Reconstructing Income Distributions: The Greek Case

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Motivation

1. Is there an optimal way to **combine information from all available tax data?** (admin, distributional, and survey)
2. How do we **estimate income tax distributions and inequality?**
3. Can we **estimate tax evasion** using only distributional tax data?
4. How does tax evasion affect inequality?

Our story in six steps

Step I	Use distributional (binned) income tax data and income tax structure information from Greece (2010-2021) to create Income Distributions
Step II	Use Administrative tax data and EFKA data from Greece (2015, 2017, and 2019) to create Income Distributions
Step III	Match the two distributions and provide a new methodology to show how we can use publicly available binned data to assess Income Distributions. The methodology also informs transforming gross into taxable into declared income distributions (vice versa)
Step IV	Provide a new method for estimating Tax Evasion using only public tax data
Step V	Examine trends of inequality and tax evasion and benchmark against other studies and efficiency of tax policies
Step VI	Use information from publicly available survey data (EU_SILC)

Data

Administrative micro-sample

FY2019 E1 tax returns, after clearance

930,054 individuals: 663,844 heads and 266,210 spouses.

Two strata from the E1 household frame (4,987,302 households): **a census of the top 1% of households** (49,873, weight 1) and a **random 10% of the rest** (449,488, weight 10.98).

Weights from the codebook's sampling sheet. Weighted: 8.92M persons, within 0.1% of the П13 individual total, the closest published count.

EFKA social-security registers

merged person by person, by tax number

Employee file: employer-side monthly filings with gross pay and the contribution split, 263,507 employees. Third-party benchmark independent of the tax return.

Self-employed file: person-month contributions, 126,511 persons. Proves who is economically active, the key to the extensive margin of evasion.

Match rates into the admin sample: 99.1 and 99.9 percent.

Published AADE statistics

the FY2019 bulletin workbook

П13, П10: income distributions in 67 brackets (П13 individuals; П10 declarations, decomposed into head and spouse blocks).

П1, П12В, per-code sheet: country totals, tax by band, every E1 code. To validate the tax computation and data coverage.

П4: family structure. Children count for the tax-credit simulation.

Distributional data 2019: Π13

Φορολογικό Έτος 2019

Κλιμάκιο - Περιγραφή	01.00. 1.ΑΡΙΘΜΟΣ ΦΟΡΟΛΟΓΟΥΜΕΝΩΝ	02.00 2.ΔΗΛΩΘΕΝ ΕΙΣΟΔΗΜΑ	02.01. ΑΚΙΝΗΤΗ ΠΕΡΙΟΥΣΙΑ	02.02. ΜΕΡΙΣΜΑΤΑ-ΤΟΚΟΙ-ΔΙΚΑΙΩΜΑΤΑ ΚΑΙ ΥΠΕΡΑΞΙΑ ΑΠΟ ΜΕΤΑΒΙΒΑΣΗ ΚΕΦΑΛΑΙΟΥ	02.03. ΕΠΙΧΕΙΡΗΜΑΤΙΚΗ ΔΡΑΣΤΗΡΙΟΤΗΤΑ	02.04. ΑΓΡΟΤΙΚΗ ΕΠΙΧΕΙΡΗΜΑΤΙΚΗ ΔΡΑΣΤΗΡΙΟΤΗΤΑ	02.05. ΜΙΣΘΩΤΕΣ ΥΠΗΡΕΣΙΕΣ ΚΑΙ ΝΑΥΤΙΚΟ ΕΙΣΟΔΗΜΑ	04.00. 4.ΤΕΚΜΗΡΙΟ ΔΑΠΑΝΩΝ ΔΙΑΒΙΩΣΗΣ	07.00. 7.ΑΡΝΗΤΙΚΑ ΣΤΟΙΧΕΙΑ ΑΠΟ ΖΗΜΙΕΣ	10.00. ΦΟΡΟΛΟΓΟΥΜΕΝΟ ΕΙΣΟΔΗΜΑ	17.00. ΣΥΝΟΛΙΚΟΣ ΦΟΡΟΣ	ΦΟΡΟΛΟΓΗΤΕΟ ΕΙΣΟΔΗΜΑ
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< 1.000	617,179	92,538,907	36,309,263	11,994,314	7,942,614	12,732,256	23,560,459	38,882,621	853,765,654	131,421,528	11,290,798	131,421,528
1.000 - 2.000	265,672	246,371,054	93,198,418	10,466,035	22,482,298	27,886,088	92,338,215	155,079,350	223,434,704	401,450,404	23,993,997	401,450,404
2.000 - 3.000	376,241	513,912,931	157,137,316	10,730,923	36,606,517	47,131,701	262,306,474	429,915,186	216,673,301	943,828,117	38,552,575	943,828,117
3.000 - 4.000	675,850	1,171,334,644	214,501,994	13,921,312	53,803,254	62,541,402	826,566,682	1,079,812,415	264,585,337	2,251,147,059	56,123,140	2,251,147,059
4.000 - 5.000	572,798	1,764,627,886	189,954,407	13,422,365	60,320,812	80,151,432	1,420,778,870	812,144,167	188,058,872	2,576,772,053	51,238,471	2,576,772,053
5.000 - 6.000	634,192	2,508,289,060	218,671,767	15,424,260	70,740,227	94,542,472	2,108,910,334	981,608,834	209,284,055	3,489,897,894	60,778,942	3,489,897,894
6.000 - 7.000	601,722	3,077,726,399	225,426,148	17,913,389	75,950,748	107,374,396	2,651,061,718	821,412,385	160,988,319	3,899,138,784	61,703,830	3,899,138,784
7.000 - 8.000	538,627	3,318,525,392	232,416,809	18,671,523	78,406,994	120,694,257	2,868,335,810	717,791,076	140,961,084	4,036,316,468	62,508,487	4,036,316,468
8.000 - 9.000	522,422	3,663,734,250	232,587,146	19,645,784	83,558,226	154,041,795	3,173,901,299	769,412,986	137,590,451	4,433,147,236	66,955,468	4,433,147,236
9.000 - 10.000	357,590	3,153,278,031	233,541,869	19,111,420	84,063,278	86,226,418	2,730,335,046	234,771,024	90,114,629	3,388,049,055	105,346,804	3,388,049,055
10.000 - 11.000	274,754	2,793,029,511	212,710,452	19,006,518	83,788,915	59,377,085	2,418,146,541	87,814,394	57,383,028	2,880,843,905	138,824,863	2,880,843,905
11.000 - 12.000	274,719	3,108,582,816	232,112,990	18,396,568	82,998,634	45,764,153	2,729,310,471	54,057,058	49,678,070	3,162,639,875	194,556,075	3,162,639,875
12.000 - 13.000	233,045	2,875,778,619	206,316,488	18,972,135	82,768,731	36,237,609	2,531,483,656	35,052,158	37,566,657	2,910,830,777	210,819,765	2,910,830,777
13.000 - 14.000	220,256	2,951,097,497	199,095,262	18,496,281	77,888,825	29,913,294	2,625,703,836	23,962,206	31,190,263	2,975,059,703	244,109,406	2,975,059,703
14.000 - 15.000	237,252	3,433,191,228	191,925,100	18,607,588	78,665,301	26,210,945	3,117,782,294	17,247,473	26,572,458	3,450,438,700	313,166,024	3,450,438,700
15.000 - 16.000	237,465	3,662,063,827	189,139,148	21,866,187	76,834,268	22,342,279	3,351,881,945	13,653,843	22,153,848	3,675,717,670	359,356,188	3,675,717,670
16.000 - 17.000	215,464	3,542,292,650	184,931,688	22,283,637	73,805,317	19,462,534	3,241,809,473	11,100,695	19,368,858	3,553,393,345	372,086,670	3,553,393,345
17.000 - 18.000	183,790	3,207,395,249	192,193,949	23,547,110	73,045,802	17,771,683	2,900,836,705	8,255,347	18,013,570	3,215,650,596	357,082,578	3,215,650,596
18.000 - 19.000	168,683	3,111,527,708	184,088,900	24,536,395	70,936,075	15,957,267	2,816,009,071	7,315,785	15,605,500	3,118,843,493	363,036,154	3,118,843,493
19.000 - 20.000	142,652	2,771,677,034	183,531,890	24,799,627	72,412,092	14,320,689	2,476,612,735	6,105,136	13,074,175	2,777,782,170	337,253,010	2,777,782,170

