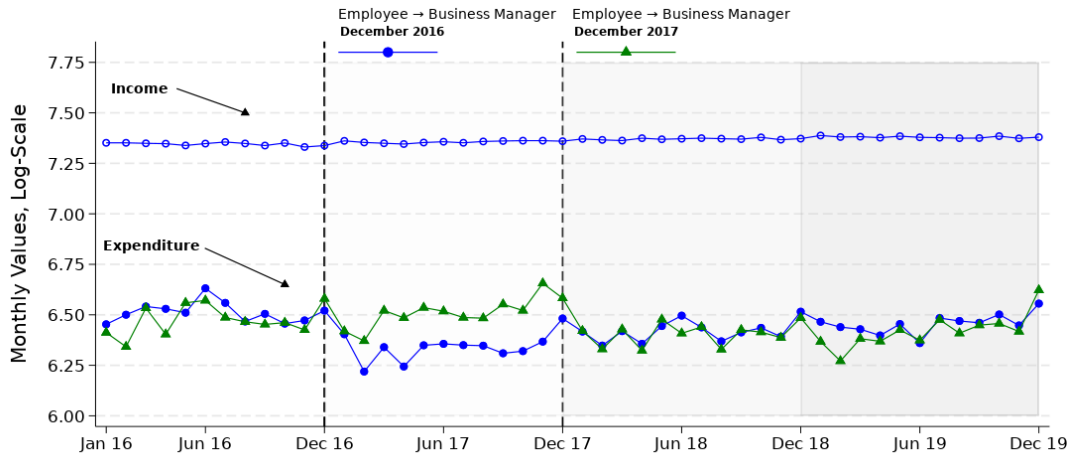
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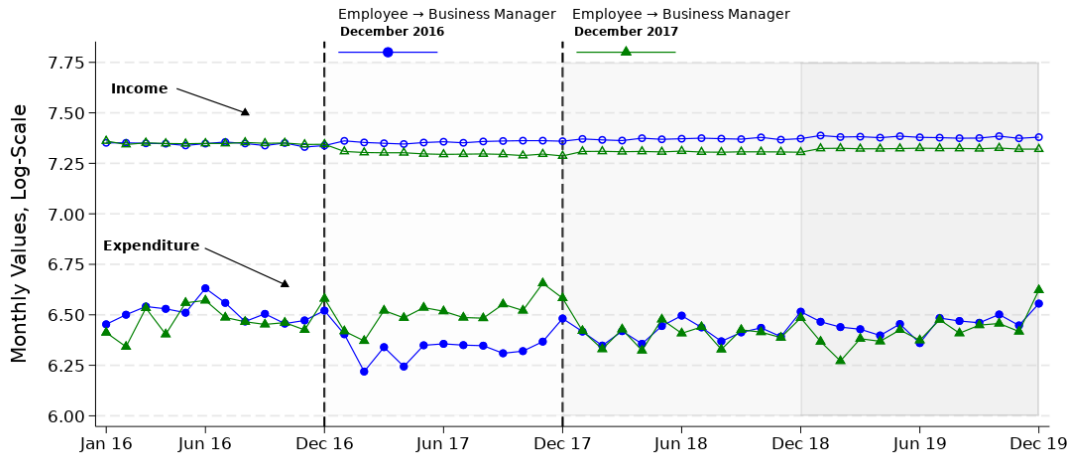
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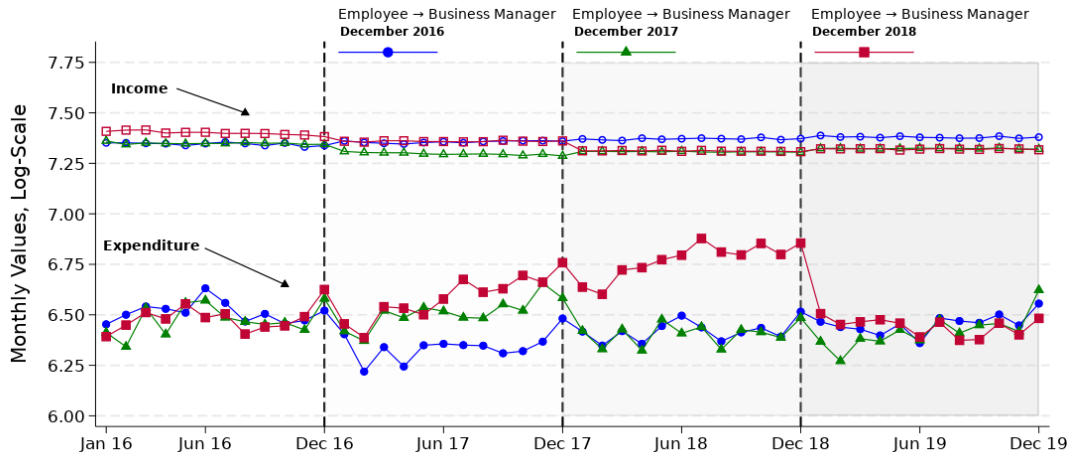
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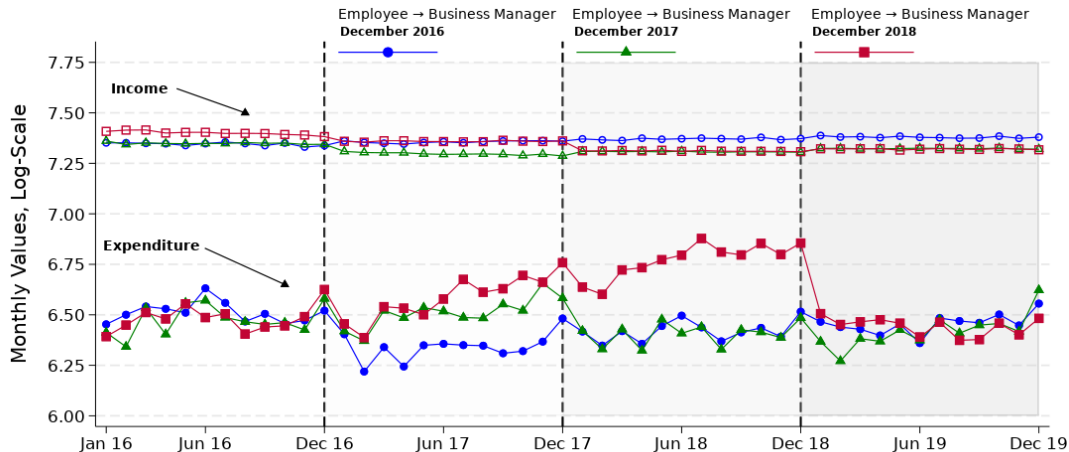
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## CONSUMPTION THROUGH THE FIRM: MICRO EVIDENCE

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## EVENT STUDIES WITH STAGGERED ADOPTION

I estimate how monthly personal expenditures evolve after an individual chooses to switch from being an *employee* to being a *business manager* with an event study:

$$\log(y_{it}) = \alpha_i + \lambda_t + \sum_{g \in G} \delta_g \cdot \mathbf{1}[t - E_i \in g] + \varepsilon_{it}, \quad (1)$$

- $i$  indexes individuals and the  $t$  indexes calendar months,  $y_{it}$  is the reported monthly expenditure,  $\lambda_t$  is a year-by-calendar month fixed effect and  $\delta_i$  is an individual fixed effect,  $e_{it} = t - E_i$  is the event time, the set  $G$  collects disjoint sets  $g$  of *relative periods*  $l \in [-T, T]$ .
- To account for the heterogeneity in treatment timing, I estimate the event study using the estimator from [Callaway and Sant'Anna \(2020\)](#).
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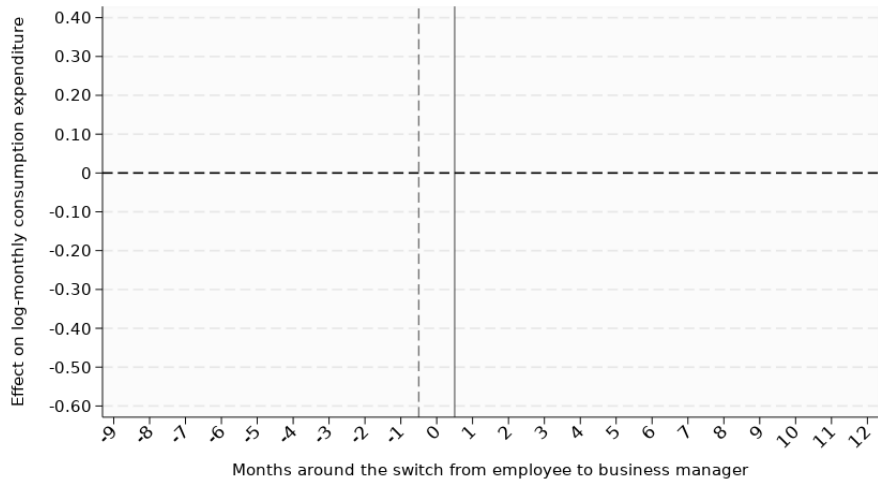
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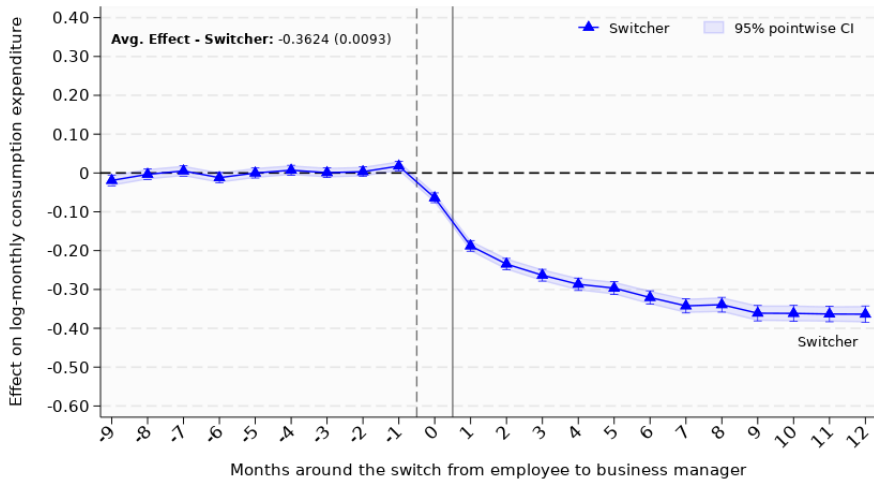
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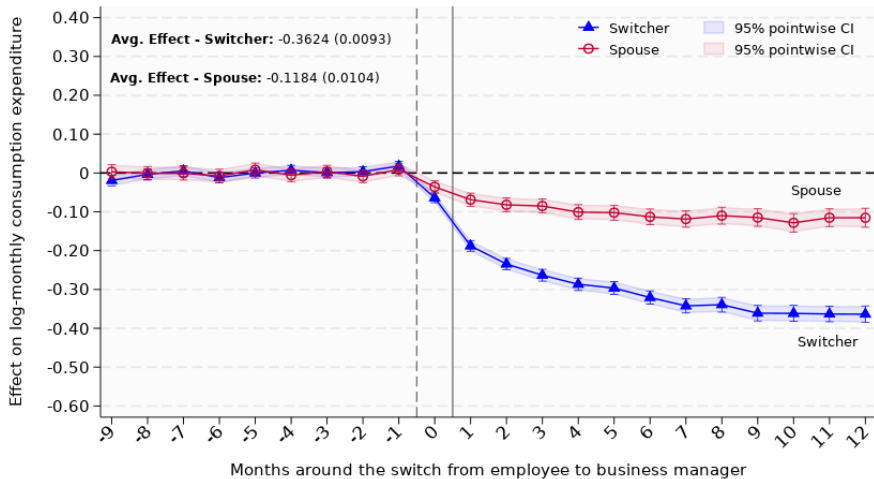
## BASELINE RESULTS



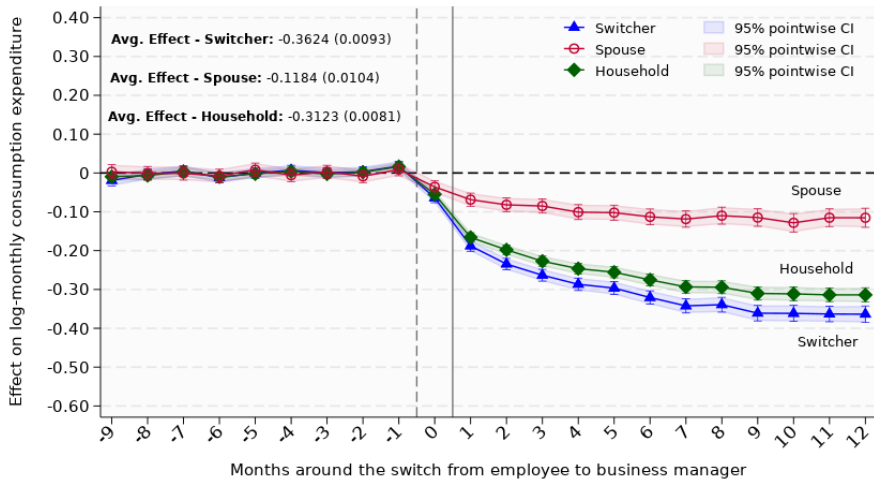
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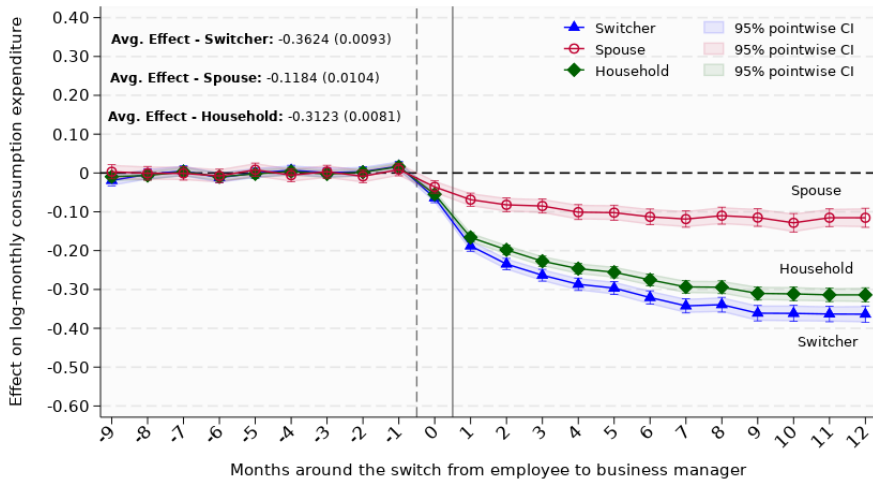


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## INCOME SHOCK?

