

Does Self-Employment Respond to Simpler Fiscal Incentives? Evidence from France

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Motivation and Institutional Background

- France is a good quasi-laboratory: different self-employment regimes, differ by financial incentives and administrative simplicity.

	(1) Standard Regime	(2) Simplified Regime	(3) Super simplified Regime
Tax: Base	Net business income	Gross revenues \times (1- rebate)	Gross revenues
	$(1 - c)y$	$y(1 - \mu)$	y
Rate	Income tax + SS	Income tax + SS	Flat rate
Admin Costs	High	Low	Very low
Eligibility Threshold	Very high	\approx 32K (services) \approx 80K (retail)	\approx 32K (services) \approx 80K (retail)

- Small scale, low c , low investment and capital intensive businesses should choose simplified.

Research Questions

- ① How strongly do self-employed respond to financial incentives?
- ② Is there misreporting or income shifting?
- ③ Does administrative simplicity matter?

Data

- **Tax returns** from the French Internal Revenue Service 1994-2012.
 - ▶ Annual sample of 500,000 households.
 - ▶ Full population data for 2011 (36 million households).
 - ▶ Extending right now to 2007-2012.
- All income streams (individual & household) + demographics.
- Panel of population of all businesses from registry of all businesses.

Main Findings

- 1 Significant bunching at the eligibility thresholds
 - ▶ that moves when thresholds move.
 - ▶ groups with additional income respond more (salaried, retired)
- 2 Income shifting between self-employed members of same household.
- 3 Learning & inertia in regime and income choices following changes.
- 4 Small hassle costs are enough to explain full extent of bunching.

Related Literature

Taxation and entrepreneurship: Cullen and Gordon (2006,2007), Gentry and Hubbard (2000), Bruce (2000).

Determinants of entrepreneurship: Hamilton (2000), Schoar (2010), Adelino, Schoar and Severino (2015), Schmalz, Sraer, and Thesmar (2016).

Bunching methods: Saez (2010), Chetty *et al.* (2011), Kleven and Waseem (2013), Kleven (2016), Best *et al.* (2015), Best and Kleven (2016), Best *et al.* (2015), Chetty *et al.* (2013).

Empirical Studies with French Tax Data: Piketty (...), Landais (2013), Garbinti *et al.* (2016, 2017).

Outline of this Talk

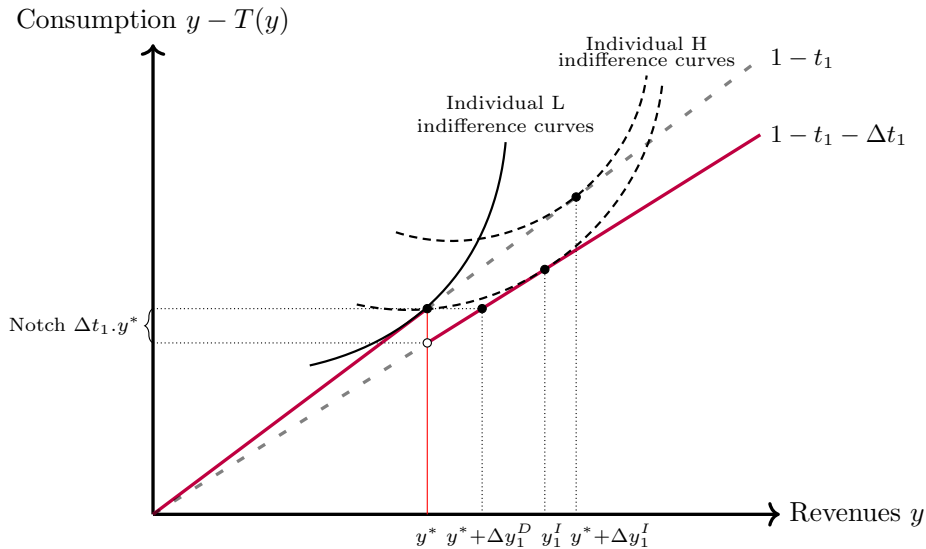
- ① Behavioral Responses to Thresholds
- ② Dynamic Adjustments: Learning and Inertia
- ③ Elasticity Estimation and Hassle Costs

Behavioral Responses to the Eligibility Thresholds

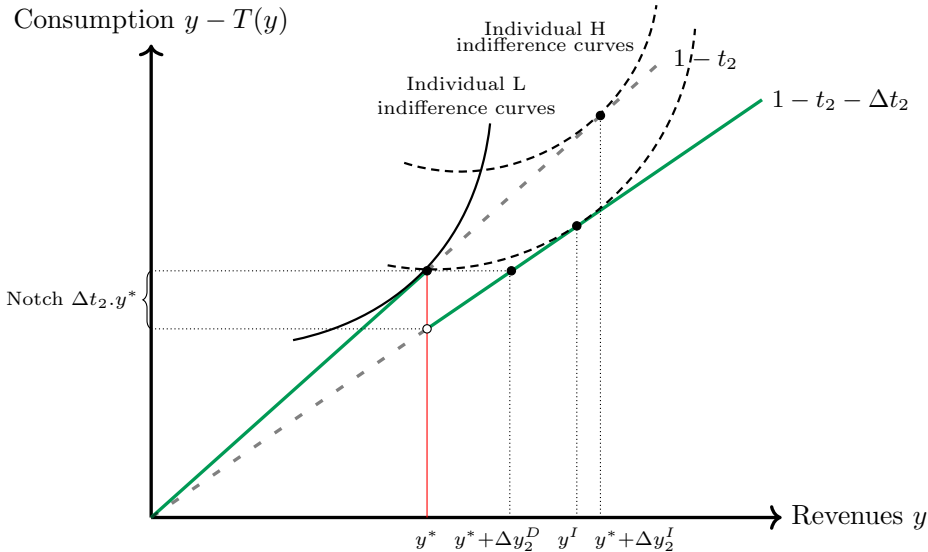
Modeling the Discontinuity at Eligibility Thresholds

- Eligibility thresholds create tax and administrative “notches.”
 - ▶ Many things change, unlike at standard tax notches.
 - ▶ Total operating costs: $c_i \cdot y_i$ in regime i .
 - ▶ Tax rates and tax base (differ across people, peculiarity of French system!).
 - ▶ Hassle costs a_i .
- Trick: convert all into a total “tax” liability at revenues y :
 $T(y) = ty + (\Delta T + \Delta ty)I(y > y^*)$.
- Can express: $t = t(c_i, \tau^y, \tau_m^{ss}, \mu)$, $\Delta t = \Delta t(c_i, \tau^y, \tau^{ss}, \mu)$, $\Delta T = \Delta a$.
- These policy parameters differ across people (by activity type or tax bracket).
 - ▶ Δt higher for higher tax bracket agents \Rightarrow larger notch.