The argument in four steps

1. **Validation.** The administrative sample reproduces the published tax statistics, table by table: aggregates first, then counts inside income brackets, then every other published table. Gross income is the one documented exception.

2. **Distributions.** With the matching methodology established, the published tables alone deliver the Greek 2019 income distribution: Gini, top shares, and the presumptive-income adjustments.

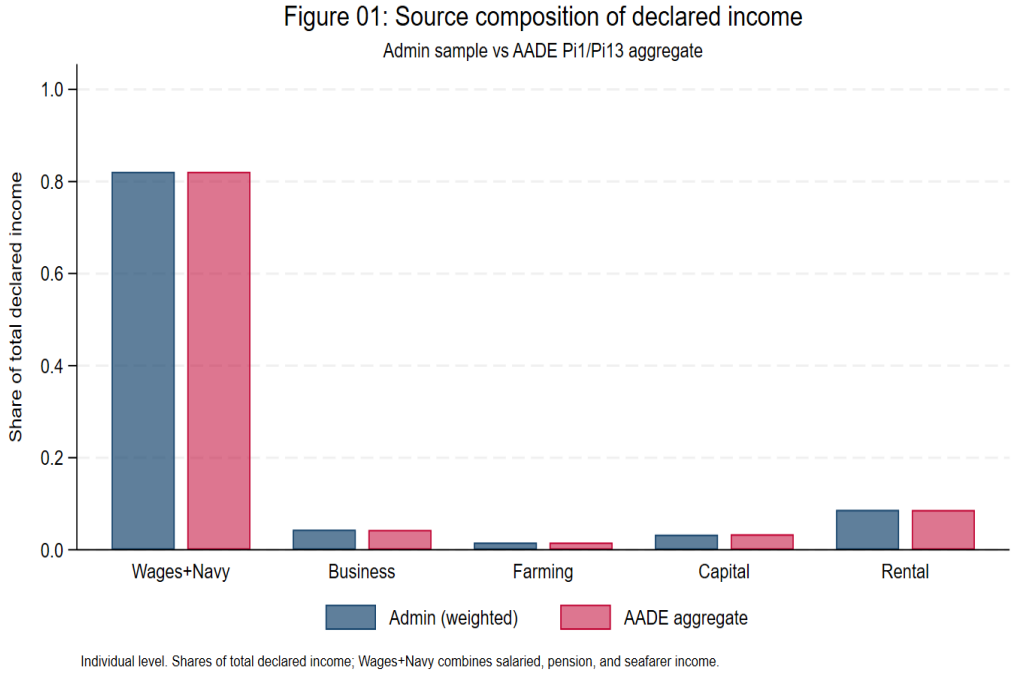
3. **Tax evasion.** Intensive and extensive margins: the methodology, where bunching appears and at which thresholds, and the translation into euros, in detail.

4. **Benchmark.** Against Artavanis, Morse, and Tsoutsoura (2016): what changed between 2009 and 2019, and what each design cannot see.

Matching distributions: Binned and admin data

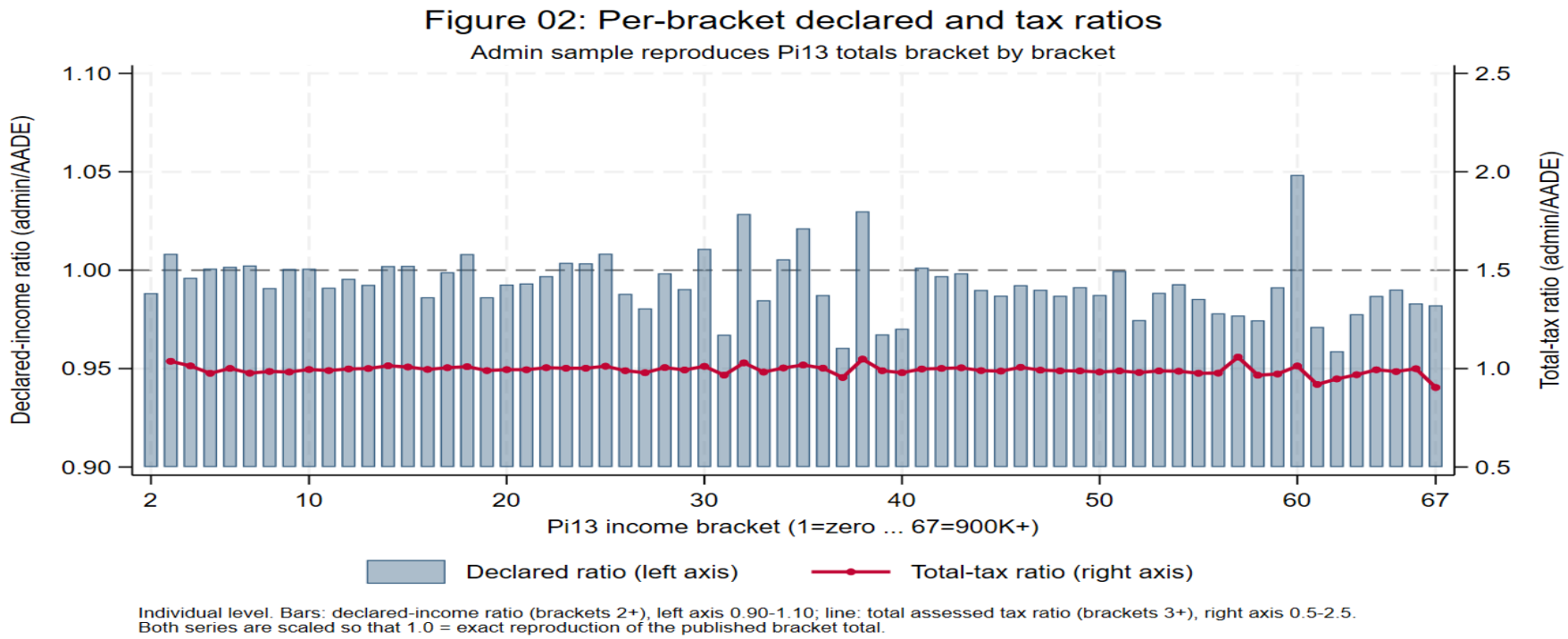
We reproduce from the admin sample the published Π13 aggregates