- Individual expenditures drop by about 36% when individuals become managers (20% in the first month after becoming business manager).
- Spouse's expenditures drop by spouse by about 12% and combined household expenditures drop by about 31%.
- Is this alternatively the result of an income shock and/or increases in savings?
  - Income Shock? Employees opening their own business but earning less business income as compared to labor income.
  - Prudence? Individuals become entrepreneurs and increase precautionary savings in face of uncertain business incomes.
- If it is a shock to income, all consumption should react, but...

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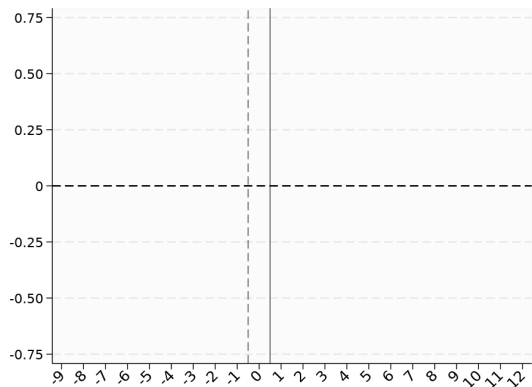
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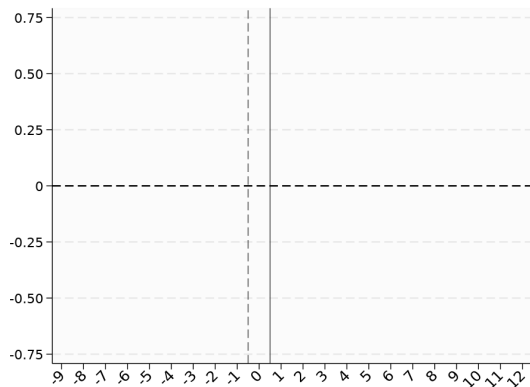
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# BORDERLINE VS. HARD-TO-SHIFT EXPENDITURES

Wholesale & retail trade; car repair

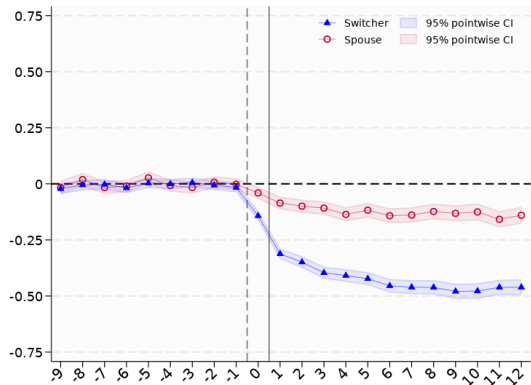


Nonessential health services

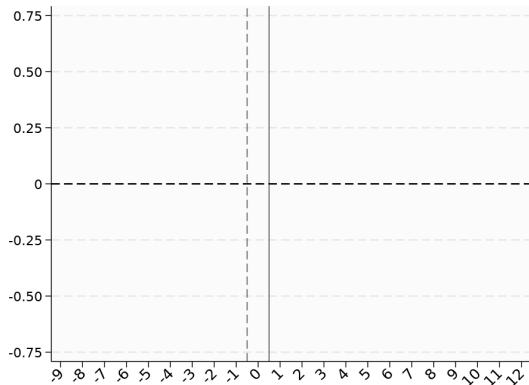


# BORDERLINE VS. HARD-TO-SHIFT EXPENDITURES

## Wholesale & retail trade; car repair



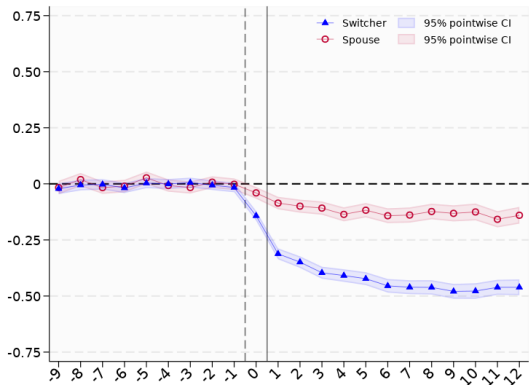
## Nonessential health services



Supermarkets, clothing and shoes, household equipment,  
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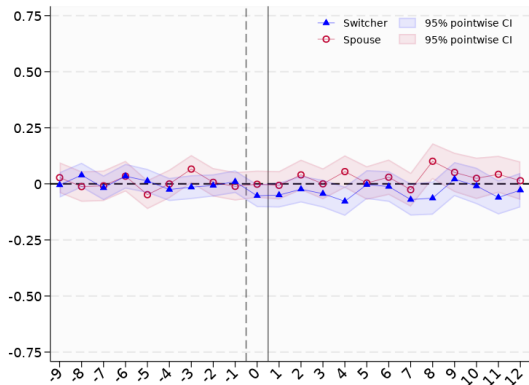
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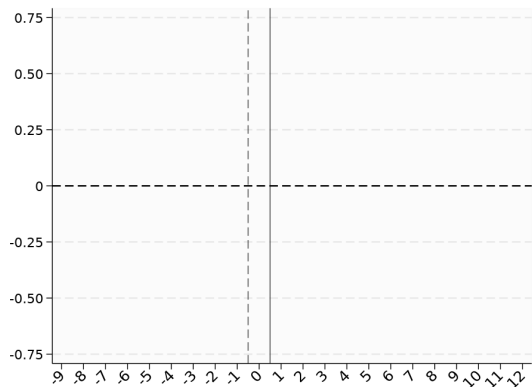
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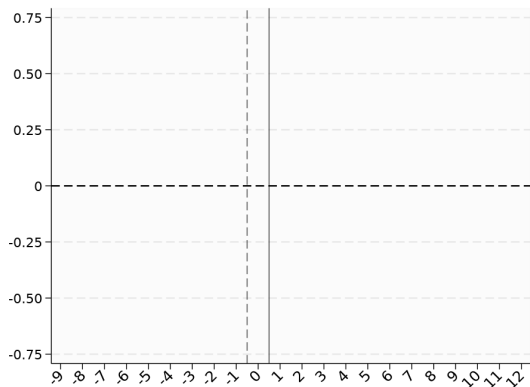
Nonurgent medical services provided by the private sector, namely dentistry and therapy.

# BORDERLINE VS. HARD-TO-SHIFT EXPENDITURES

Hotels & restaurants



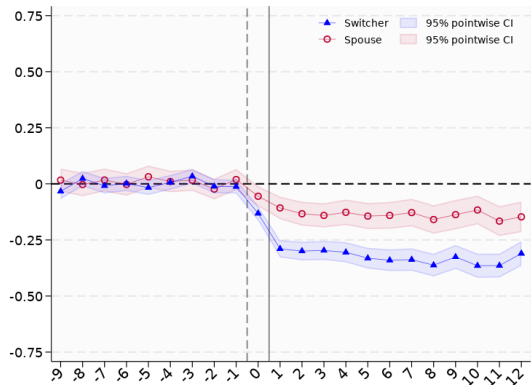
Private education





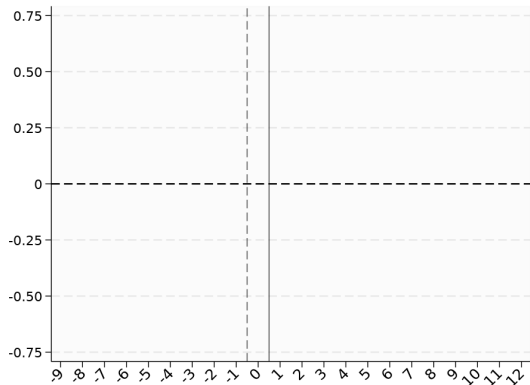
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## Hotels & restaurants



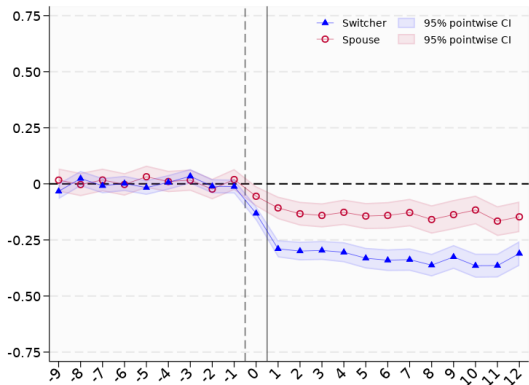
Hotels, holiday and short stay accommodation, catering, food and beverage service activities.

## Private education



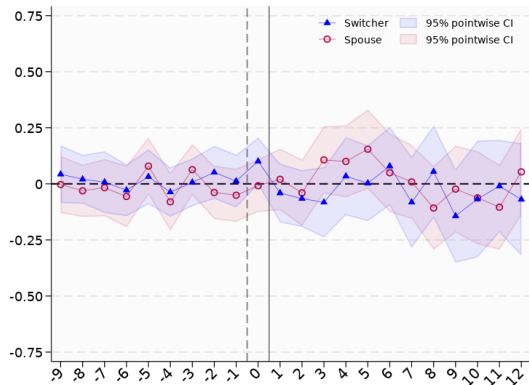
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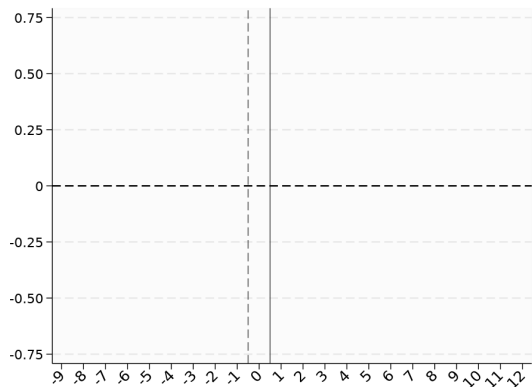
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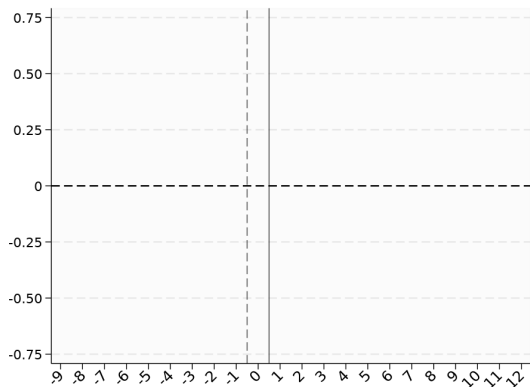
Education services provided by the private sector, namely private tutoring and sports, and cultural activities.

# BORDERLINE VS. HARD-TO-SHIFT EXPENDITURES

Information & communication

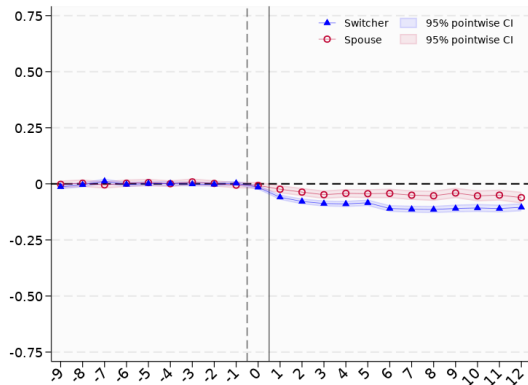


Electricity, gas & air conditioning



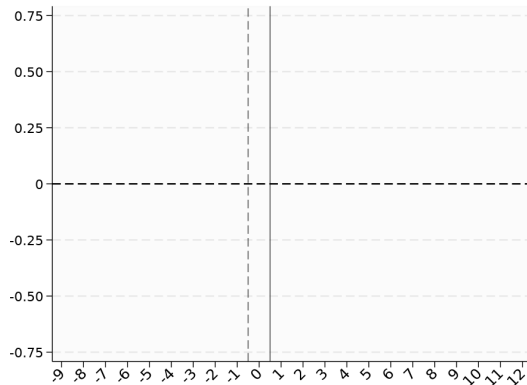
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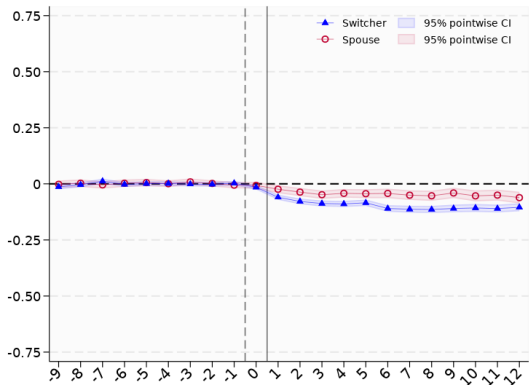
Mobile phones, internet, television, and other telecommunication services.