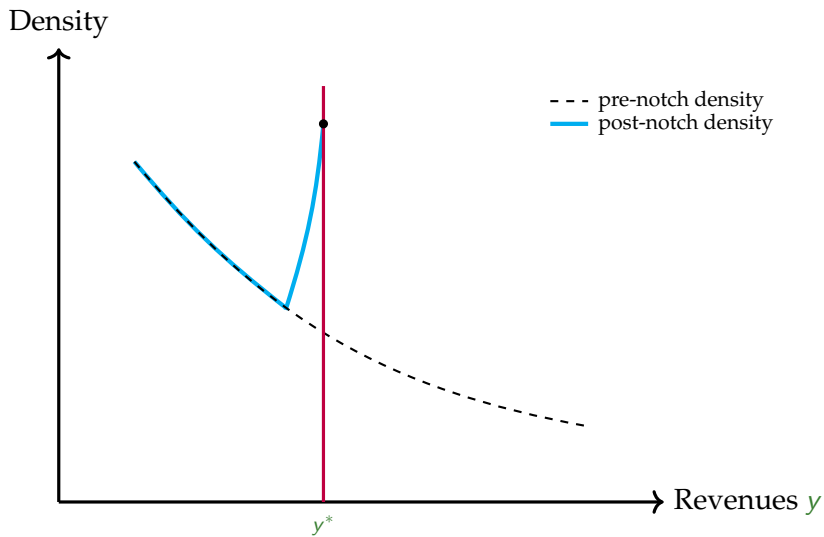
Different Notches for Different People...



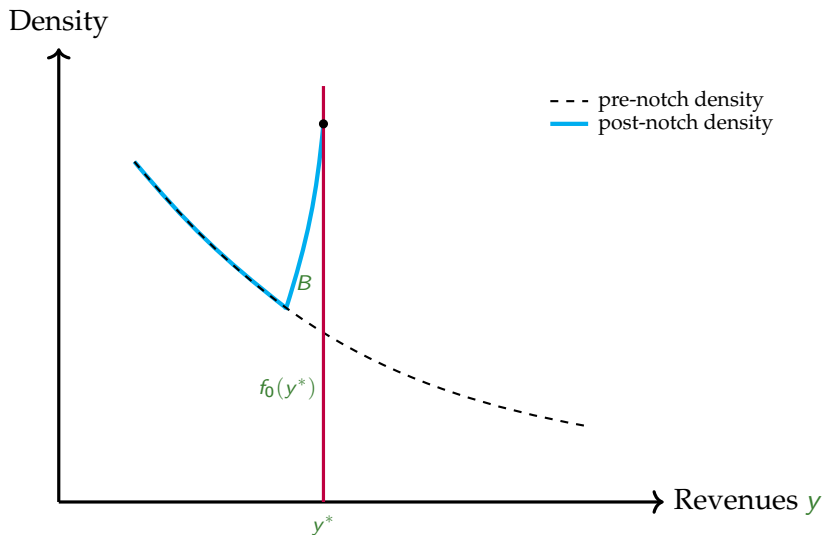
... by Activity and Tax Rates.