	Admin sample (weighted)	Published Π13	Ratio
Population	8,924,483	8,933,407	0.9990
Declared income	EUR 78.09 bn	EUR 78.36 bn	0.9965
Taxable income	EUR 84.49 bn	EUR 84.69 bn	0.9977
Total tax	EUR 8.77 bn	EUR 8.80 bn	0.9971
Presumptive uplift	EUR 6.29 bn	EUR 6.35 bn	0.9906



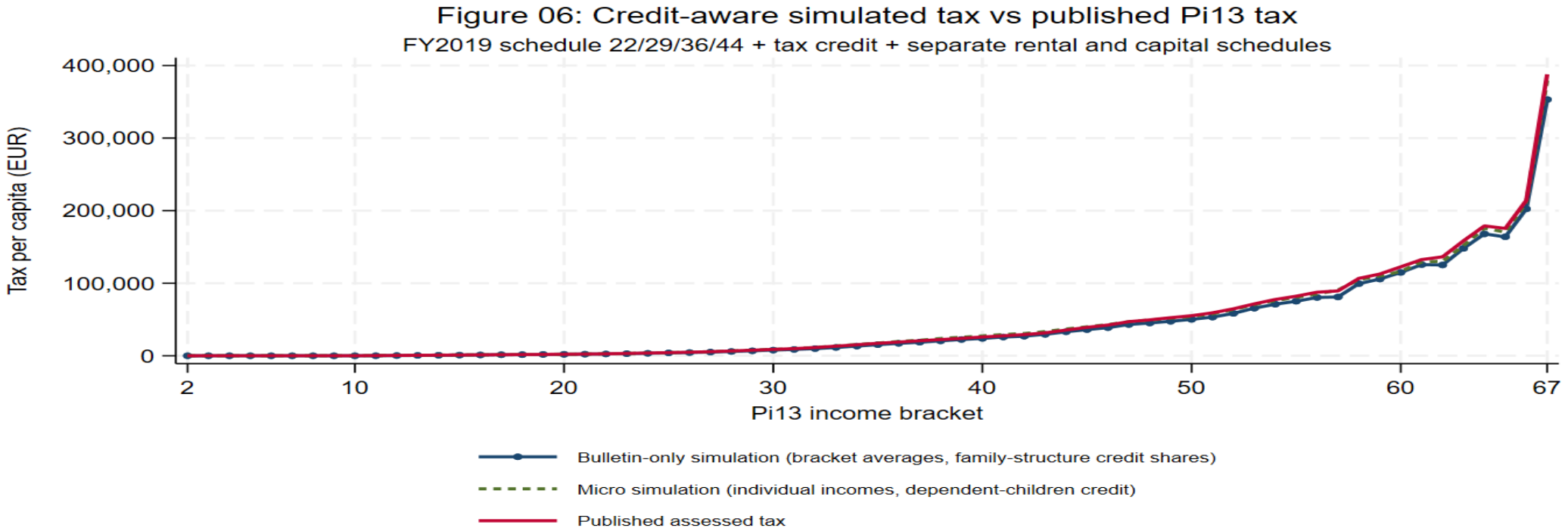
- Comparing our admin sample estimated distribution with the published Π13 totals
- **Design weights**: weight 1 for the top-1% census households, 10.98 for the random-10% stratum (remaining 99% sample population over the real 99% population)
- Every source is reproduced within 1–2 percent; **the mix is also right**, not only the total

The match holds bracket by bracket



- 67 published income brackets
- Ratio of the weighted sample value to the published П13 value for declared income and total tax
- Both series sit near one across the whole distribution
- Bracket counts are a different story: at the top they diverge in a systematic way

The computation from the statutes: simulated vs published П13 tax

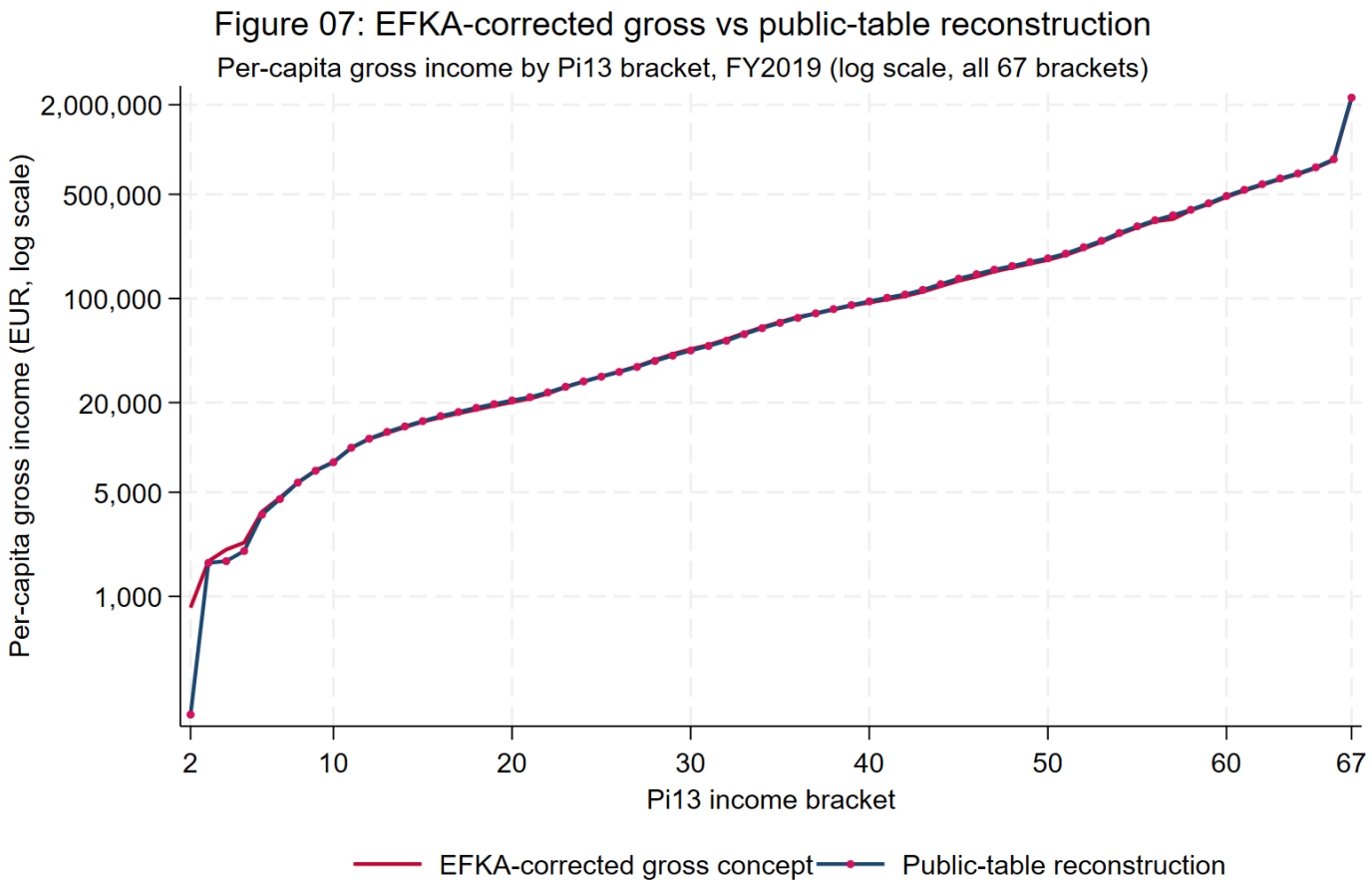


Up to now: we showed the published tax and credit match the admin data

Now: we show the computation that generates them is reproducible from published inputs alone