## Electricity, gas & air conditioning



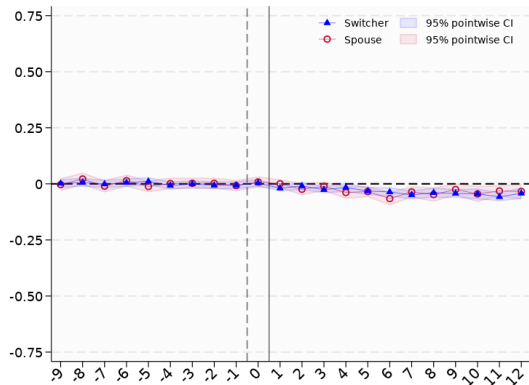
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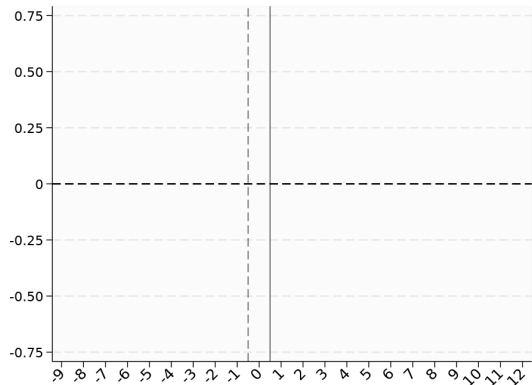
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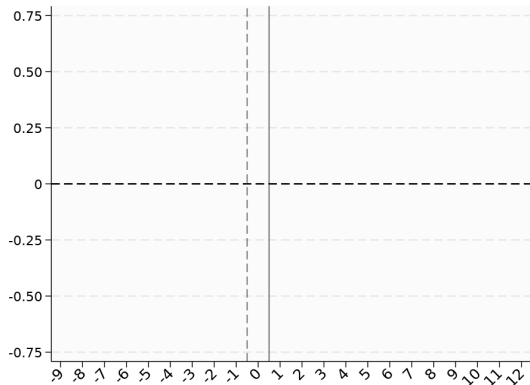


# BORDERLINE VS. HARD-TO-SHIFT EXPENDITURES

Technical activities

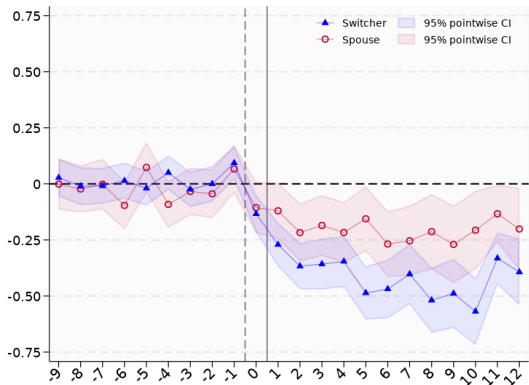


Water distribution



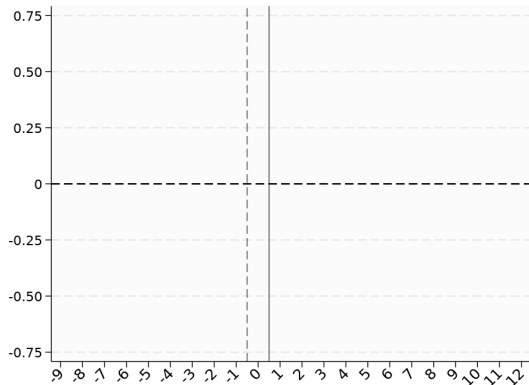
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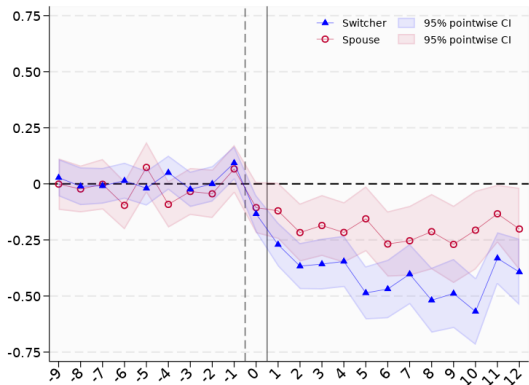
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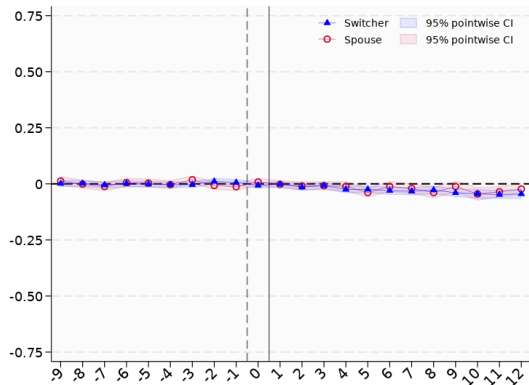
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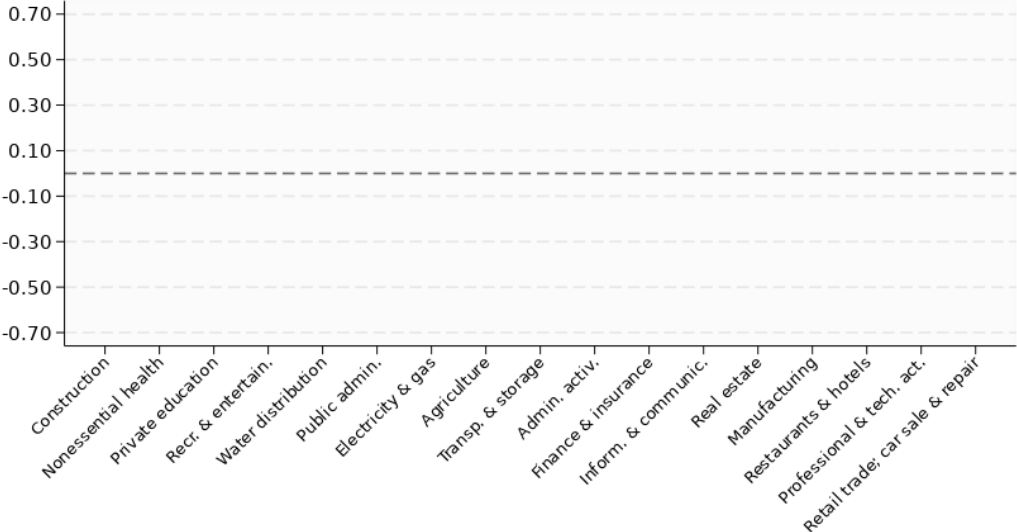
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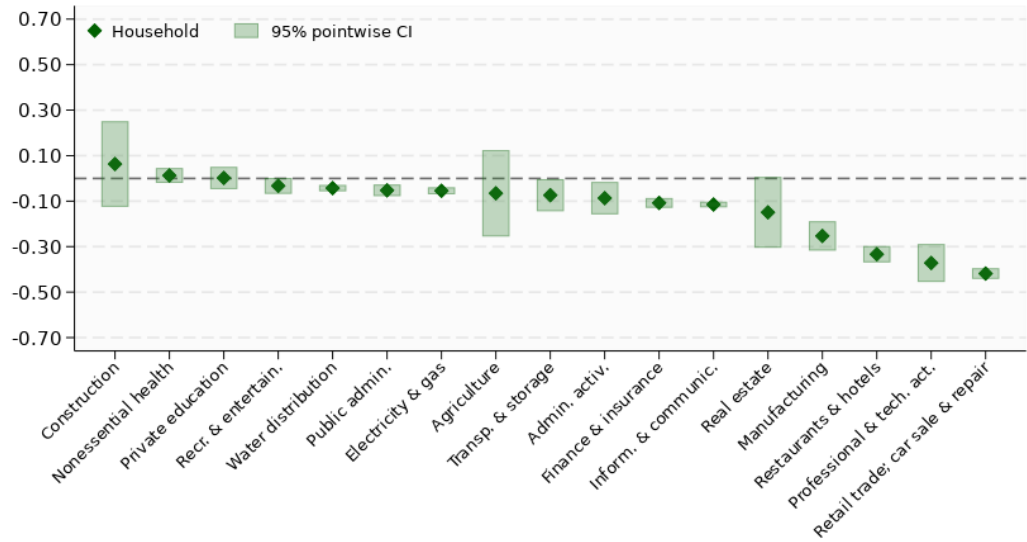




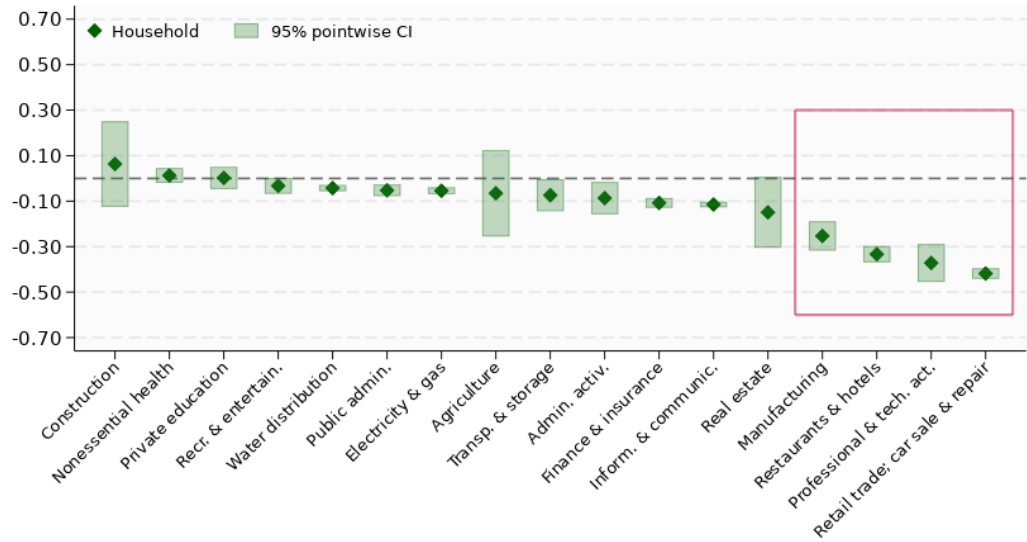
AVERAGE EFFECTS ON ALL EXPENDITURE CATEGORIES — **HOUSEHOLD**



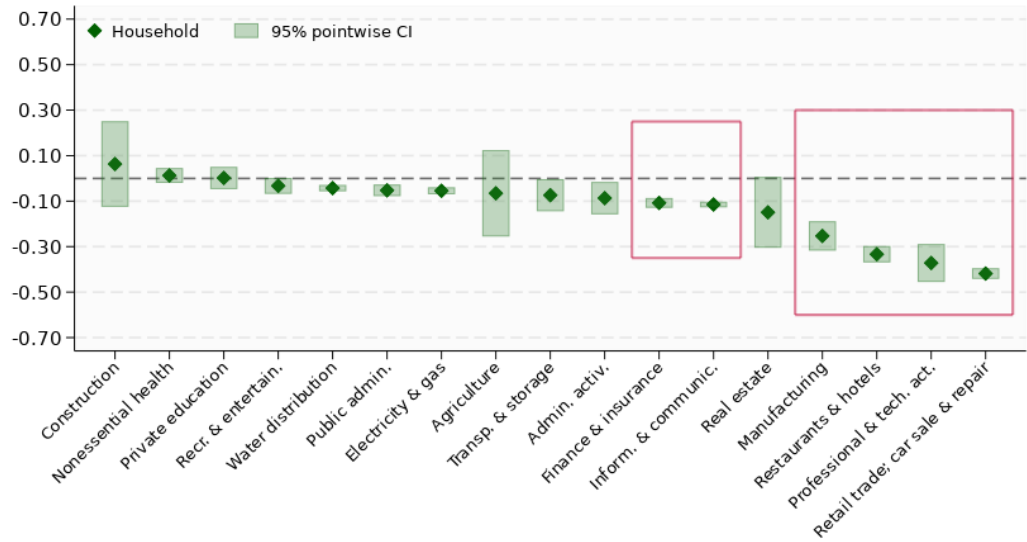
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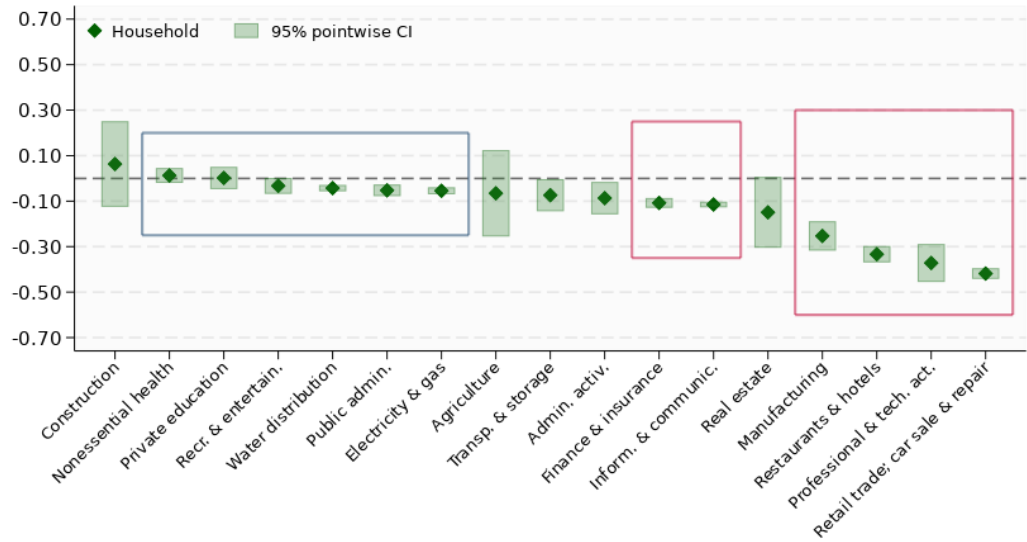
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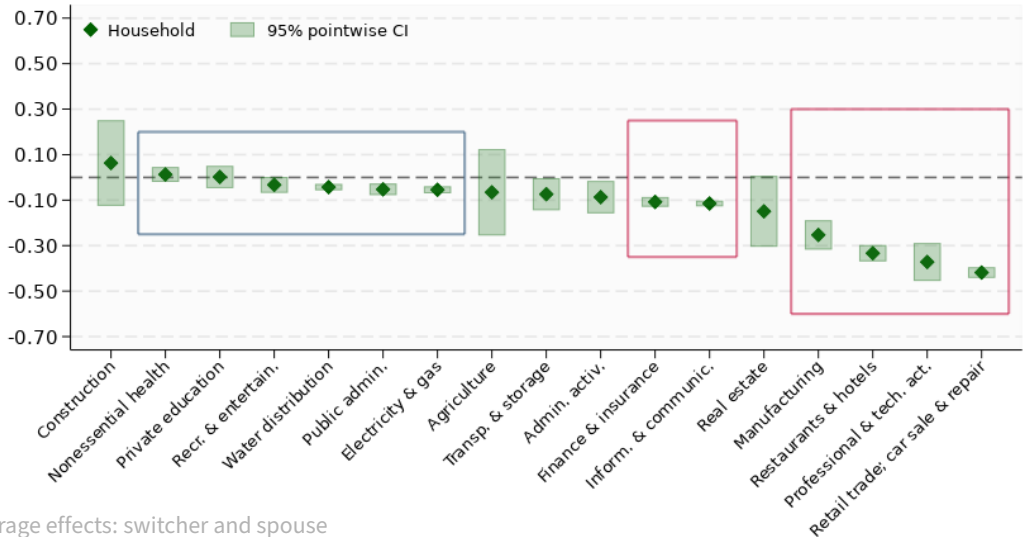
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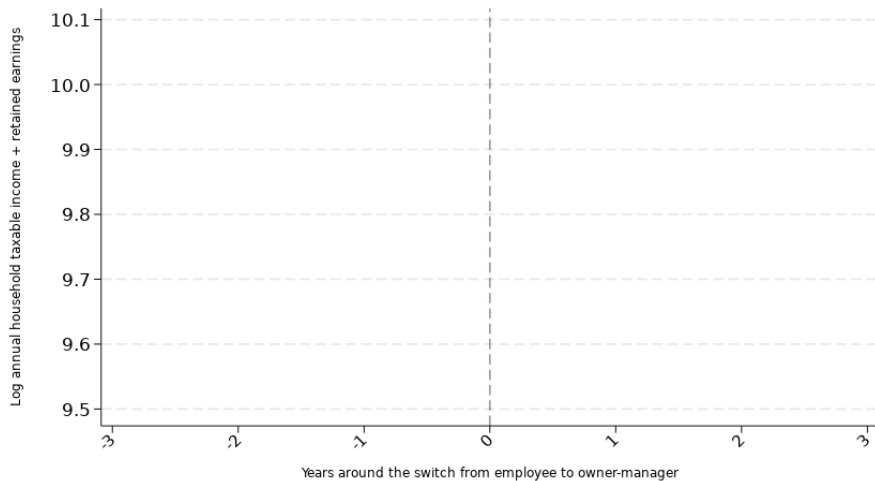