Notch Generates Excess Mass to the Left



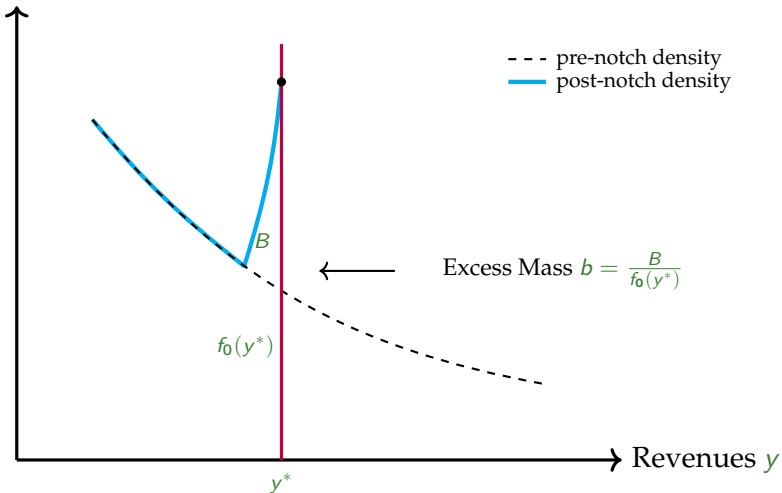
Notch Generates Excess Mass to the Left



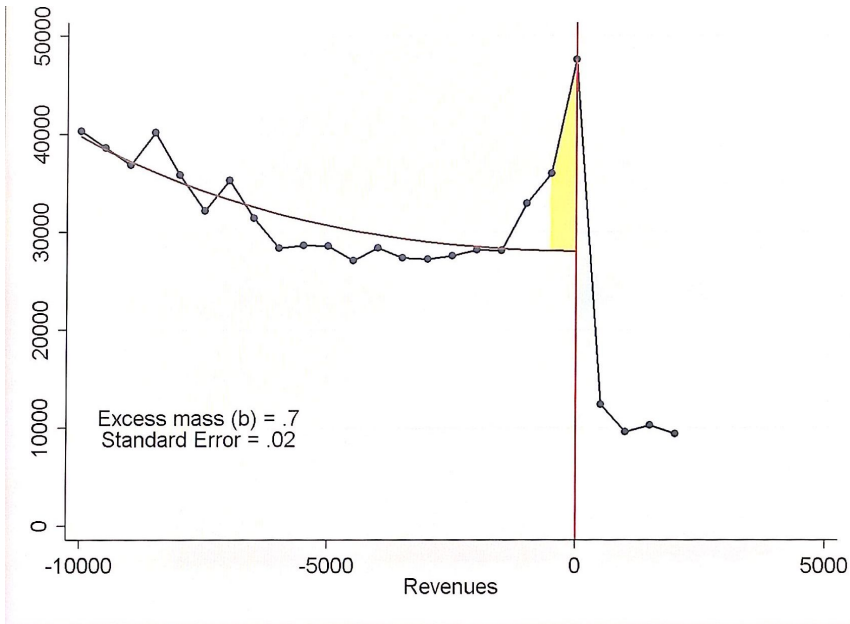
Notch Generates Excess Mass to the Left

Density

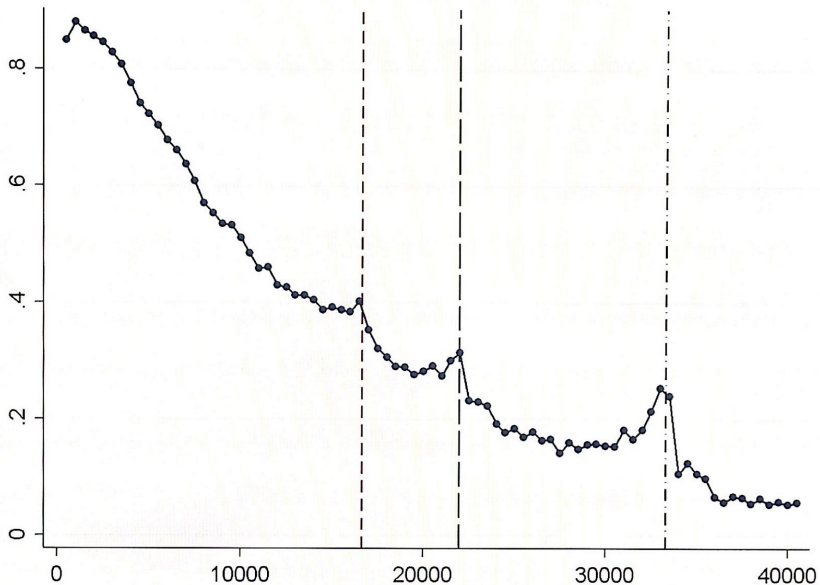
- - - pre-notch density
— post-notch density



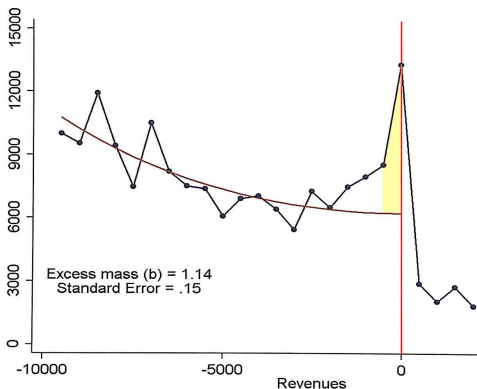
Left-side Mass at Eligibility Threshold 1999-2012



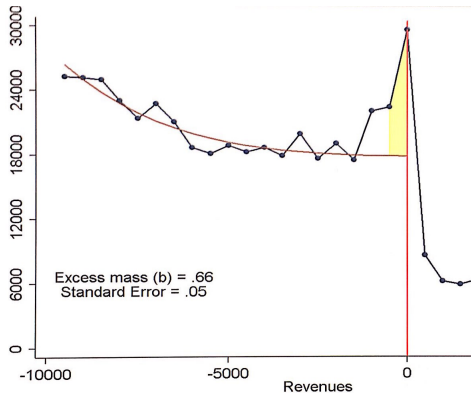
Regime Choice Response: % of All Self-Employed in Any Simplified Regime