It lands on the published tax, bracket by bracket

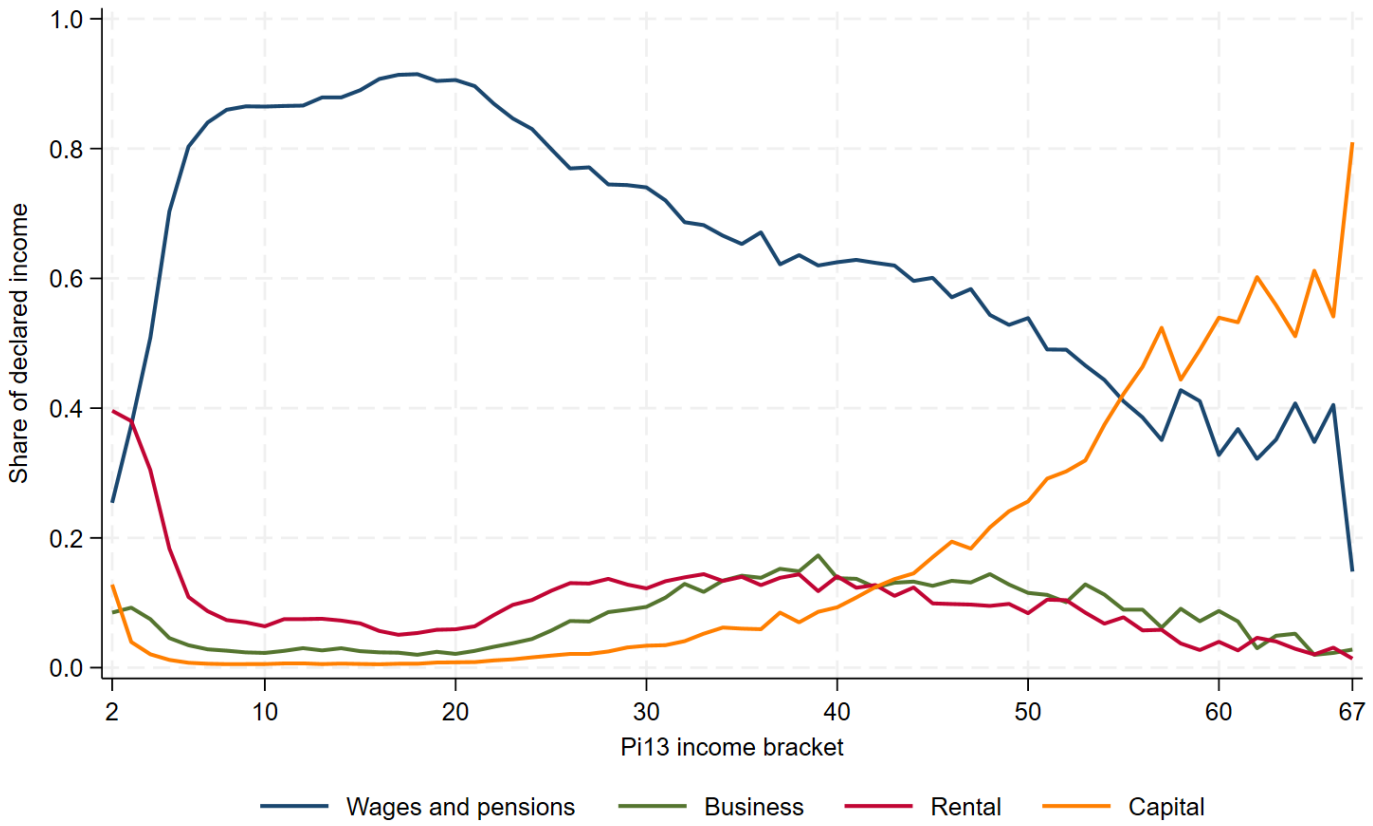
ALSO! The corrected gross income is reproducible from public tables



Component	EFKA	Bulletin	Pub/EFKA
Declared income	78.3	78.4	1.00
+ employee SSC (wage)	6.7	6.6	0.99
+ pension SSC (health)	—	1.8	—
+ self-employed SSC	2.6	0.8	0.30
+ farmer SSC	0.8	0.4	0.44
= total gross	88.3	87.9	1.00

- Declared income plus each source's contribution on the administrative and EFKA micro-data (wage SSC validated against the EFKA insurable wage; self-employed at the EFKA-actual contribution). The totals agree to 0.4 percent.
- The Pub/EFKA column shows the routes differ in composition

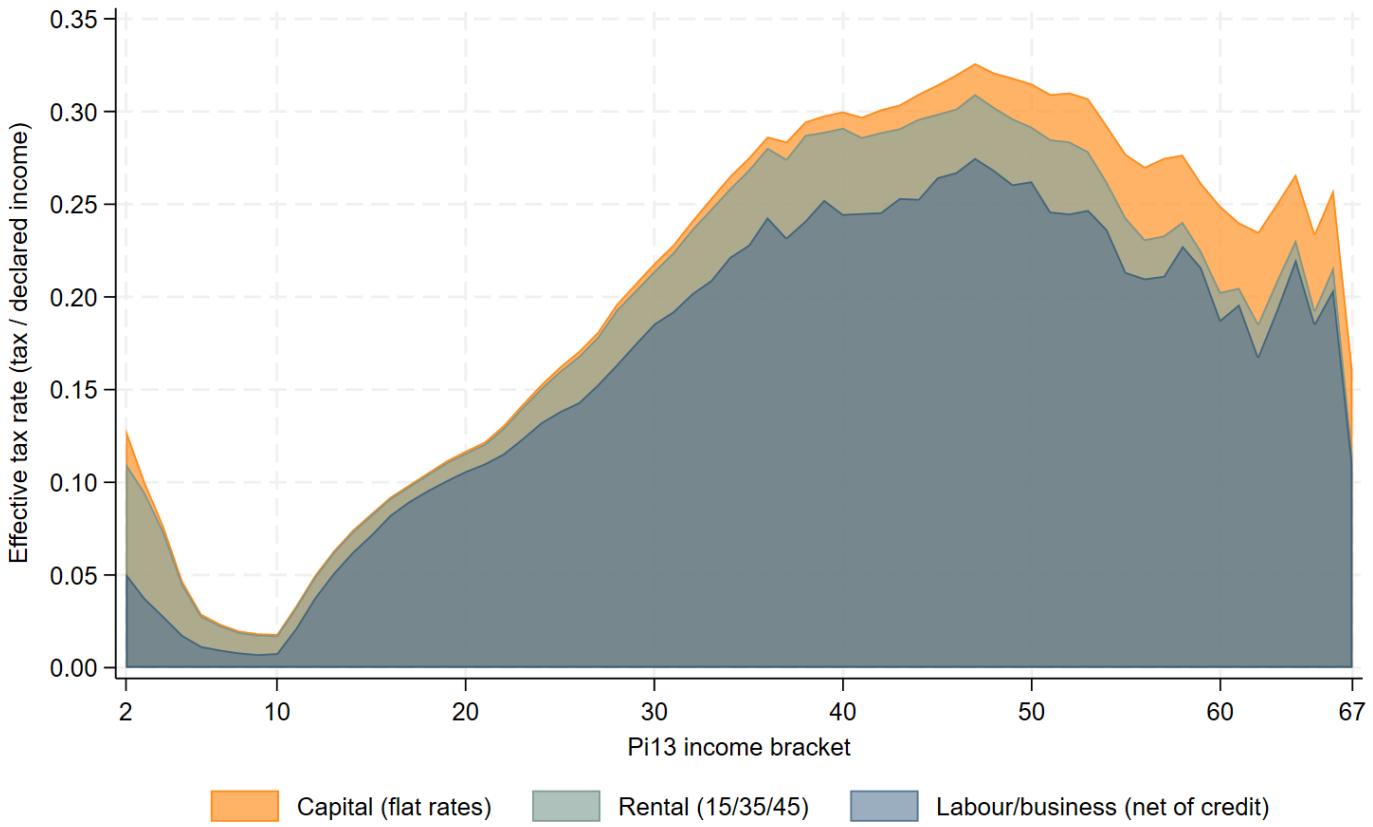
Top incomes are capital incomes



- Capital is 3% of all declared income but 61% of the top 1% (and 72% of the very top)
- Capital is taxed at a flat rate outside the progressive schedule