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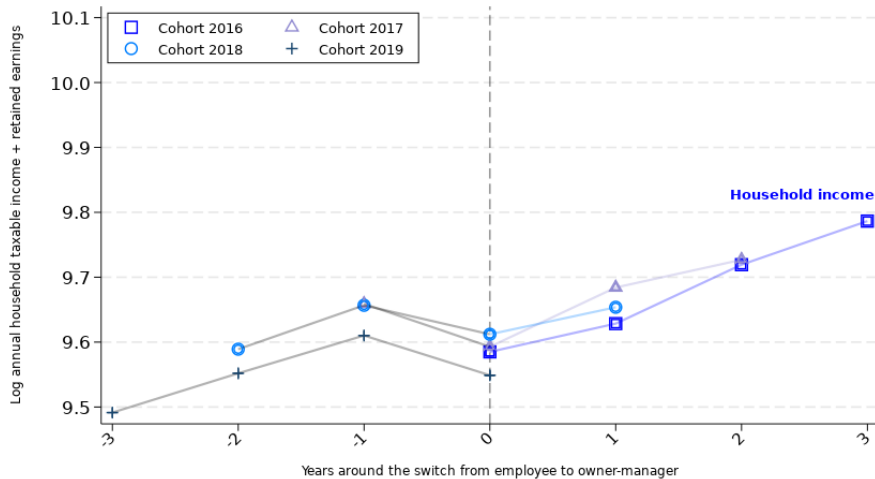


► Average effects: switcher and spouse

## HOW INCOME EVOLVES AROUND THE SWITCH?

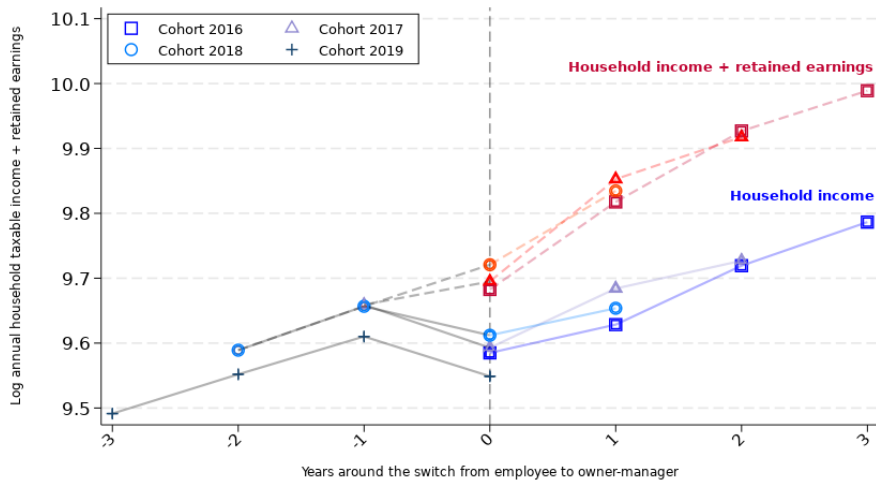


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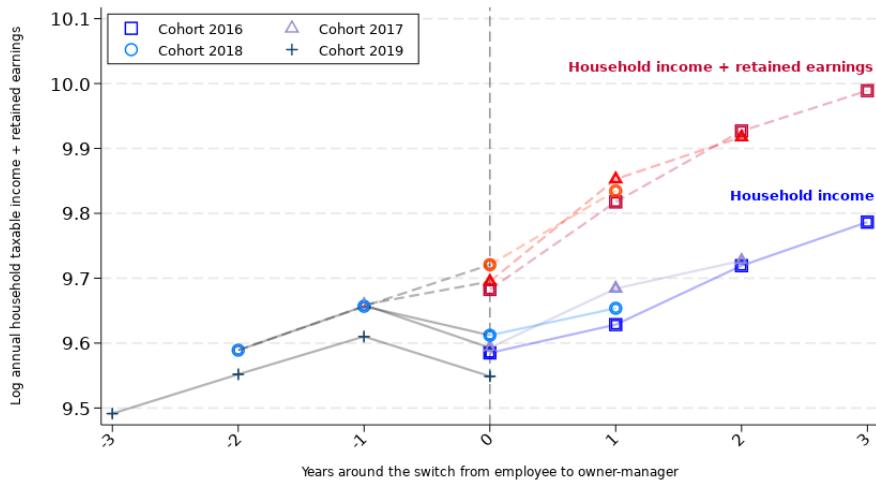




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HOW WIDESPREAD IS CONSUMPTION THROUGH THE FIRM?

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- Significant declines in household consumption expenditures after individuals become business managers.
- Income shock is ruled-out: only expenditures that lie on the business-consumption borderline adjust while hard-to-shift expenditures do not react to the switch.
- But... *Is this of major economic importance?*
- To understand whether consumption through the firm is limited to “poor” business managers or is instead a widespread phenomenon, I estimate the *effects across the income distribution*.

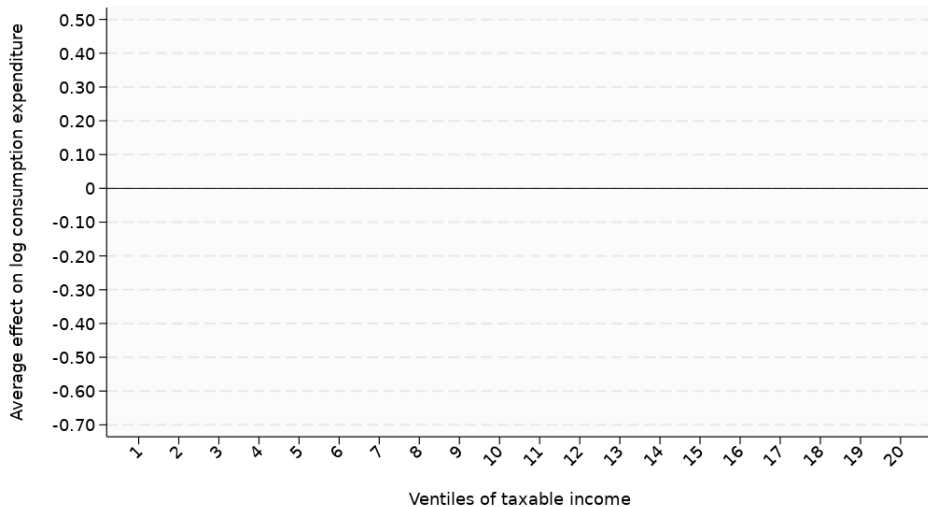
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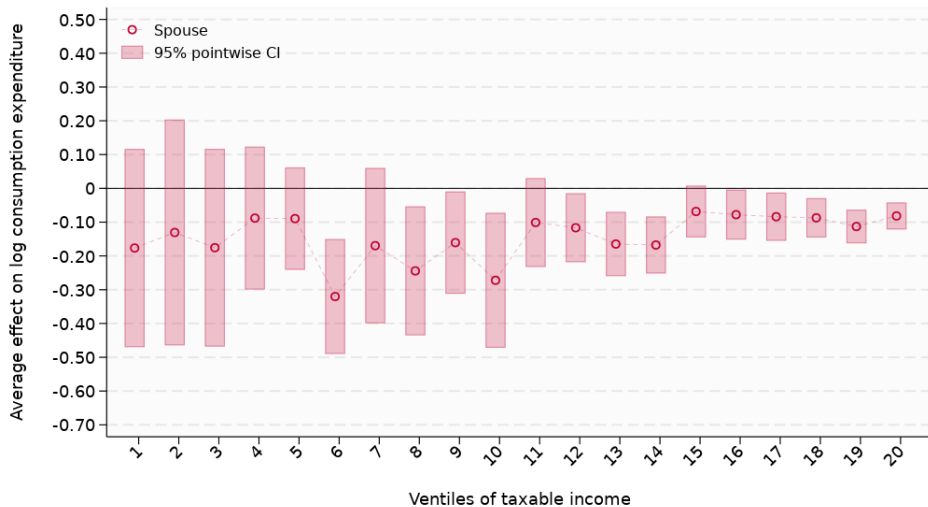
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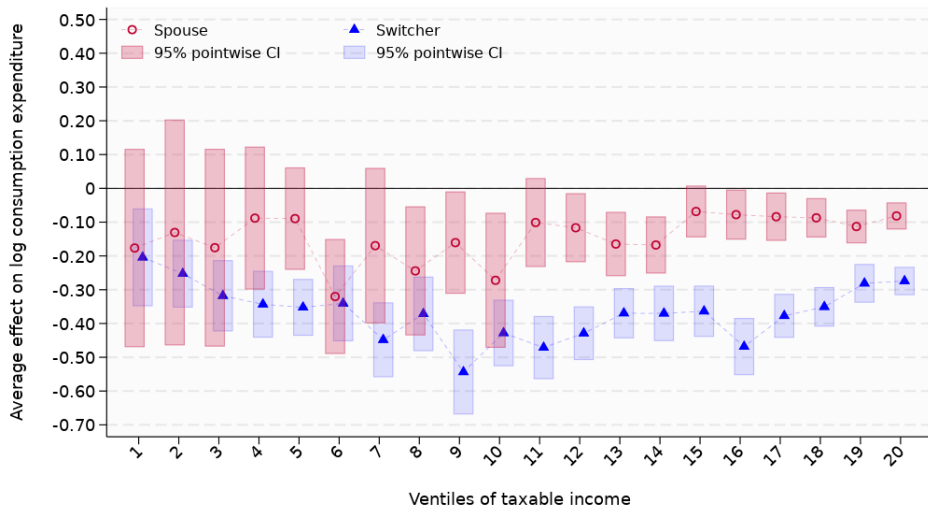


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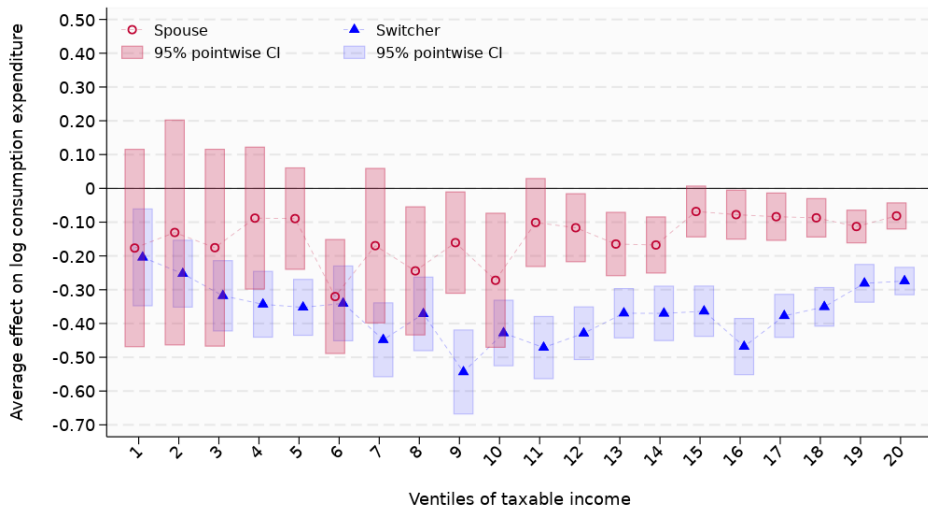




# HOW WIDESPREAD IS CONSUMPTION THROUGH THE FIRM?



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▸ By decile   ▸ By percentile

## HETEROGENEITY

- Effects by **firm size** ( [▸ here](#) )
- Effects by **ownership status** ( [▸ here](#) )
- Effects by **industry** ( [▸ here](#) )

Additional descriptives on the population of business managers:

- Position in the income distribution ( [▸ here](#) )
- Distribution by firm size ( [▸ here](#) )
- Distribution by industry ( [▸ here](#) )

## BUSINESS EXPENDITURES AND LIFE EVENTS

---

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- Looking at firm's expenditures it is *very hard to distinguish the pure business demand from the goods and services purchased solely for their consumption value.*
- How personal consumption motives affect the pattern of business expenditures? I estimate how monthly business expenditures react to life events of the business owner-manager with the following event study:

$$F_{it} = \sum_{k \in \{-5+, \dots, -1, 0, 1, \dots, 5+\}} \beta_k \mathbf{1}(t = k) + \theta_i + \lambda_t + \varepsilon_{it} \quad (2)$$

- Specifically, I estimate how monthly business expenditures on hotels and restaurants evolves around the birthday month of the owner-manager and the spouse.