Stronger Bunching for Those with Additional Salaried Income

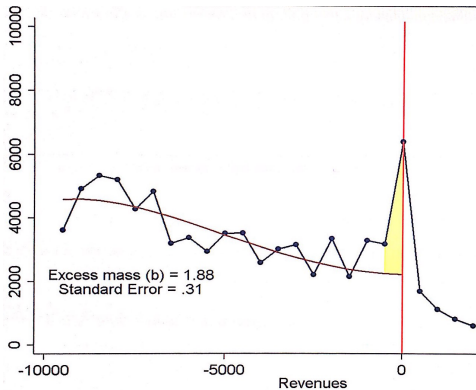


(a) Salaried: $b = 1.14$

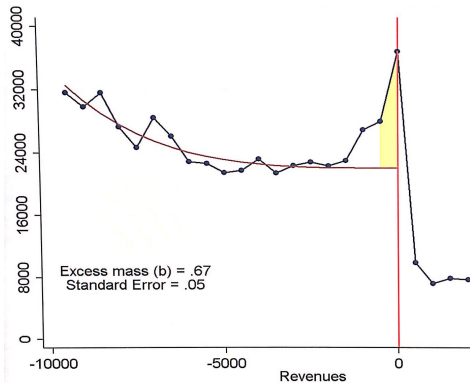


(b) Non-Salaried: $b = 0.66$

... or Retirement Income

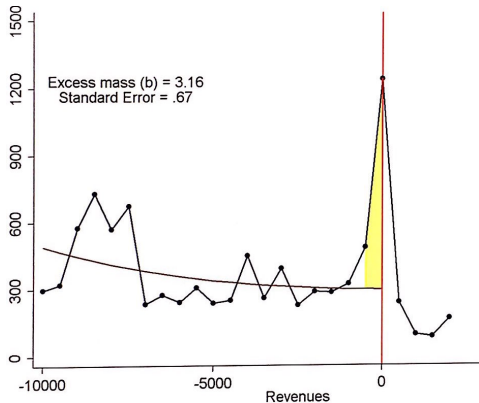


(c) Retired: $b = 1.9$

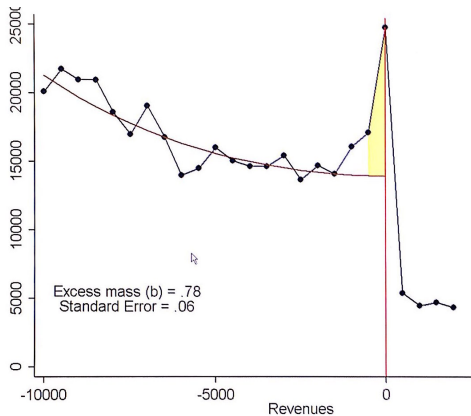


(d) Non-Retired: $b = 0.7$

Bunching in Households with One vs. Two Self-Employed

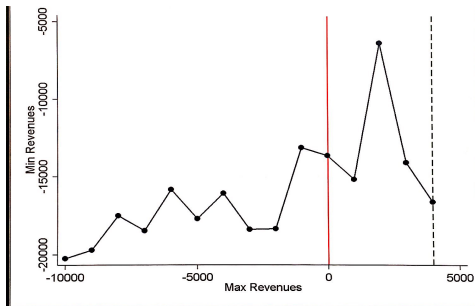


(e) Agents in HHs with two self-employed earners: $b = 3.2$

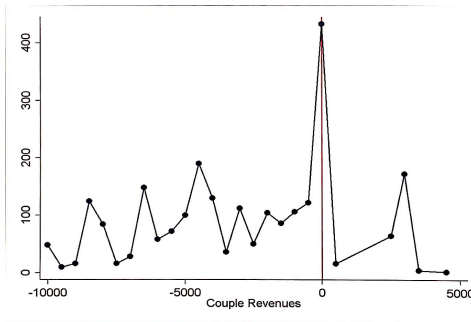


(f) Agents in HHs with one self-employed earner: $b = 0.8$

Shifting Between Household Members



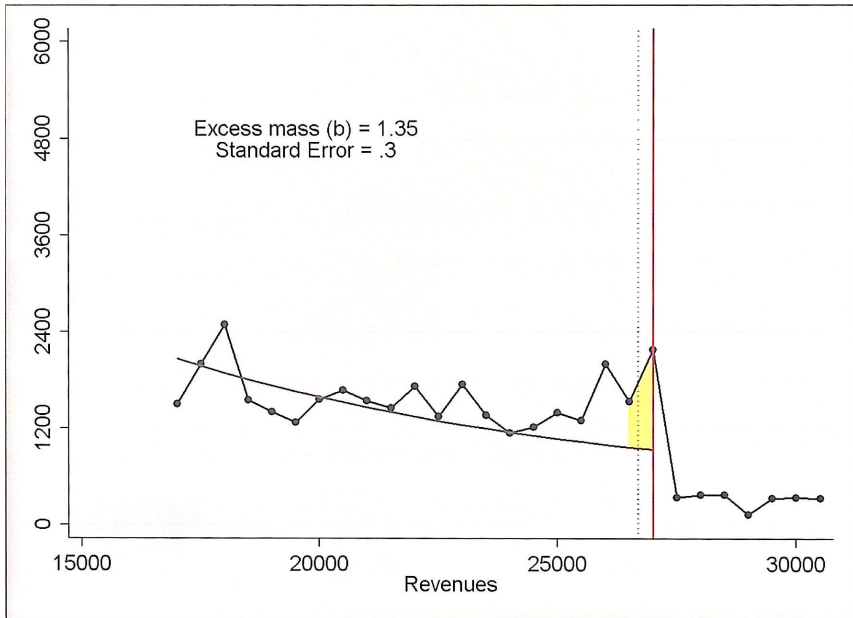
(g) Revenues of Lower Earner Against Revenues of Higher Earner