Share of income	All	Top 1%
Wages + pensions	82%	30%
Business	4%	6%
Rental	9%	4%
Capital	3%	61%

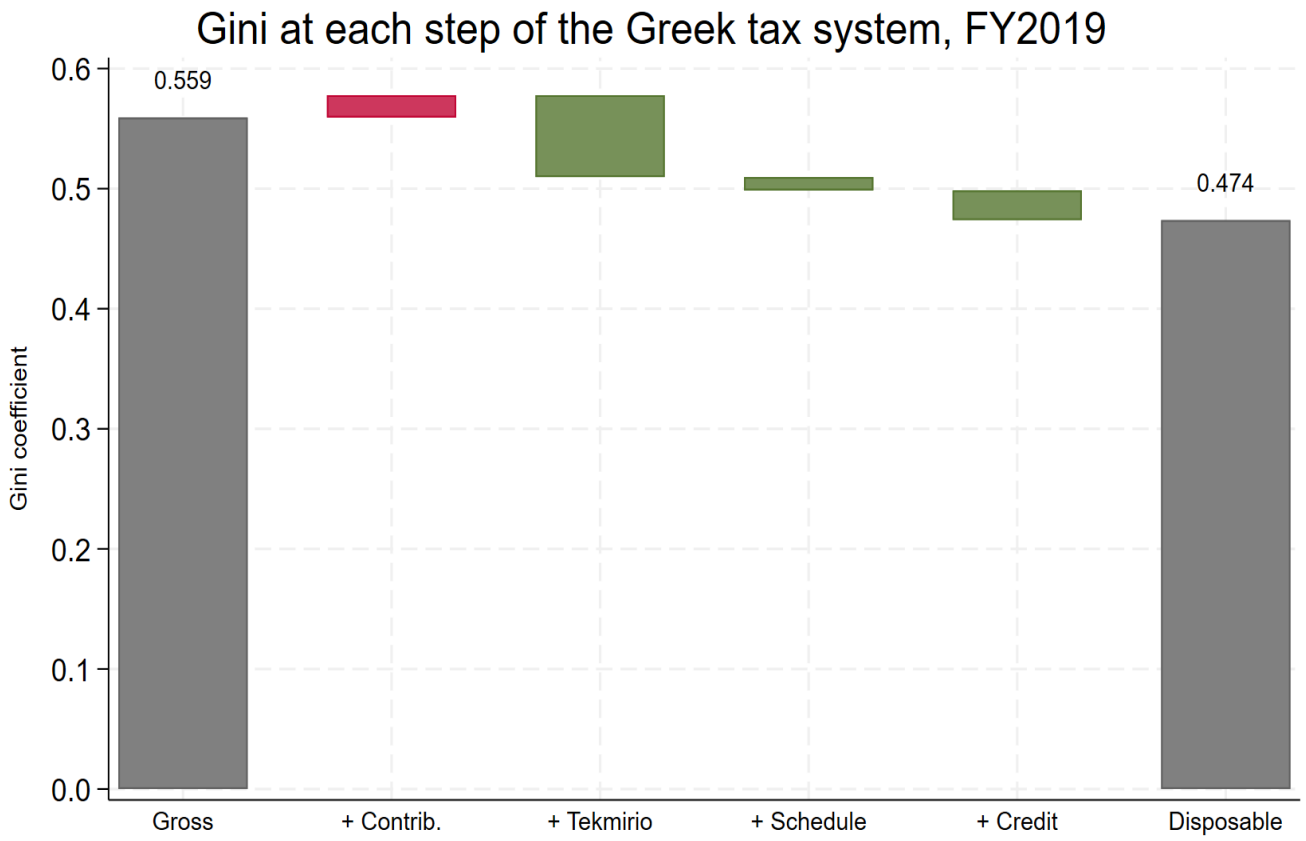
The effective tax rate: Progressive then regressive



1. Flat tax on capital (from the first euro)
2. Progressive 15/35/45 tax on rental
3. Progressive schedule on labor and business (net of credit)

Effective tax rate	Rate
Lower (br 2-15)	4%
Lower-middle (br 16-30)	13%
Upper-middle (br 40-50)	31%
Top 1% (br 53+)	23%
Very top (br 60+)	19%

The redistribution ladder: where inequality moves



- Gini from gross to disposable
- Social contributions RAISE inequality (0.559 to 0.578): the contribution ceiling makes them regressive
- The presumptive uplift (tekmirio) does the heaviest lifting
- Of the income tax's own redistribution, the family credit does more than the rate schedule (69 vs 31%)
- Final Gini: 0.474

Step	Gini	Change
Gross income	0.559	
+ contributions	0.578	+0.019
+ tekmirio uplift	0.510	-0.068
+ schedule	0.499	-0.011
+ family credit	0.474	-0.025

Admin x EFKA micro, person-level (Pi10/n10), incomes floored at zero for the Lorenz. Gross uses EFKA-actual self-employed contributions. Source: AADE 2019 microdata, EFKA registers.

Measuring under-reporting

Measuring under-reporting: consumption reveals true income

Living standard tracks true income:

- Two households with the same declared income but different sources
- The one with higher consumption is under-reporting, this gap is the multiplier **k**

Specifications (Pissarides-Weber Engel curve):

constant multiplier

$$\log C_i = \alpha + \beta \log Y_i^{\text{decl}} + \sum_s \delta_s D_{si} + \gamma R_i + \varepsilon_i \qquad k_s = e^{\delta_s/\beta}$$

income-varying (the constant-k restriction is tested, and rejected)

$$\log C_i = \alpha + \beta \log Y_i^{\text{decl}} + \sum_s (\delta_s + \gamma_s \log Y_i^{\text{decl}})\, D_{si} + \gamma R_i + \varepsilon_i \qquad k_s(Y) = e^{(\delta_s + \gamma_s \log Y)/\beta}$$

C = consumption signal; Ydecl = declared income; Dsi = 1 if filer i's main source is s; Ri = region. Salaried and pensioners (compliant benchmark, k≈ 1); ks is the true-to-declared income ratio

Two consumption signals:

- Estimated on heads (primary filers)
- Electronic spending is a joint, return-level figure (identical for both spouses), taken once per tax unit, to avoid double-counting
- Imputed income (tekmirio) as a complementary check

Consumption signal	What it is	Coverage
Electronic spending (E1 code 049)	actual card and transfer consumption (a flow)	all filers (primary)
Living-expenses tekmirio	asset-based imputation, wealth-linked	binders only (complementary)