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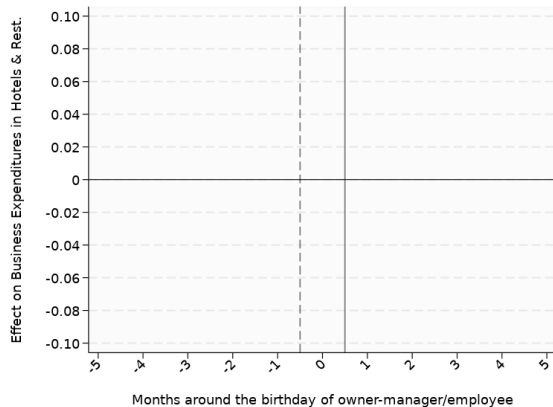
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▸ Raw averages (Owner-managers)    ▸ Raw averages (Employees)



# MONTHLY BUSINESS EXPENDITURES IN HOTELS & RESTAURANTS

Birth month of a randomly selected employee



Birth month of the employee's spouse

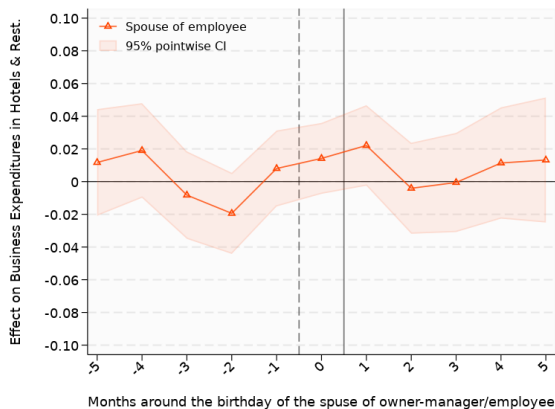


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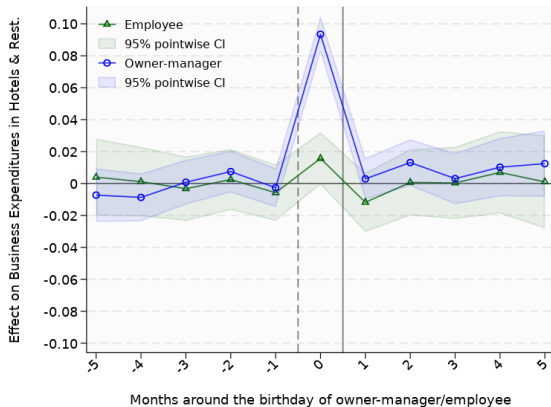


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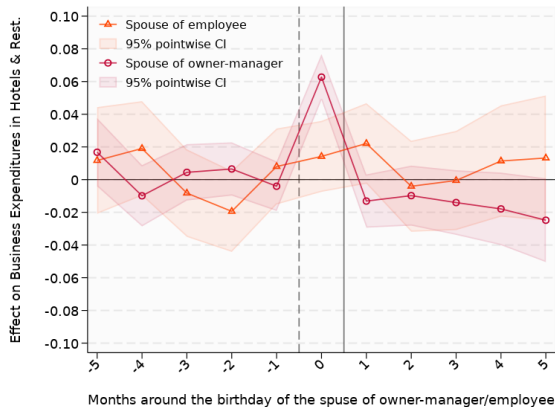
# MONTHLY BUSINESS EXPENDITURES IN HOTELS & RESTAURANTS

## Birth month of the owner-manager



► All business expenditures (owner-managers)

## Birth month of the owner-manager's spouse



► All business expenditures (spouses)

## AGGREGATE IMPLICATIONS

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## BASELINE HOUSEHOLD CONSUMPTION

	Million EUR	% of GDP		
Household expenditure (5.3 million households)	53,744	25.07	–	–
Owner-managers' household expenditure (287.9 thousand households)	6,119	2.85	–	–

## ADJUSTING HOUSEHOLD CONSUMPTION

	$\hat{\delta} = 0.3123$		$\delta = \hat{\delta}_p$	
	Million EUR	% of GDP	Million EUR	% of GDP
$\Delta\text{Cons.} = \bar{c}/(1 - \hat{\delta}) - \bar{c}$	2,778	1.30	2,672	1.25
	(2,577   2,989)	(1.20   1.39)	(1,238   5,598)	(0.58   2.61)

## GOVERNMENT REVENUE LOSS

	$\hat{\delta} = 0.3123$		$\delta = \hat{\delta}_p$	
	Million EUR	% of GDP	Million EUR	% of GDP
Aggregate loss in PIT				
Dividends: $\tau = 28\%$	1,080	0.50	1,039	0.48
$\tau/(1 - \tau) \cdot \Delta\text{Cons.}$	(1,002   1,162)	(0.47   0.54)	(482   2,177)	(0.22   1.02)

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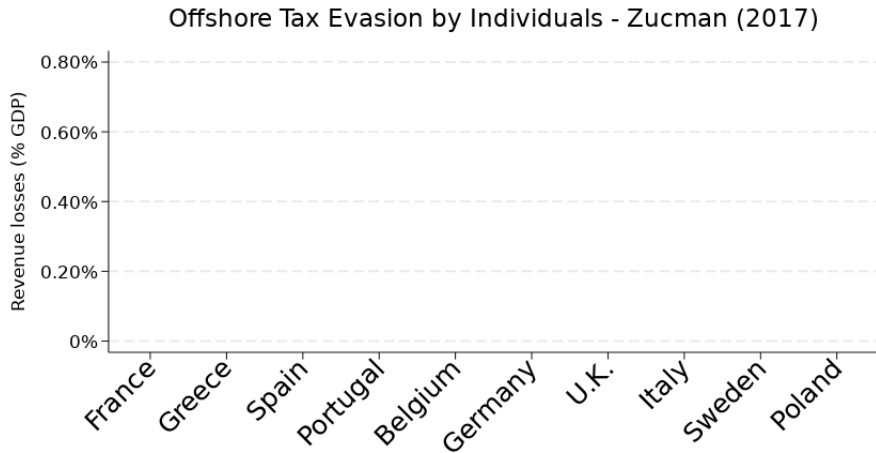
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Aggregate loss in PIT and VAT								
Dividends: $\tau = 28\%$ ; VAT: $\gamma = 23\%$	2,233		1.04		2,148		1.00	
$\left[ \frac{1}{(1-\gamma) \cdot (1-\tau)} - 1 \right] \cdot \Delta\text{Cons.}$	(2,071	2,402)	(0.97	1.12)	(995	4,499)	(0.46	2.10)

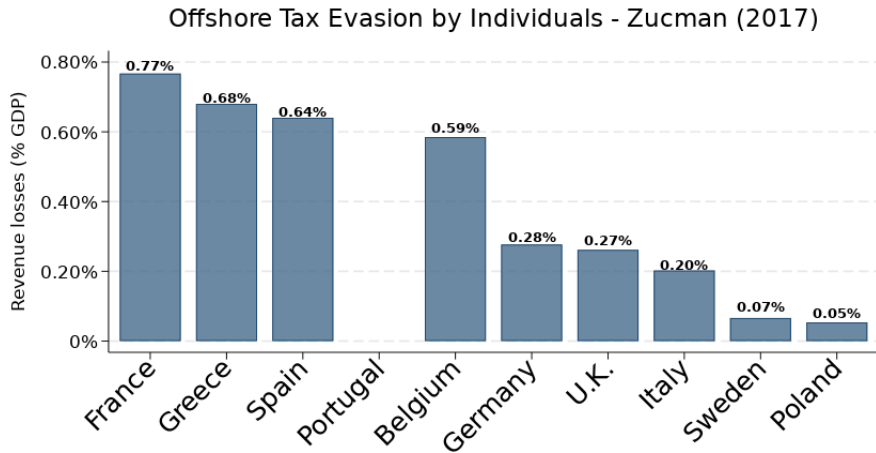
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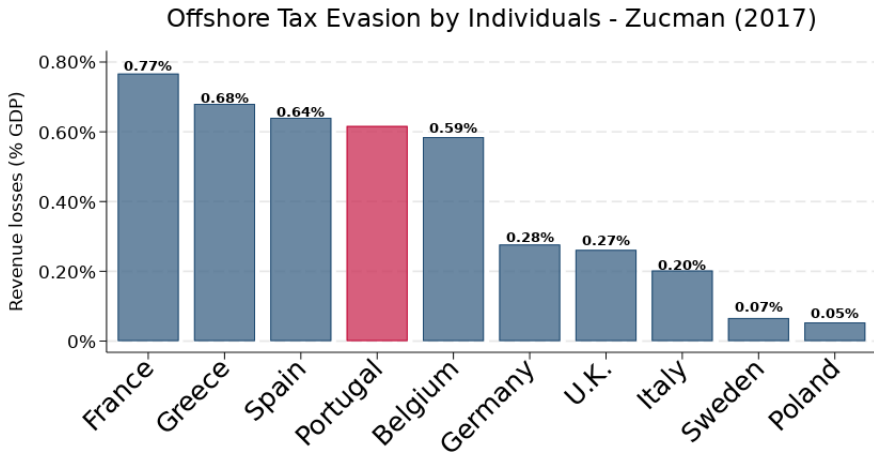
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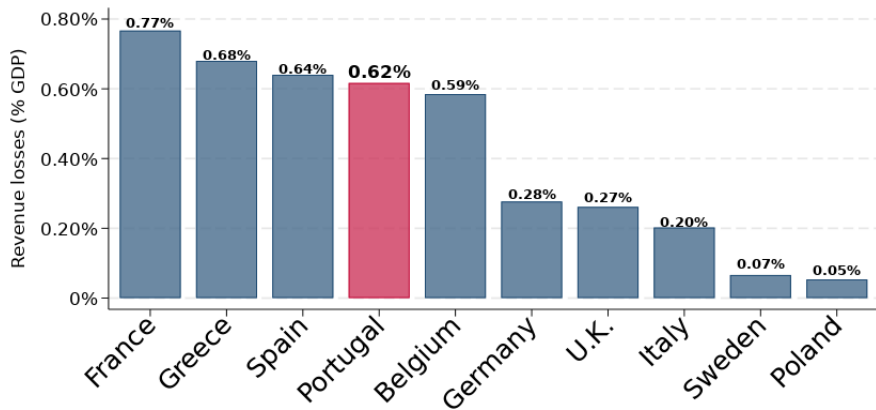


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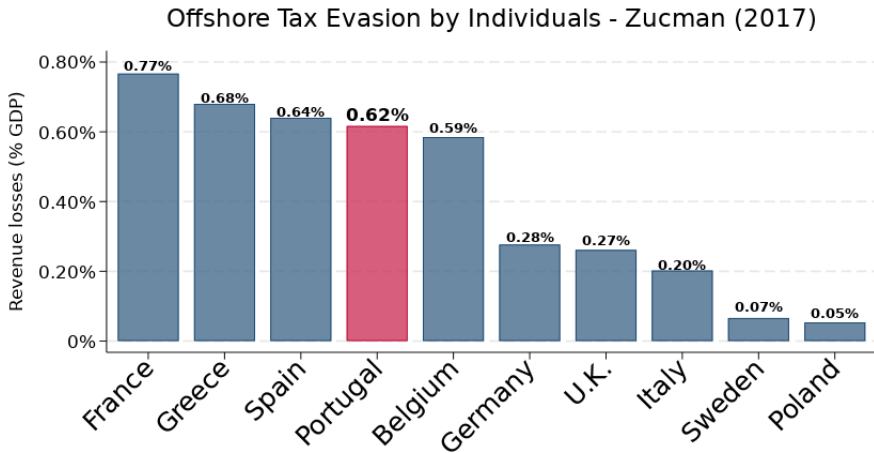


## THE SCALE OF TAX EVASION IN PERSPECTIVE

Offshore Tax Evasion by Individuals - Zucman (2017)



## THE SCALE OF TAX EVASION IN PERSPECTIVE



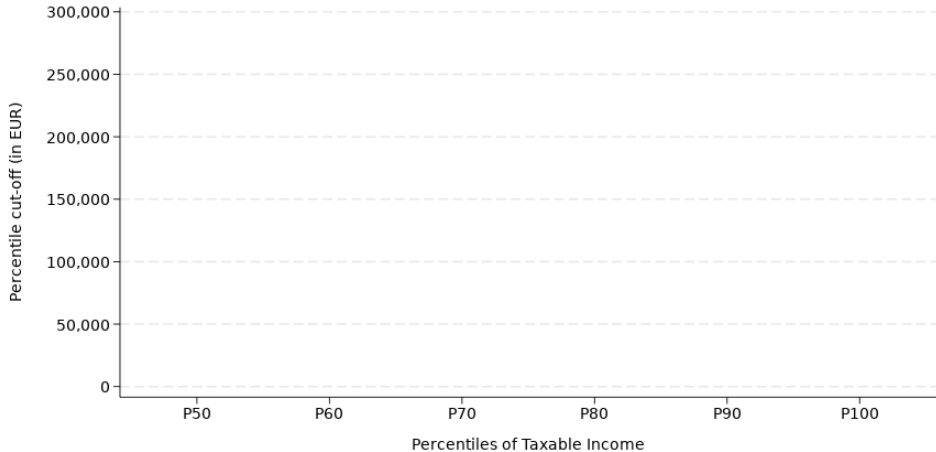
SOURCE: [Zucman \(2017\)](#) available on the EU Tax Observatory website [\[link\]](#)

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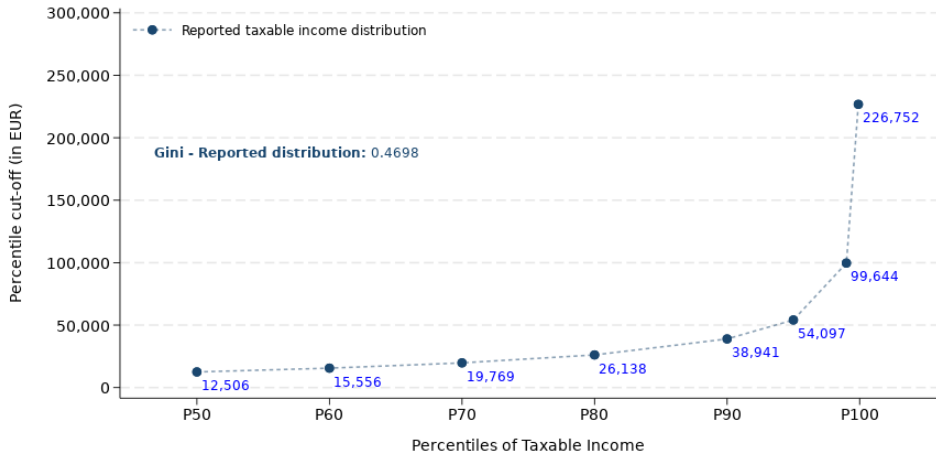
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	Million EUR	% of GDP	Million EUR	% of GDP
$\frac{1}{(1-\gamma) \cdot (1-\tau)} \cdot \Delta \text{Cons.}$	5,011	2.34	4,820	2.25
	(4,648   5,391)	(2.17   2.51)	(2,233   10,097)	(1.04   4.71)