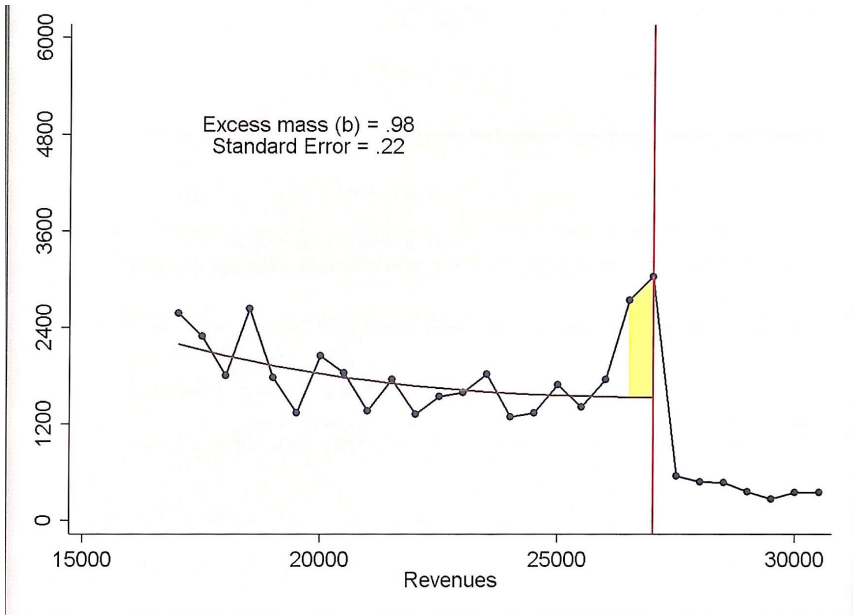
(h) Sum of Revenues

Dynamic Adjustments: Learning and Inertia

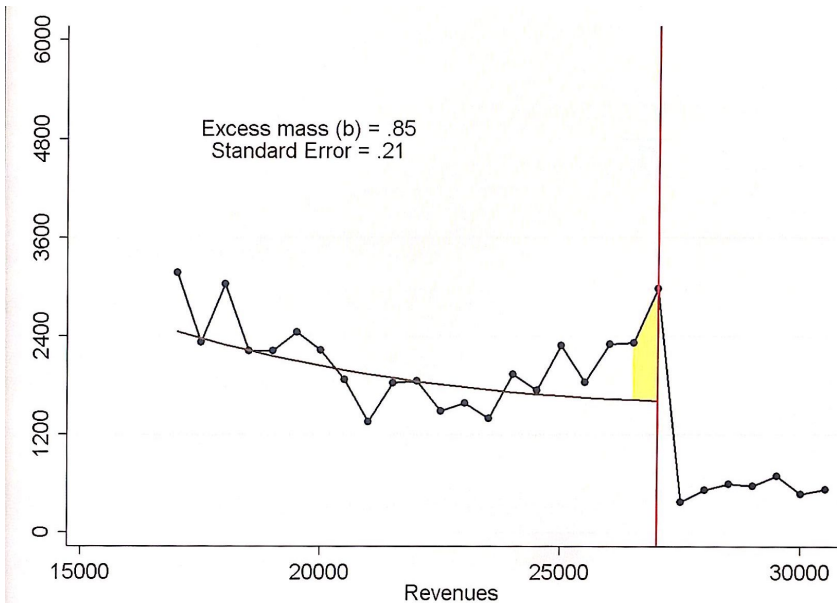
2003



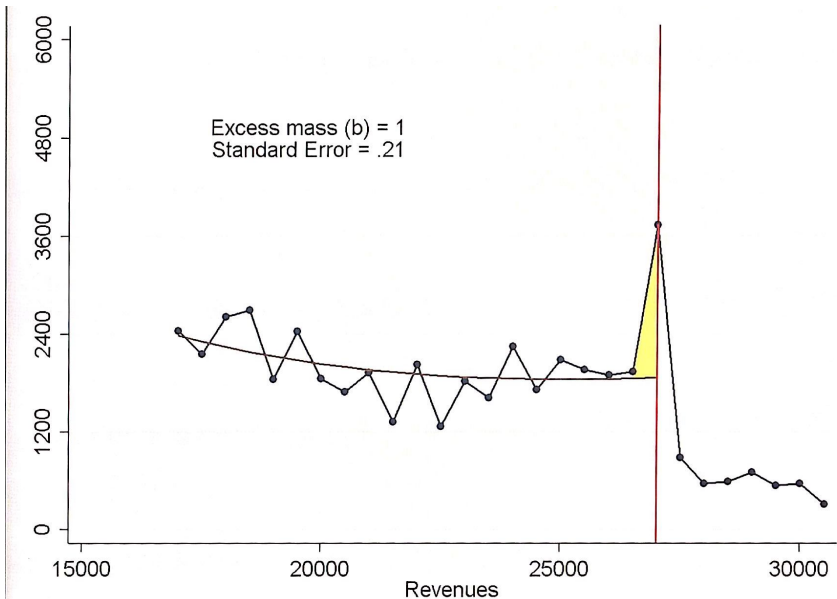
2004



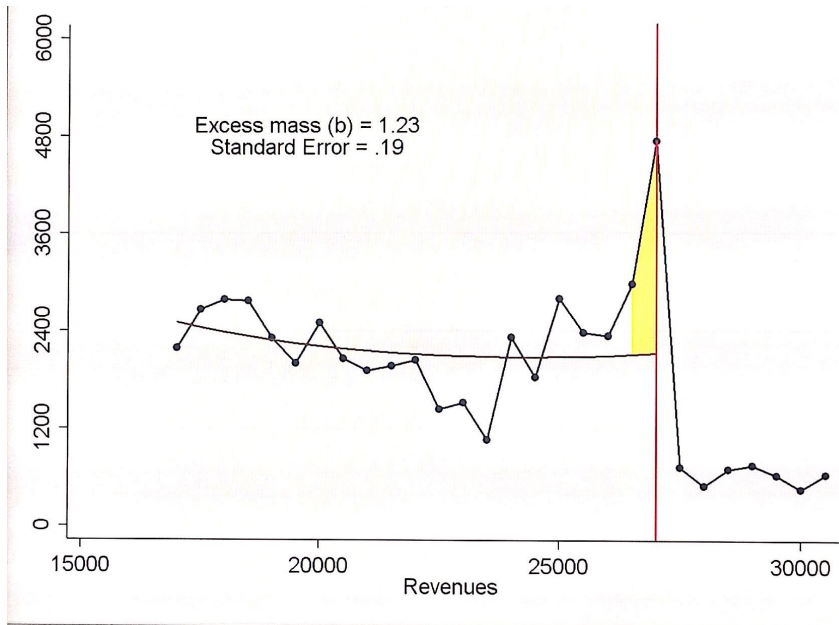