Beyond under-reporting: self-employed who declare nothing

- **A multiplier cannot reach a filer who declares zero**
- The extensive margin is the income of the economically active self-employed who declare no business profit at all
- EFKA registration identifies active self-employed
- Those declaring non-positive business income are the extensive margin (74% of EFKA-insured)
- Their hidden income is the presumptive-floor (tekmirio) uplift, summed over the group
- The bank-credit method of Artavanis et al. (2016) is a multiplier on reported income

Extensive margin	EUR bn
Admin tekmirio (heads)	1.21
Bulletin tekmirio, Pi7 (heads)	1.52
Admin e-spending floor (heads)	1.23
Admin tekmirio (households)	1.75

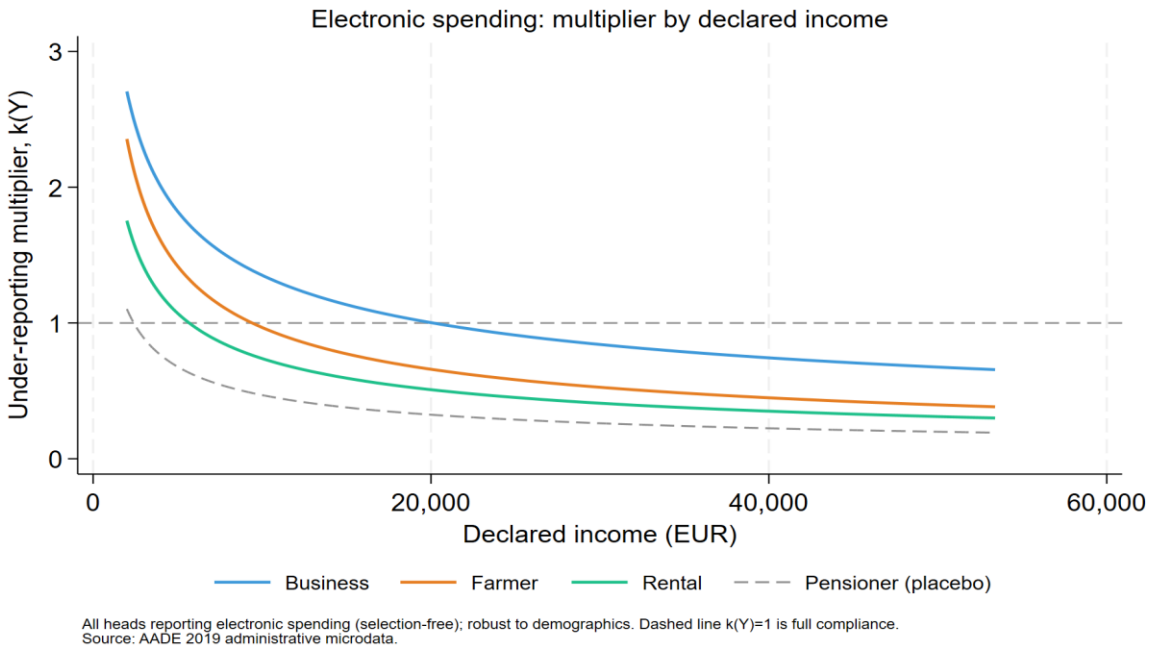
Beyond under-reporting: self-employed who declare nothing

Two checks:

1. **Firm payroll.** Sole proprietors who employ staff under their own tax ID: 51% declare non-positive business income, and 85% declare less than the wages they pay their employees (EFKA-reported)
2. **Consumption.** The zero-business self-employed e-spend more than their whole declared income, and the asset-poor most of all (so it is not wealth drawdown)

e-spend > declared income	all	asset-poor
Zero-business self-employed	50%	65%
Business < employees' wages	56%	71%

Self-employed true income is about 1.8 times the declared



All heads reporting electronic spending (selection-free); robust to demographics. Dashed line k(Y)=1 is full compliance.
Source: AADE 2019 administrative microdata.

	Business	Farmer	Rental	Placebo
baseline	1.84	1.83	1.21	0.42
+ demographics	1.47	1.49	1.11	0.90
+ wealth	1.80	1.78	1.04	0.41
above e-pay floor	2.86	1.86	1.74	0.62

- The pensioner placebo stays below 1
- Cash is invisible, so this is a lower bound
- Unreported share is 1 – 1/k)
- 46 percent of true business and farming income goes unreported
- Under-reporting is largest for low-declared filers and falls as declared income rises
- This matches Artavanis, Morse and Tsoutsoura (2016) (1.75-1.84) from a different, selection-free signal, robust to demographic, wealth and threshold controls
- The salaried reference is clean: a within-salaried split placebo returns k about 1.00 (0.999-1.002)

Is the multiplier clean of wealth? Who does it miss? FY2019 and FY2017

The multiplier survives wealth controls and the household-income check

Self-employed multiplier k	2019	2017
Baseline (income, profession, region)	1.84	2.23
Wealth control, level form	1.76	2.16
Wealth control, index form	1.44	1.85
Demographics (age, marital, children)	1.47	1.77
Single-earner households (clean)	1.90	2.36
Above e-payment floor (voluntary)	2.86	3.29

- Controlling for observed wealth barely moves it (1.84 to 1.76)
- The lower index and demographic figures absorb income, not just wealth

Multiplier k = true / declared income, electronic-spending signal, salaried reference, weighted heads. Each row a separate regression. Source: AADE 2017/2019 microdata.

The multiplier is concentrated among non-wealthy self-employed

Self-employed k, by wealth	2019	2017
Property value ≤ €250k	1.82	—
Property value > €250k	1.05	—
Bottom 90% by wealth	1.83	2.27
Top wealth decile	1.02	1.16

- **We split by wealth**
- Property value: the state's objective value
- Above €250k it triggers the supplementary property tax, not self-reported
- Wealth groups rank households by estimated net wealth, assessed property plus capitalised interest and dividends minus mortgage debt
- Among the property-rich the self-employed gap disappears (k ≈ 1.0)
- The signal catches small, less formalised operators, while the property-rich evade through the corporate books not visible consumption
- A low multiplier here is not proof of compliance
- It is a lower bound: their declared income matches their visible spending, we do not see savings

Property threshold = supplementary-ENFIA (objective value > €250k), third-party assessed (2019 only). Source: AADE microdata, FY2017 and FY2019.