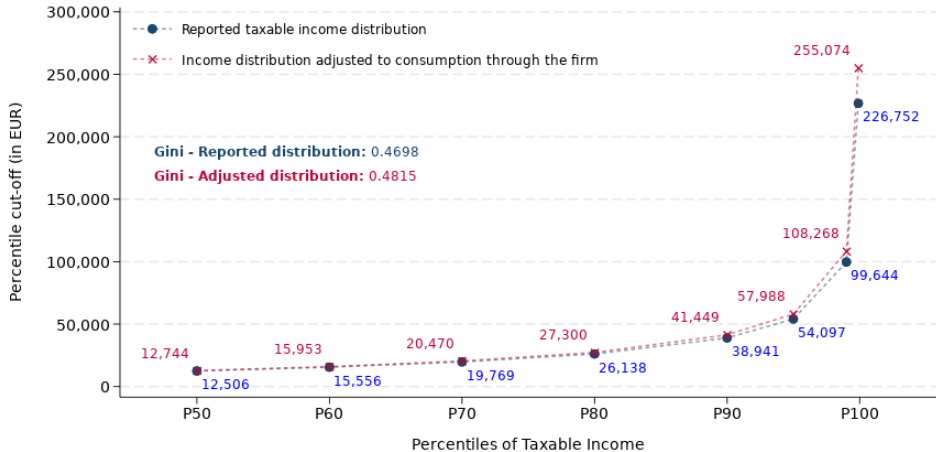
## DISTRIBUTIONAL IMPLICATIONS: REPORTED VS. ADJUSTED DISTRIBUTIONS



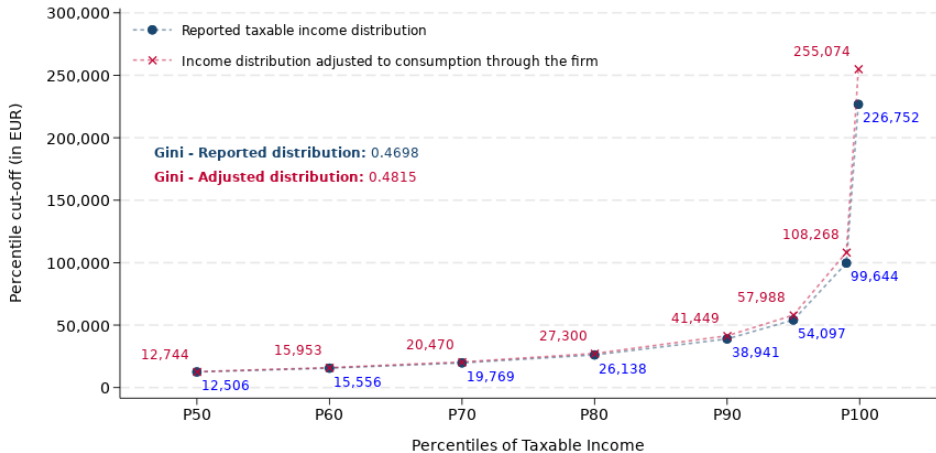
## DISTRIBUTIONAL IMPLICATIONS: REPORTED VS. ADJUSTED DISTRIBUTIONS



# DISTRIBUTIONAL IMPLICATIONS: REPORTED VS. ADJUSTED DISTRIBUTIONS



# DISTRIBUTIONAL IMPLICATIONS: REPORTED VS. ADJUSTED DISTRIBUTIONS



## MAIN TAKEAWAYS

- Business managers shift approximately 36% of their personal expenditures to the firm and 31% of their combined household expenditures. The shift is driven by expenditures on the border between business and consumption, while hard-to-shift expenditures do not react.
- Scope for consumption through the firm is greater among *small closely held firms*.
- The pattern of business expenditures is affected by personal consumption motives: business expenditures in hotels and restaurants increase 9.8% in the birthday month of the owner-manager and 6.1% in the birthday month of the owner-manager's spouse.
- Government revenue loss in PIT and VAT due to consumption through the firm amounts to **1% of the GDP**. Reallocating to reported income the share of personal consumption hidden within the firm plus the tax savings increases the Gini coefficient by one percentage point.

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Matt Smith, Danny Yagan, Owen Zidar, and Eric Zwick. The Rise of Pass-Throughs and the Decline of the Labor Share. *American Economic Review* (forthcoming), 2021.

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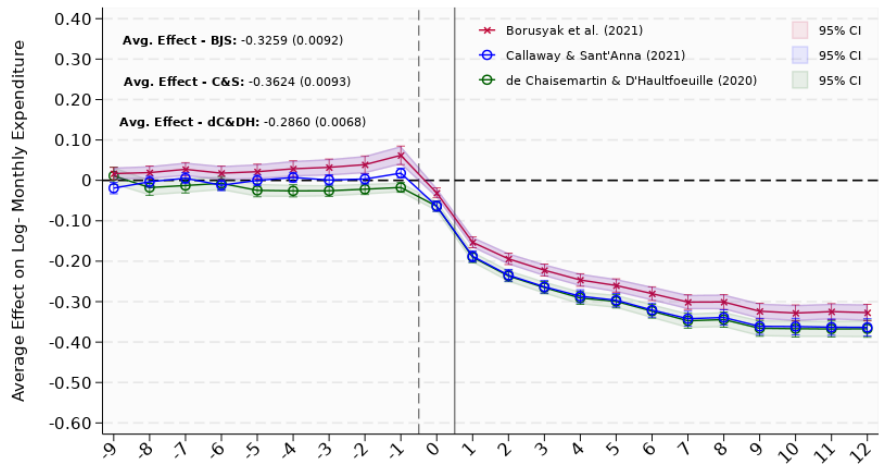
APPENDIX TO

THE FIRM AS TAX SHELTER

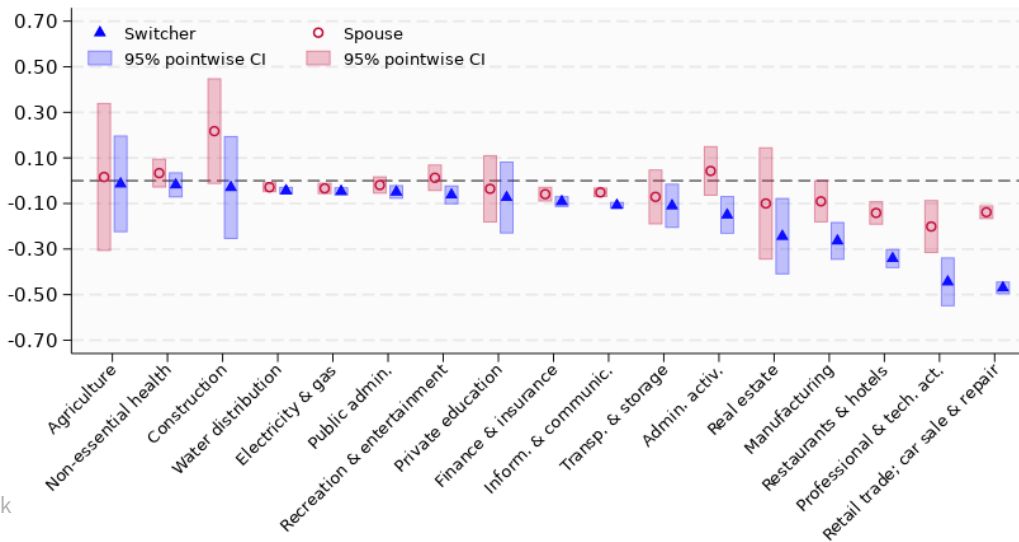
MICRO EVIDENCE AND AGGREGATE IMPLICATIONS OF CONSUMPTION THROUGH THE FIRM

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# ALTERNATIVE ESTIMATORS

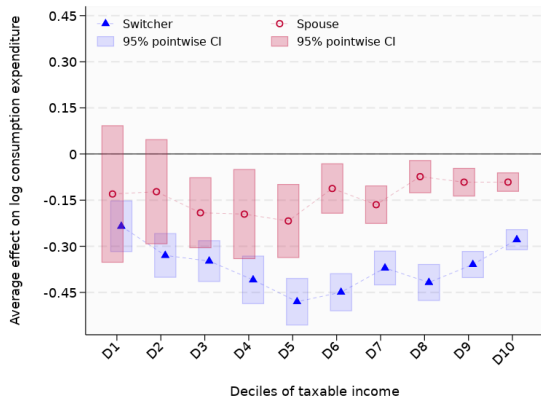


## AVERAGE EFFECTS ON ALL EXPENDITURE CATEGORIES — SWITCHER & SPOUSE

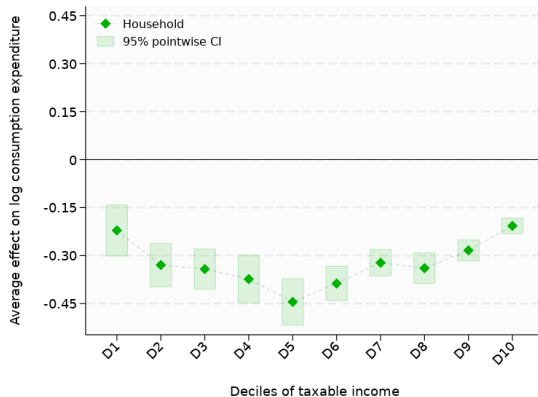


# EFFECTS BY DECILE OF HOUSEHOLD TAXABLE INCOME

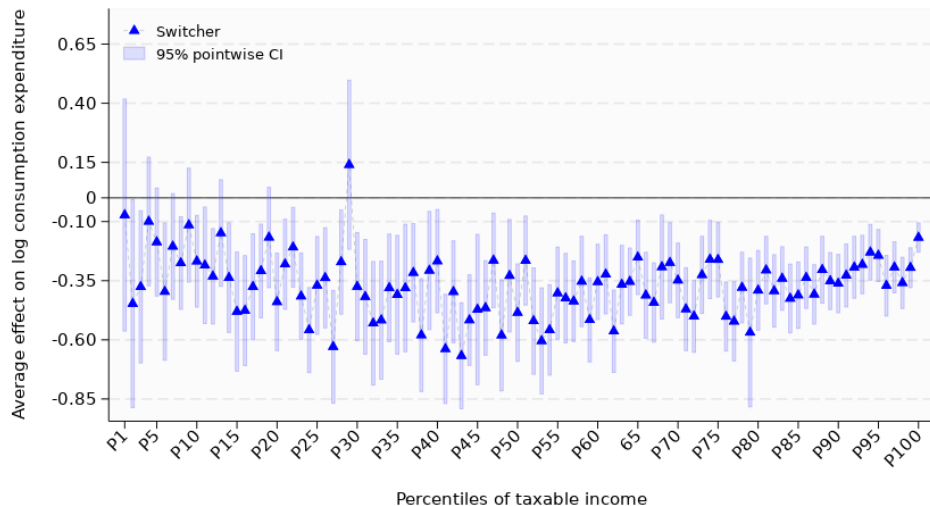
## Switcher & Spouse



## Household

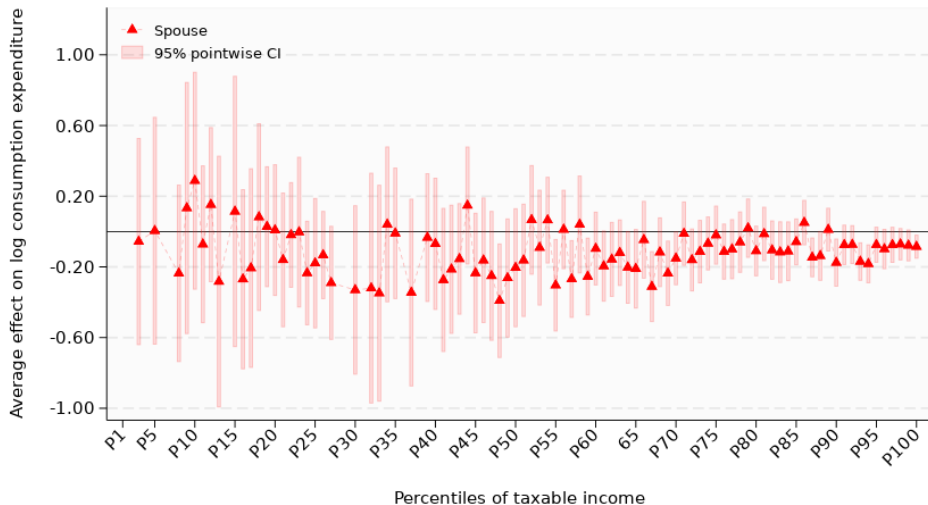


## EFFECTS BY PERCENTILE OF TAXABLE INCOME — SWITCHER

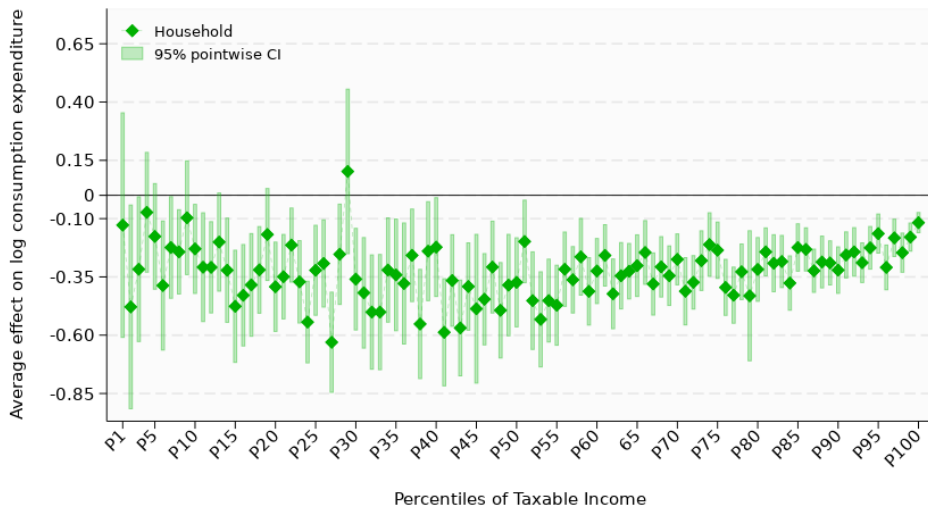




## EFFECTS BY PERCENTILE OF TAXABLE INCOME — SPOUSE

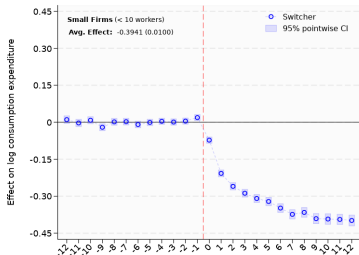


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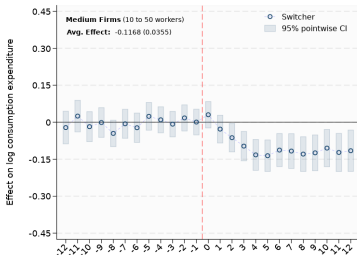