2005



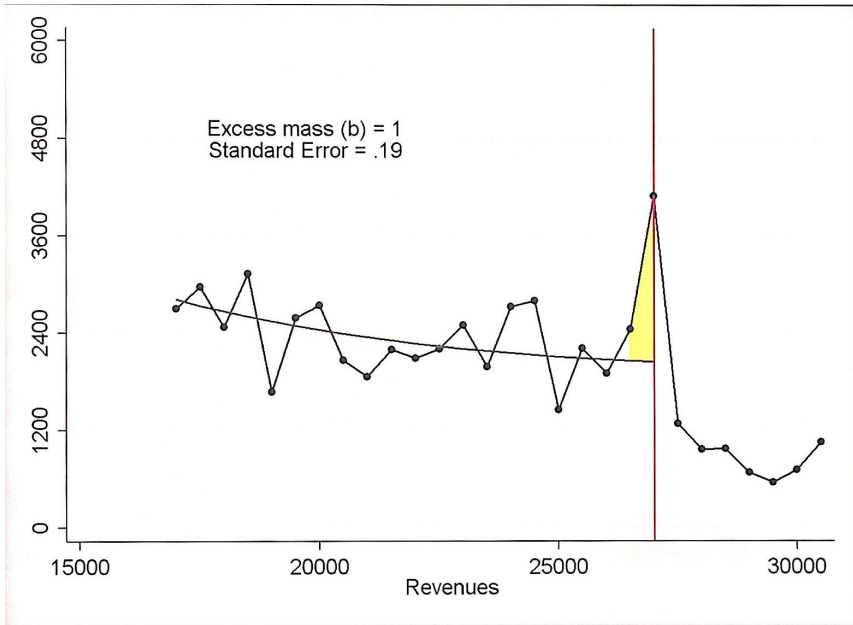
2006



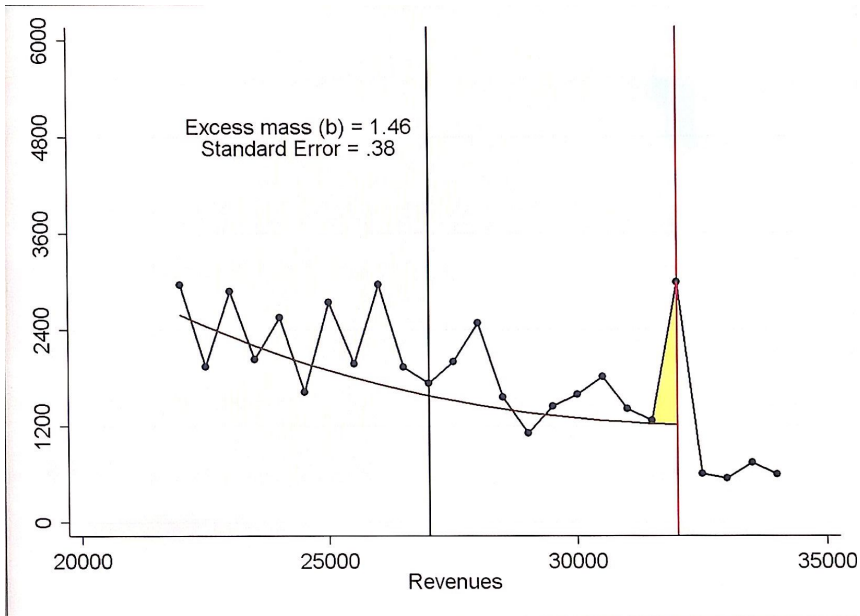
2007



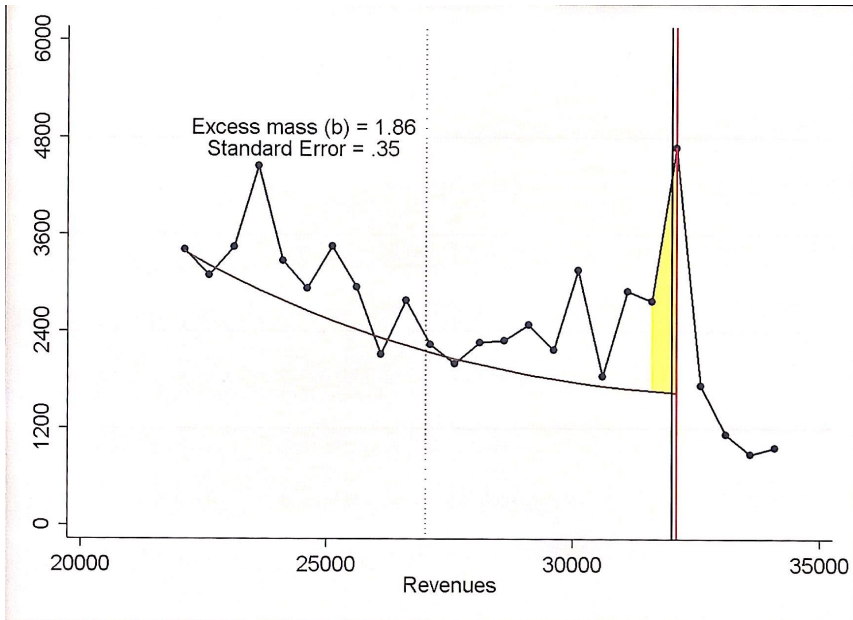
2008



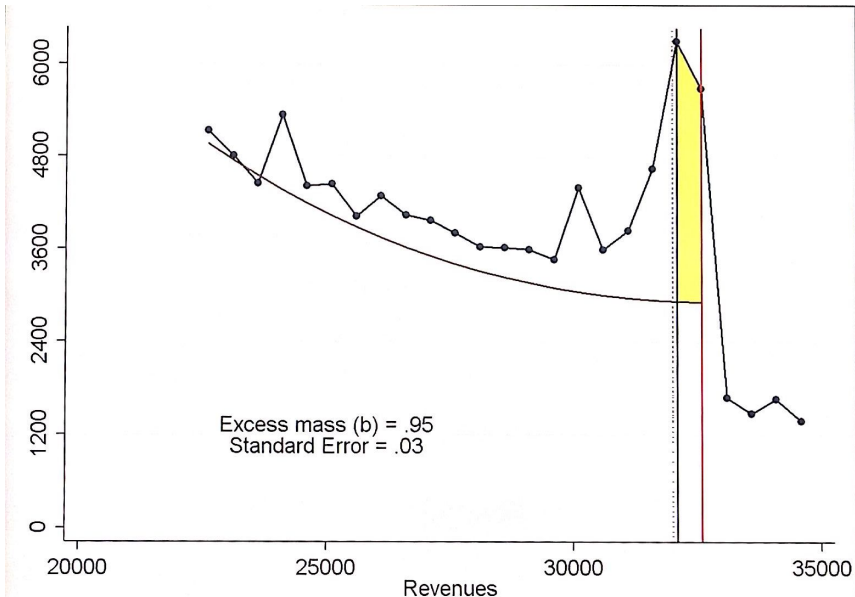
2009 (New Regime Introduction and Threshold Change)