Owner-managers spend 3.3× declared income

e-spending multiplier k	2019	2017
Self-employed, owner-managers included	1.84	2.23
Self-employed, owner-managers removed	1.80	2.15
Owner-managers (all)	3.26	3.51
of which dividend-takers	4.26	5.07
of which dividend-suppressors	3.14	3.33

Results:

- Splitting owner-managers by whether they declare any DIVIDEND, both spend far above declared income
- dividend-takers k ≈ 4.3
- dividend-suppressors (no dividend declared) k ≈ 3.1 (2019)
- Even those reporting no dividend consume like 3× earners, so the margin is not only the visible distributors

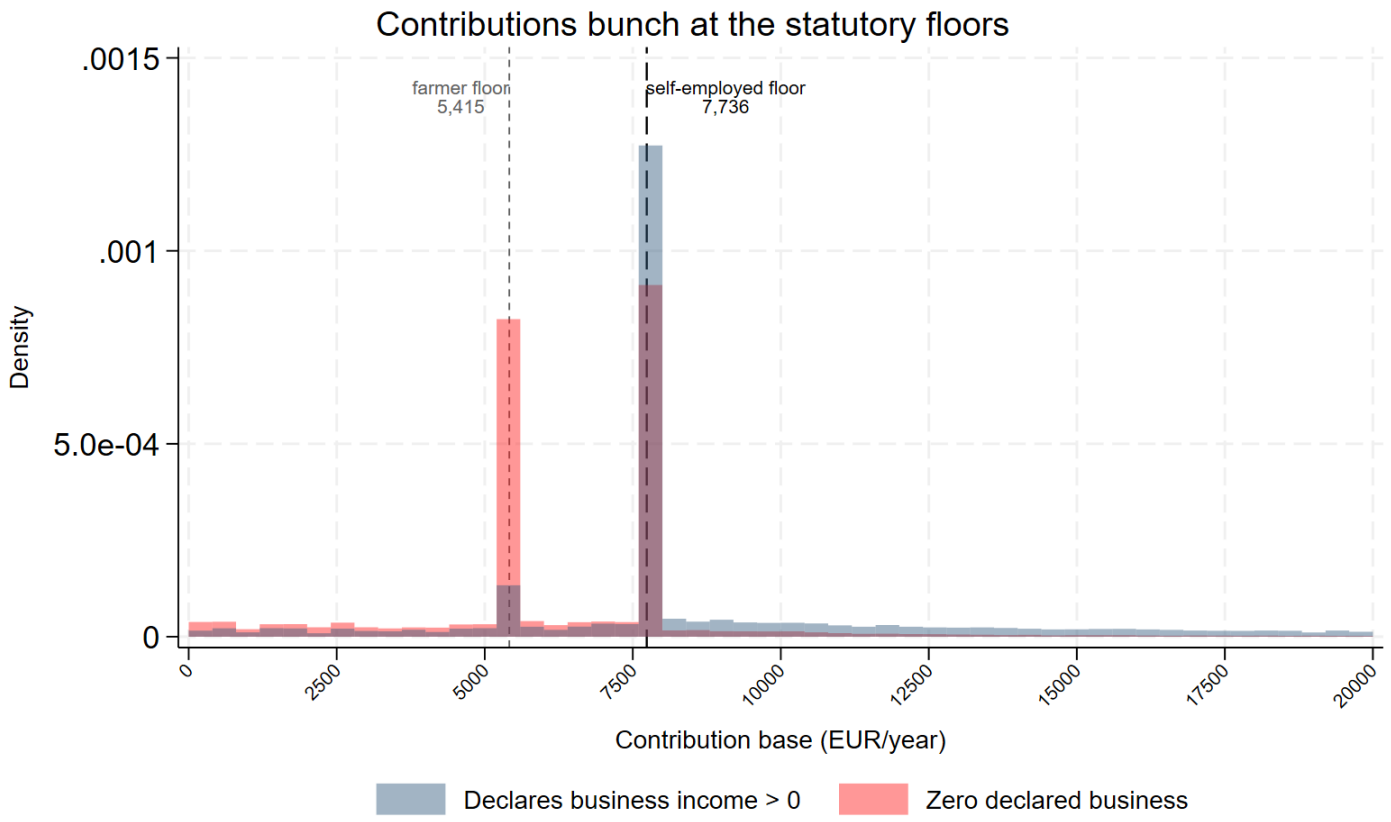
Flagged group: Owner-managers of incorporated, CIT-taxed firms, inferred from the social-security link (no ownership registry exists)

- 91,319 in 2019, 59,599 in 2017
- 89% declare zero dividend; median declared income €12.5k
- Observed wealth (median €87k) (ENFIA plus capitalised interest and dividends minus mortgage)
- it excludes wealth retained inside the firm

Robustness:

- Route B: insured in the category for company directors and managers
- Route C: registered as the employer of a closely-held corporation, a company with few owners who also run it

Self-employed contributions bunch at the statutory floor



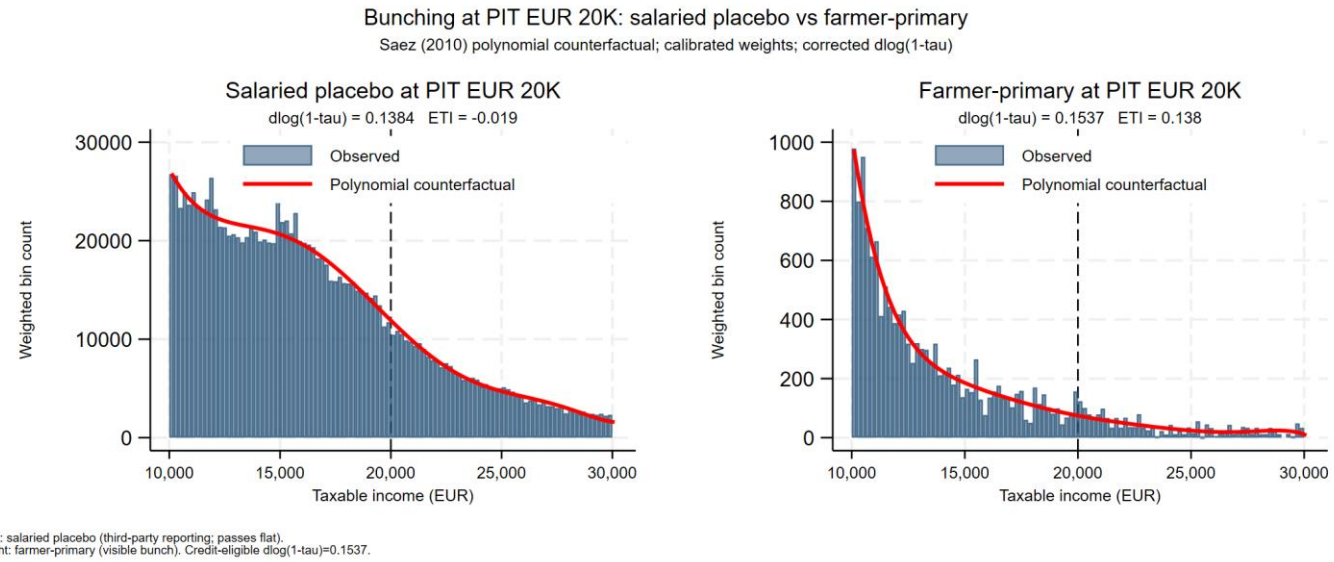
- About 37%of all self-employed sit at the floor of the minimum wage (7,736 year)
- Of those bunched at the floor, 72% declare no business income at all
- They pay the minimum and report 0
- This is consistent with both small operations or with an active professional reporting the legal minimum

Of the self-employed at the floor	Share
Declare business income	28%
Declare no business income	72%

Base = prior-year income (EFKA); floors are the FY2019 statutory minima. Source: EFKA self-employed register matched to AADE 2019 microdata.

Bunching at the income-tax kinks: a real but modest response

Farmers bunch at the income-tax kinks; the third-party-reported salaried do not, and business filers barely do.



Left: salaried placebo (third-party reporting; passes flat).
Right: farmer-primary (visible bunch). Credit-eligible dlog(1-tau)=0.1537.