# EFFECTS BY FIRM SIZE: SMALL, MEDIUM AND LARGE FIRMS — SWITCHER

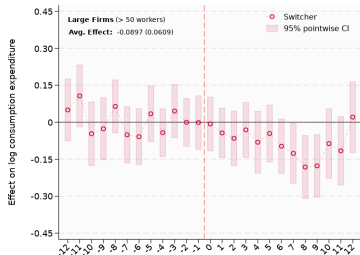
## Small firms (<10 workers)



## Med firms (10 to 50 workers)

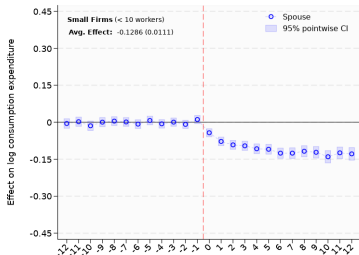


## Large firms (> 50 workers)

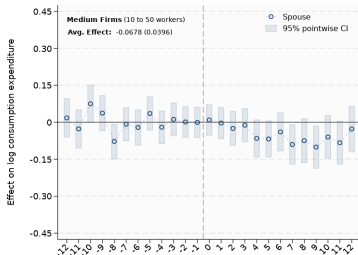


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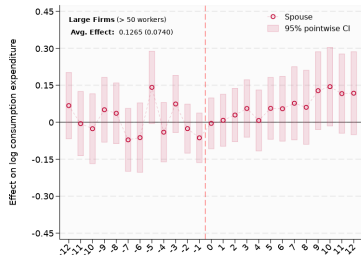
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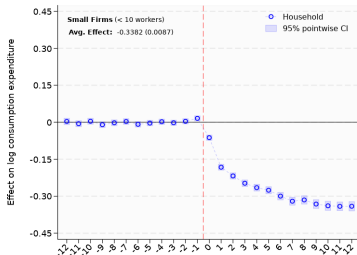


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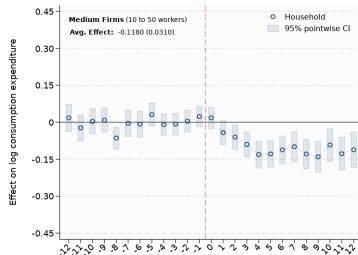


# EFFECTS BY FIRM SIZE: SMALL, MEDIUM AND LARGE FIRMS — **HOUSEHOLD**

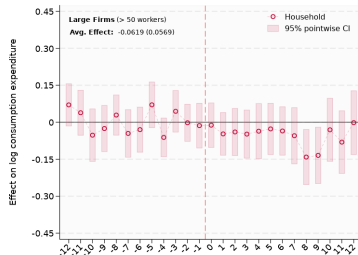
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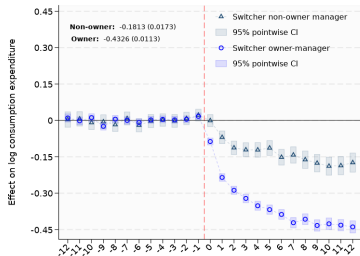


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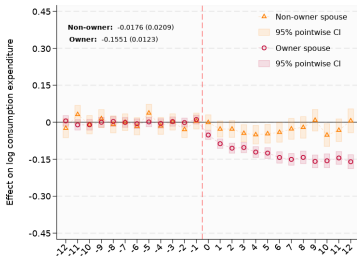


# EFFECTS BY FIRM OWNERSHIP: OWNER VS. NONOWNER BUSINESS MANAGER

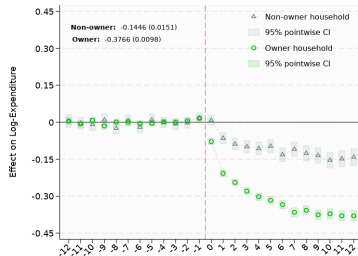
## Switcher



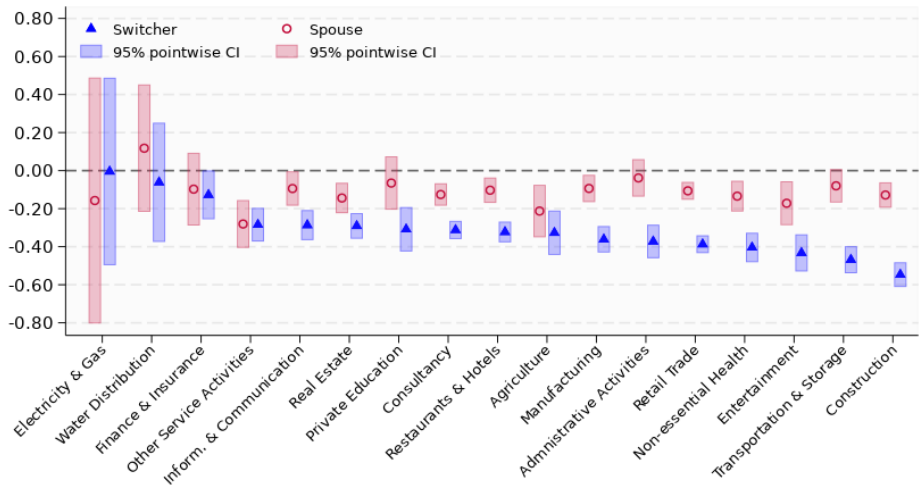
## Spouse



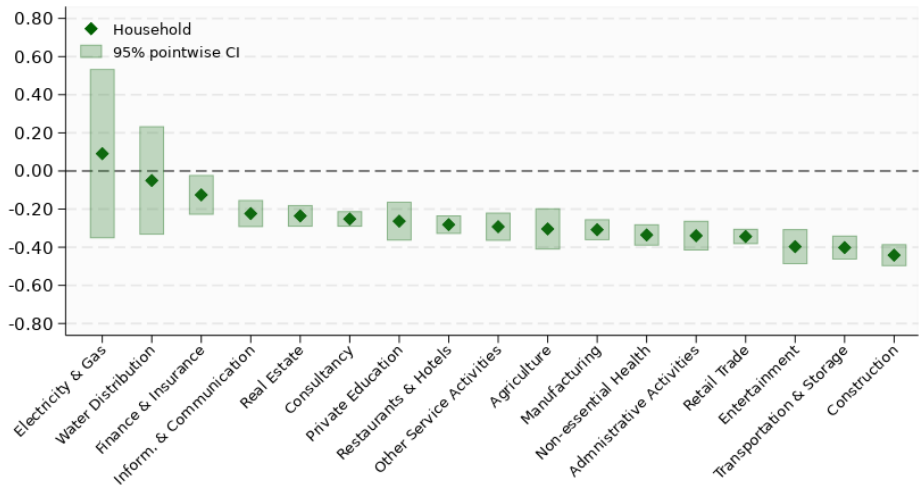
## Household



# AVERAGE EFFECTS BY INDUSTRY — SWITCHER AND SPOUSE

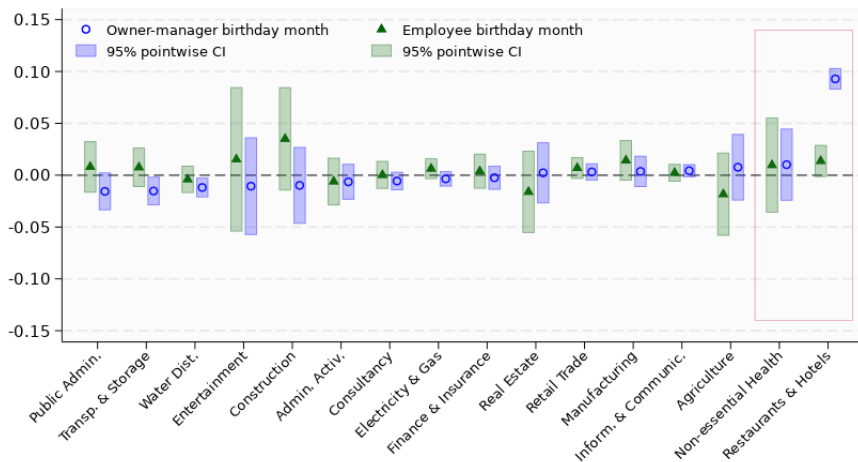


# AVERAGE EFFECTS BY INDUSTRY — HOUSEHOLD

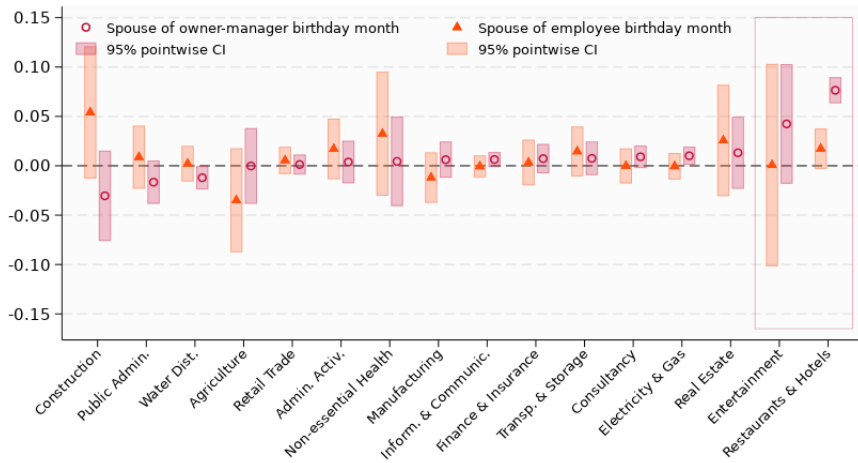




## EFFECTS ON BUSINESS EXPENDITURES AT BIRTHDAY MONTH — OWNER-MANAGERS VS. EMPLOYEES



## EFFECTS ON BUSINESS EXPENDITURES AT BIRTHDAY MONTH — SPOUSES



## IMPLICATIONS FOR TOP INCOME SHARES

	2018		2019	
	Reported	Adjusted	Reported	Adjusted
Bottom 50%	19.10	18.45	19.32	18.67
50%–90%	45.23	44.82	45.32	44.94
Top 10%	35.68	36.73	35.37	36.39
Top 5%	23.56	24.41	23.31	24.13
Top 1%	8.59	9.09	8.50	8.96
Top 0.1%	2.14	2.37	2.17	2.37

## DESCRIPTIVES FOR THE PANEL OF MONTHLY EXPENDITURES OF SWITCHERS

	Cohort 2016	Cohort 2017	Cohort 2018	Cohort 2019	Panel 2016–19
Age	39.80	40.02	39.81	39.72	39.84
Male	0.66	0.68	0.68	0.69	0.68
Married	0.57	0.56	0.53	0.50	0.54
Household size	2.47	2.41	2.33	2.27	2.37
Mean	25,659	26,859	26,370	25,659	25,587
P10	4,770	4,934	5,040	4,770	4,899
P50	14,981	14,999	14,686	14,981	14,625
P90	53,067	53,713	53,794	53,067	52,062
Top 1%	175,148	192,713	180,623	175,148	173,726

## DESCRIPTIVES FOR THE PANEL OF MONTHLY EXPENDITURES OF SWITCHERS

	<u>Role as employee</u>	<u>Role as manager</u>
Non-existing firm	–	0.75
Time operating	16.22	2.12
Same firm	–	0.05
Limited liability company	0.62	0.73
Single member company	0.13	0.20
Non-profit organization	0.03	0.04
Join-stock company	0.17	0.02
Others	0.05	0.01

## DESCRIPTIVES FOR THE PANEL OF MONTHLY EXPENDITURES OF SWITCHERS

	Role as employee	Role as manager
Average Number of Workers	113.95	7.31
< 10 Workers	0.58	0.96
$\geq 10$ and < 50 Workers	0.23	0.03
$\geq 50$ Workers	0.18	0.01
Mean of Sales	13,762.39	659.01
Mean of Assets	19,814.19	1,766.86
Mean of Profits	392.19	42.13

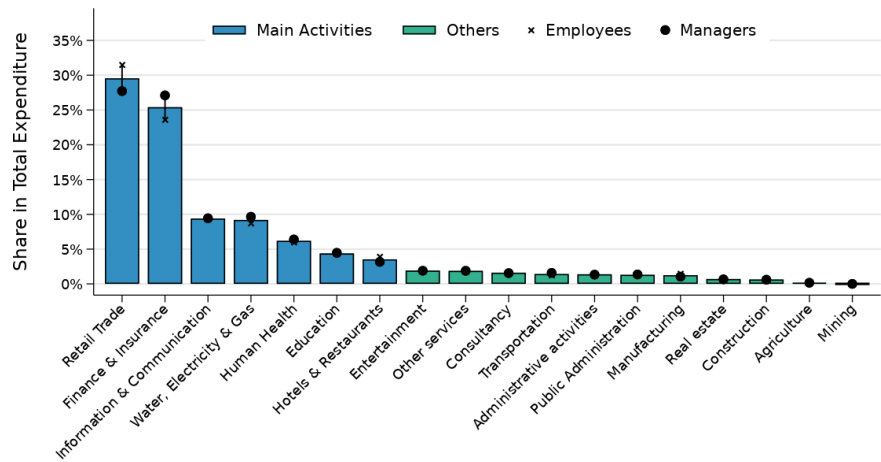
## DESCRIPTIVES FOR THE PANEL OF MONTHLY EXPENDITURES OF SWITCHERS

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	<u>Role as employee</u>	<u>Role as manager</u>
Retail Trade	0.21	0.19
Hotels & Restaurants	0.11	0.13
Construction	0.11	0.10
Manufacturing	0.13	0.08
Professional & Tech. Act.	0.08	0.09
Transportation	0.05	0.07
Human Health	0.05	0.05
Administrative Activities	0.06	0.04
Other Service Activities	0.03	0.05
Real Estate	0.03	0.05
Inform. & Communication	0.04	0.04
Entertainment	0.02	0.04
Other Sectors	0.08	0.06