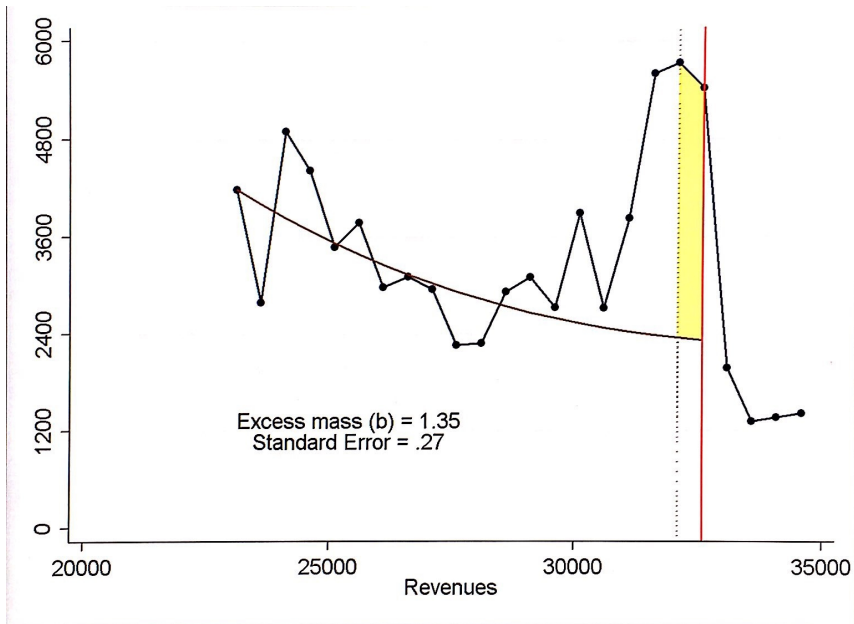
2010



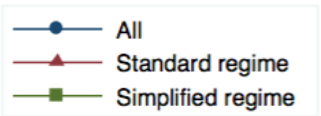
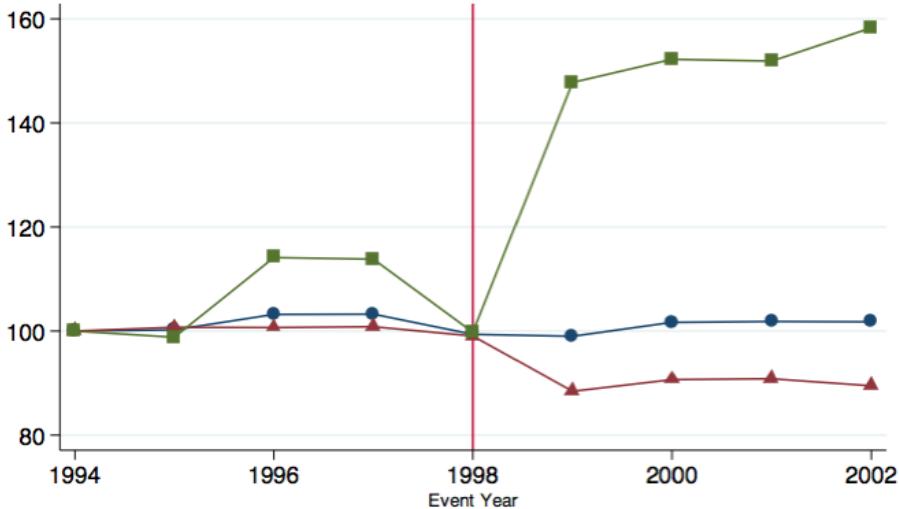
2011 (Small Threshold Change, Bunching at OLD threshold)



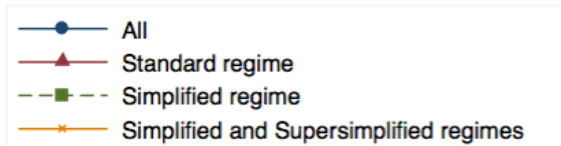
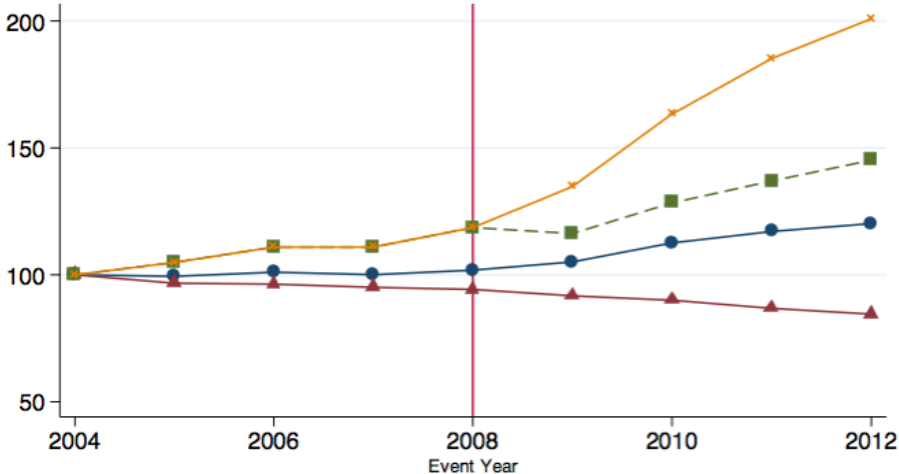
2012 (Still Bunching at Old Threshold)