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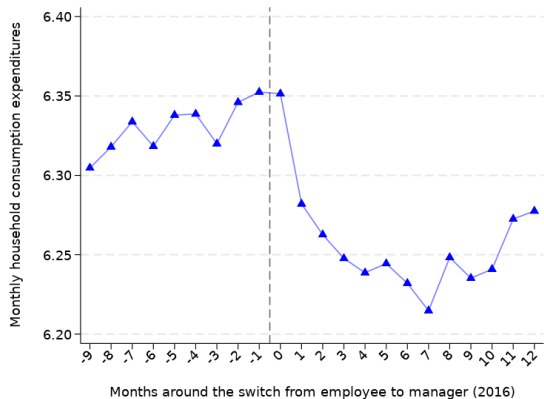
# HOUSEHOLD CONSUMPTION SHARES OF THE SWITCHERS



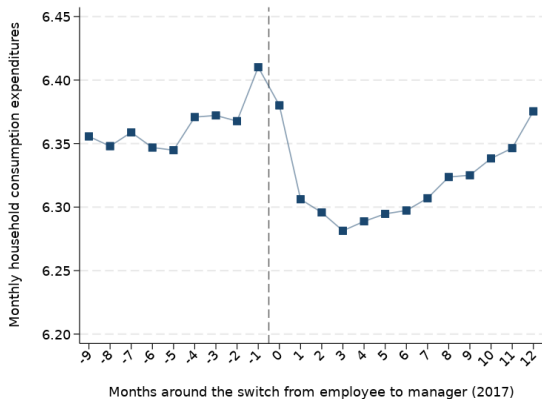


# RAW EVENT: 2016 AND 2017 COHORTS

## 2016 Cohort

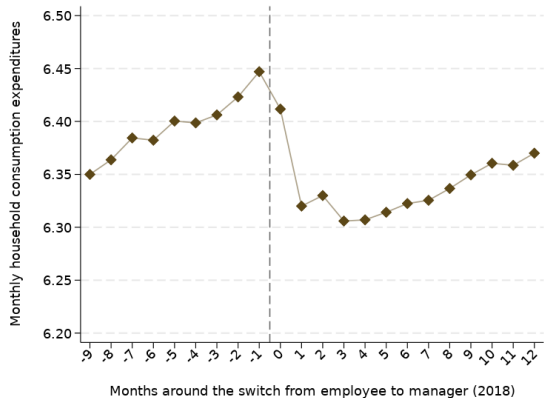


## 2017 Cohort

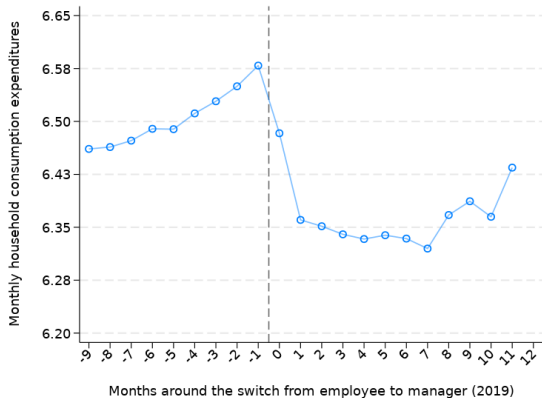


# RAW EVENT: 2018 AND 2019 COHORTS

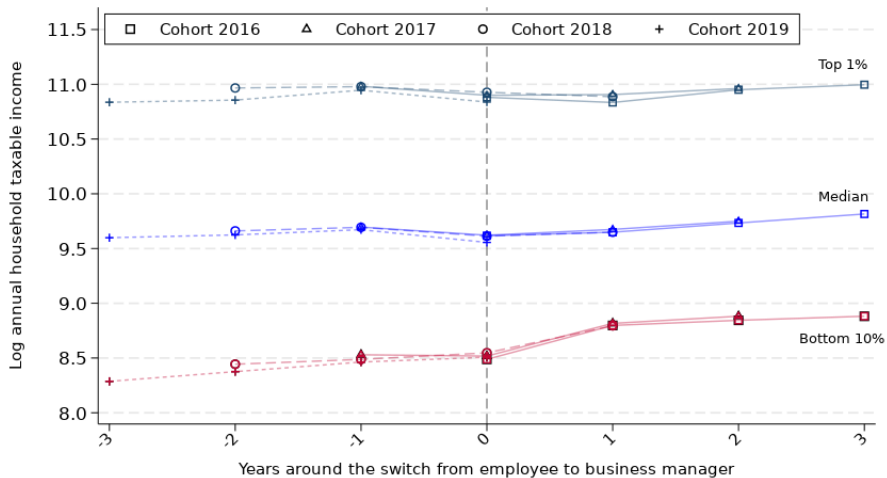
## 2018 Cohort



## 2019 Cohort

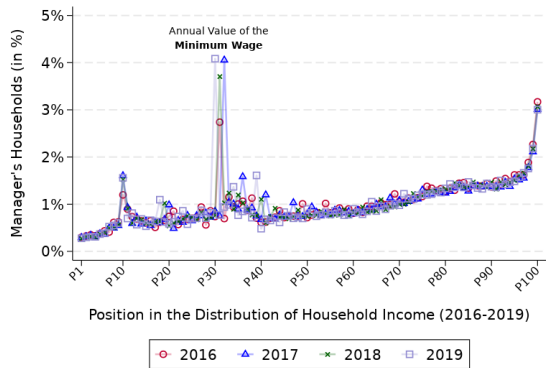


## EVOLUTION OF THE TOP 1%, MEDIAN AND BOTTOM 10%

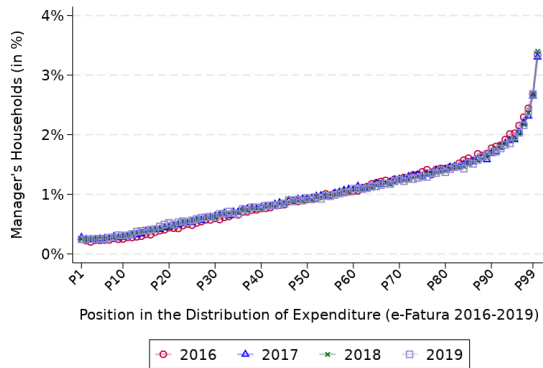


# POSITION OF BUSINESS MANAGERS IN THE POPULATION'S DISTRIBUTION OF INCOME AND EXPENDITURE

## Income distribution

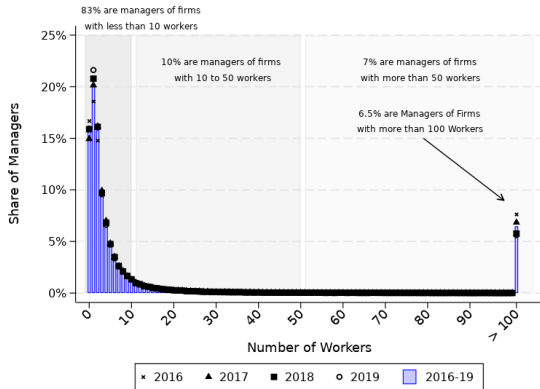


## Expenditure distribution

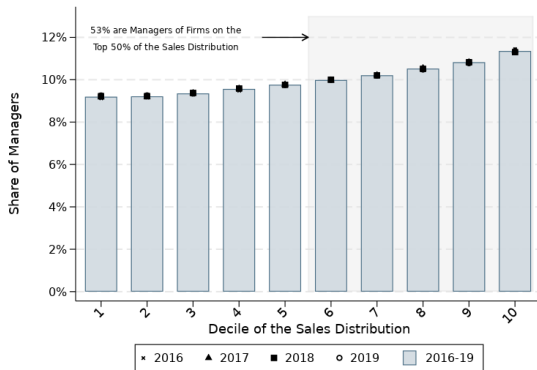


# DISTRIBUTION OF THE POPULATION OF BUSINESS MANAGERS BY FIRM SIZE

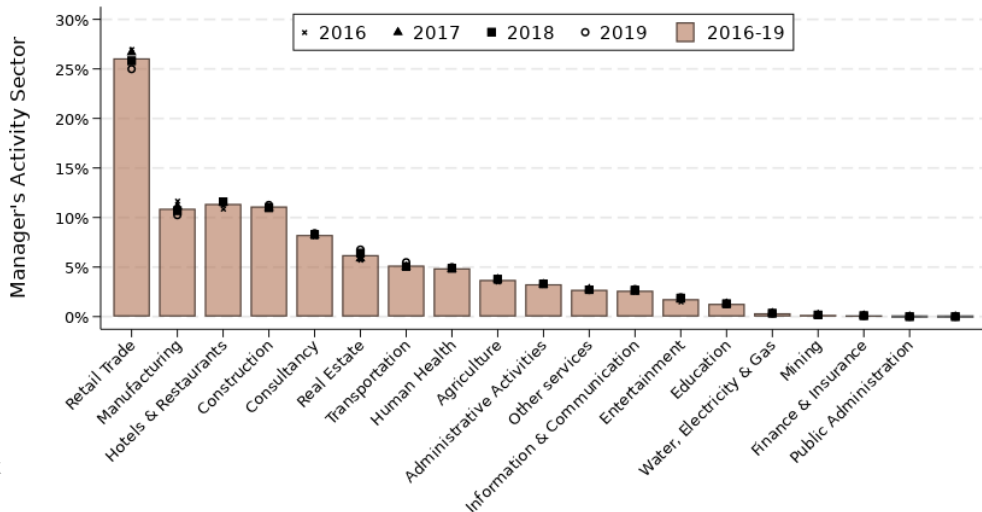
## Number of workers



## Volume of sales

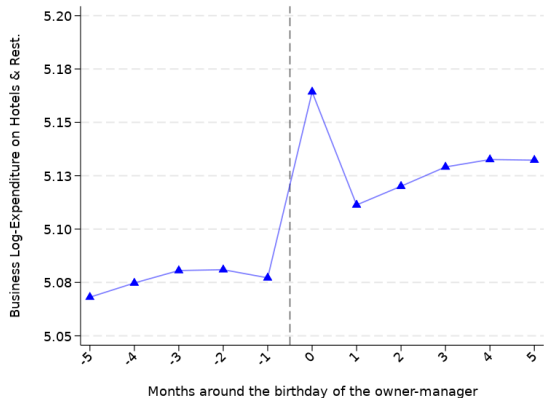


## DISTRIBUTION OF THE POPULATION OF BUSINESS MANAGERS BY INDUSTRY

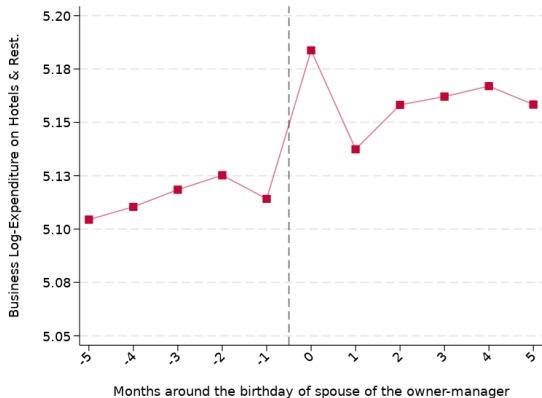


# BUSINESS EXPENDITURES IN HOTELS & RESTAURANTS: OWNER-MANAGERS

## Birth month of the owner-manager

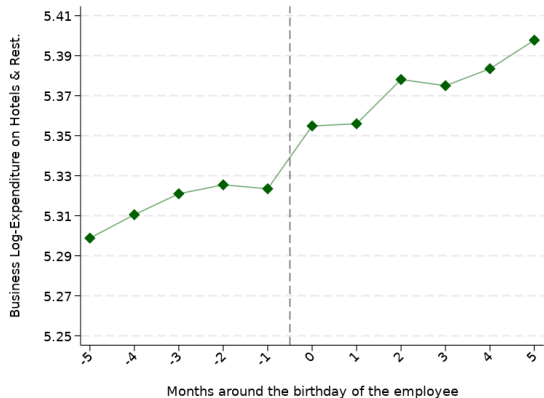


## Birth month of the owner-manager's spouse

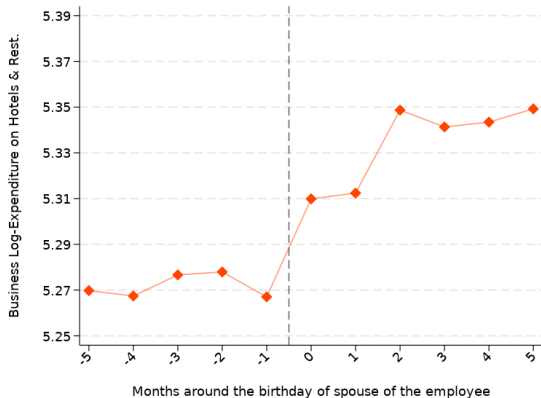


# BUSINESS EXPENDITURES IN HOTELS & RESTAURANTS: EMPLOYEES

## Birth month of the employee



## Birth month of the employee's spouse





## ANECDOTAL EVIDENCE COLLECTED FROM PRESS RECORDS

- **United States:** *New York Times*, *ABC News*
- **France:** *Libération* (in French)
- **Spain:** *The Guardian*
- **Portugal:** *Expresso* (in Portuguese)