The 1999 reform: Expansion of an EXISTING Regime

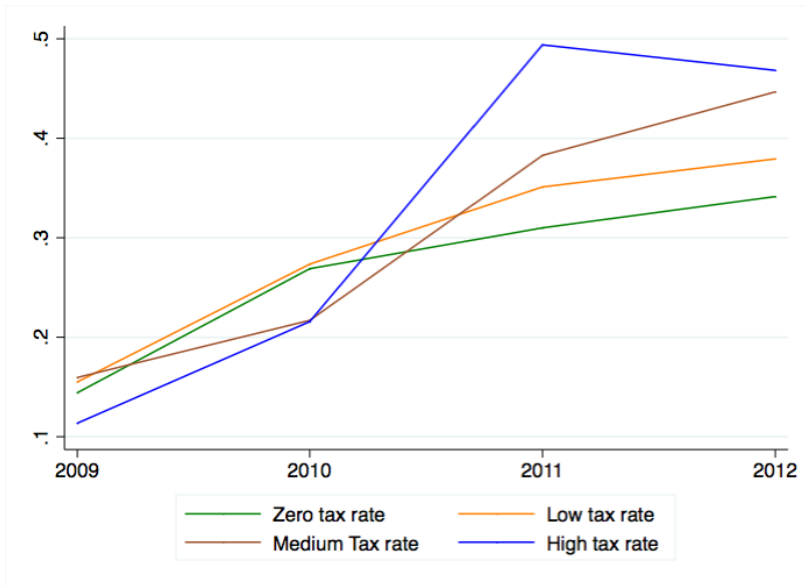


The 2008 reform: Creation of NEW Super-Simplified Regime



Progressive Learning?

% choosing SS regime over S Regime (dominated!) by tax brackets.



Elasticity Estimation

Reduced Form Elasticity Approximation

- Map excess mass B to earnings response Δy^* :

$$B \approx f_0(y^*)\Delta y^*$$

- Tax liability in simplified & standard regime, (or super simplified & standard): $T(y) = ty + (\Delta T + \Delta ty)I(y > y^*)$
- Implicit average tax between y^* and $y^* + \Delta y^*$:

$$t^* = \frac{T(y^* + \Delta y^*) - T(y^*)}{\Delta y^*} \approx t + \frac{\Delta t}{\Delta y^*}y^* + \frac{\Delta T}{\Delta y^*}$$

- Reduced form

$$\varepsilon_R \equiv \frac{\Delta y^*}{y^*} \frac{1 - t^*}{\Delta t^*} = \frac{\Delta y^*}{y^*} \frac{1 - t - \frac{\Delta t}{\Delta y^*}y^* - \frac{\Delta T}{\Delta y^*}}{\frac{\Delta t}{\Delta y^*}y^* + \frac{\Delta T}{\Delta y^*}}$$

Structural Elasticity Estimation

- ▶ Average Tax Rates

- Parametric form for utility: $u = c - \frac{\theta}{1+1/\varepsilon} \left(\frac{y}{\theta}\right)^{1+1/\varepsilon}$

- Structural elasticity solves:

$$\frac{1}{1 + \frac{\Delta y^*}{y^*}} \left[1 + \frac{\Delta T / y^*}{1 - t} \right] - \frac{1}{1 + 1/\varepsilon} \left[\frac{1}{1 + \frac{\Delta y^*}{y^*}} \right]^{1+1/\varepsilon} - \frac{1}{1 + \varepsilon} \left[1 - \frac{\Delta t}{1 - t} \right]^{1+\varepsilon} = 0$$

- Step 1: Benchmark without hassle costs. What is ε (and ε_R)?
- Step 2: How large do hassle costs have to be to rationalize full response to the threshold?

Benchmark Elasticity Estimates if No Hassle Costs

Activity Type	Cost (% of rebate)	Tax bracket	Earnings Response Δy^*	ATR Jump Δt^*	Reduced-Form Elasticity e_R	Structural Elasticity e
I&C Services	0.5	1	730	0.33	0.07*** (0.018)	0.04*** (0.009)
		2	1,090	0.36	0.14*** (0.021)	0.07*** (0.010)
		3	1,930	0.41	0.39*** (0.062)	0.18*** (0.027)
		All			0.19*** (0.031)	0.09*** (0.015)
Non Commercial	0.1	1	1,100	0.70	0.09** (0.037)	0.05*** (0.018)
		2	1,240	0.76	0.10*** (0.017)	0.05*** (0.008)
		3	2,420	0.89	0.36*** (0.040)	0.17*** (0.017)
		All			0.21*** (0.030)	0.10*** (0.015)

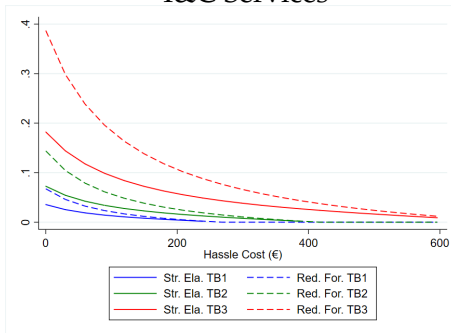
Reduced form elasticity larger.

Compare to KW (0.05 - 0.15), Saez (0.7 - 1.6).

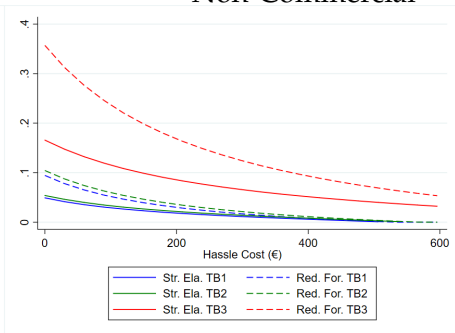
Could inflate by optimization frictions.

Small Hassle Costs Could Fully Rationalize Observed Bunching

I&C Services



Non-Commercial



For low tax brackets \approx 200 euros. High tax brackets \approx 400.

Next Steps

- Extending to full population tax returns data.
- Currently matching to patent data to see whether self-employed become “entrepreneurs.”
- Does self-employment merely help with unemployment spells and prevent depreciation of human capital?