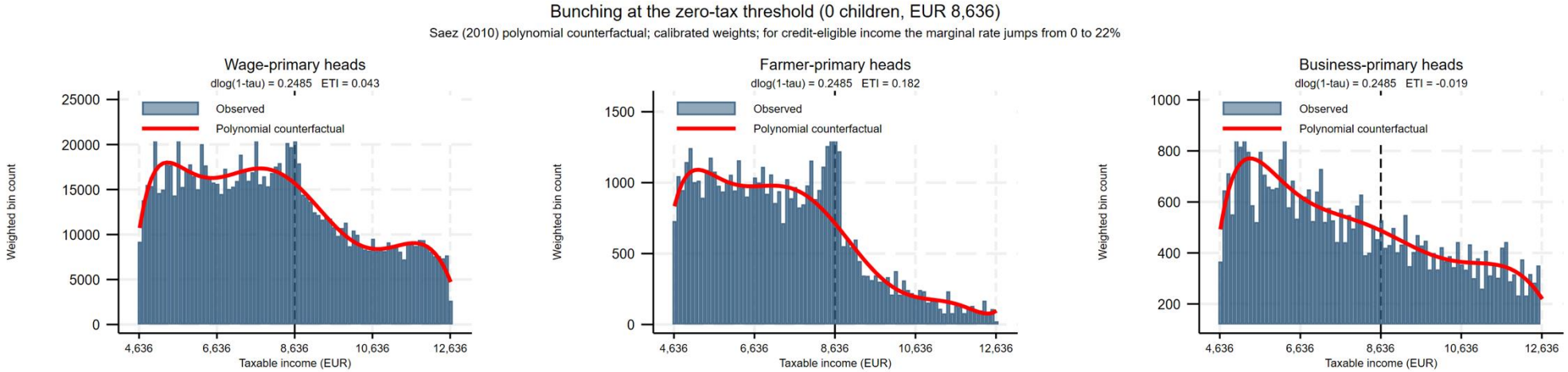
ETI AT EACH PIT KINK (obs in window in parentheses)

Kink z*	Salaried (placebo)	Business	Farmer
PIT EUR 20K	-0.02 (125k)	+0.02 (6.9k)	+0.14 (1.6k)
PIT EUR 30K	+0.01 (38k)	+0.02 (3.3k)	+0.31 (350)
PIT EUR 40K	+0.01 (14k)	-0.03 (1.9k)	n/a (161)

- We use the Saez 2010 methodology (% change in reported taxable income per 1 % change in the net-of-tax rate from the excess mass at the kink)
- The smaller, the less bunching
- Wages are third-party reported and cannot be re-timed, which is why the placebo is flat and validates the design
- Farmers bunch at EUR 20,000
- **Business ETI is about 0.02 at every PIT kink**
- Diffuse and spread across the return under-reporting through the intensive (true income about 1.8 times declared) and extensive (declaring nothing) margins

Bunching at a new kink: the credit's zero-tax threshold

The credit absorbs all tax up to a threshold, where the marginal rate jumps 0 to 22 percent. Professional farmers, credit-eligible and able to adjust reported income, bunch there; business income, which gets no credit, does not



Observed 100-EUR bin counts against the degree-7 polynomial counterfactual, over a EUR 4,000 window each side of the threshold with a 300-EUR exclusion band. Left: wage-primary heads (credit-eligible, third-party reported). Centre: farmer-primary heads (credit-eligible, self-reported). Right: business-primary heads; business income carries no art. 16 credit, so no rate jump exists at this threshold for them (comparator panel; smaller group, noisier bins).

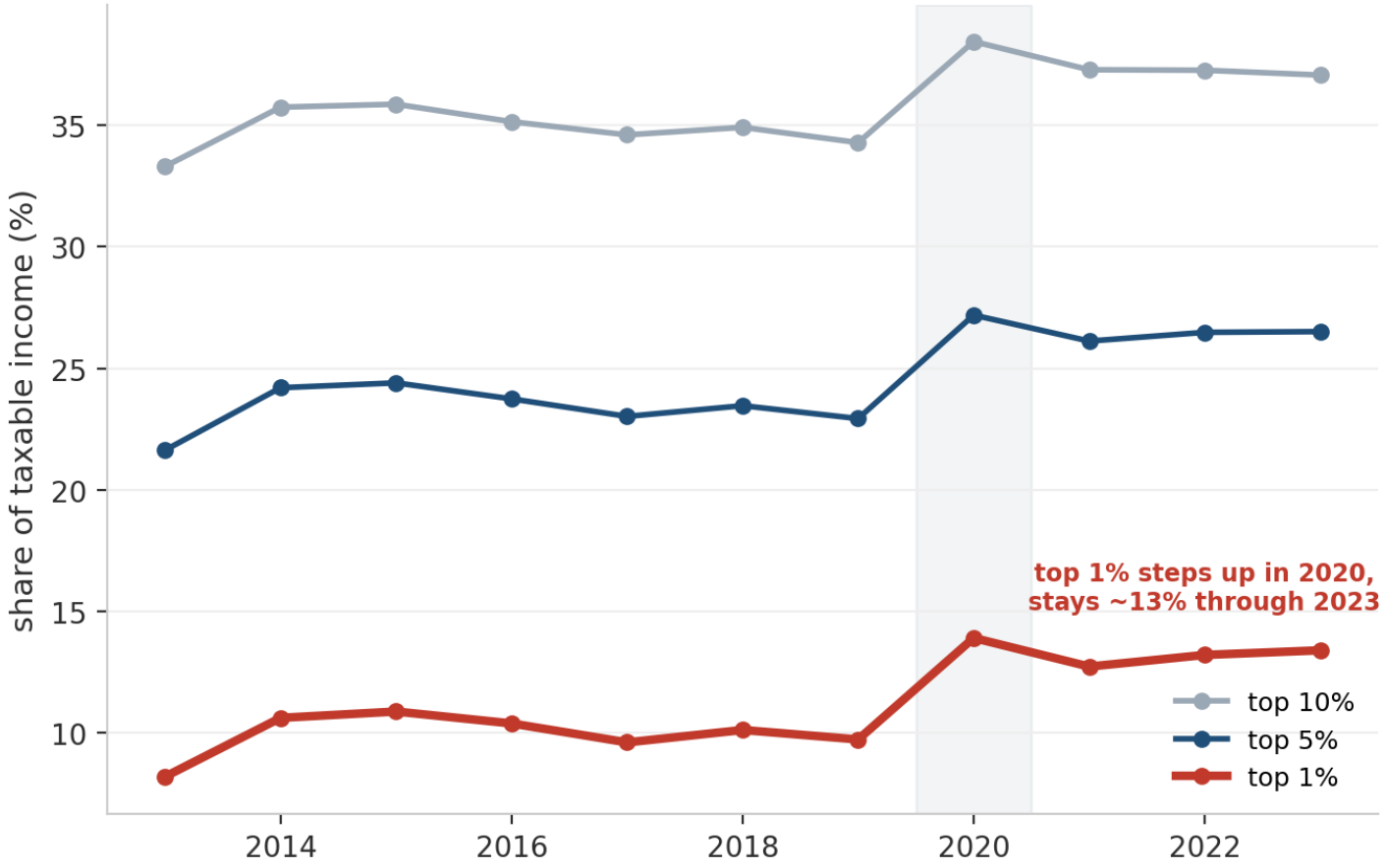
ETI AT THE ZERO-TAX THRESHOLD, EUR 8,636 (obs in parentheses)

Group (heads)	ETI at the threshold
Wage-primary	+0.04 (104k)
Farmer-primary	+0.18 (5.0k)
Business-primary (no credit)	-0.02 (3.9k)

Multiyear evidence: 2013–2023

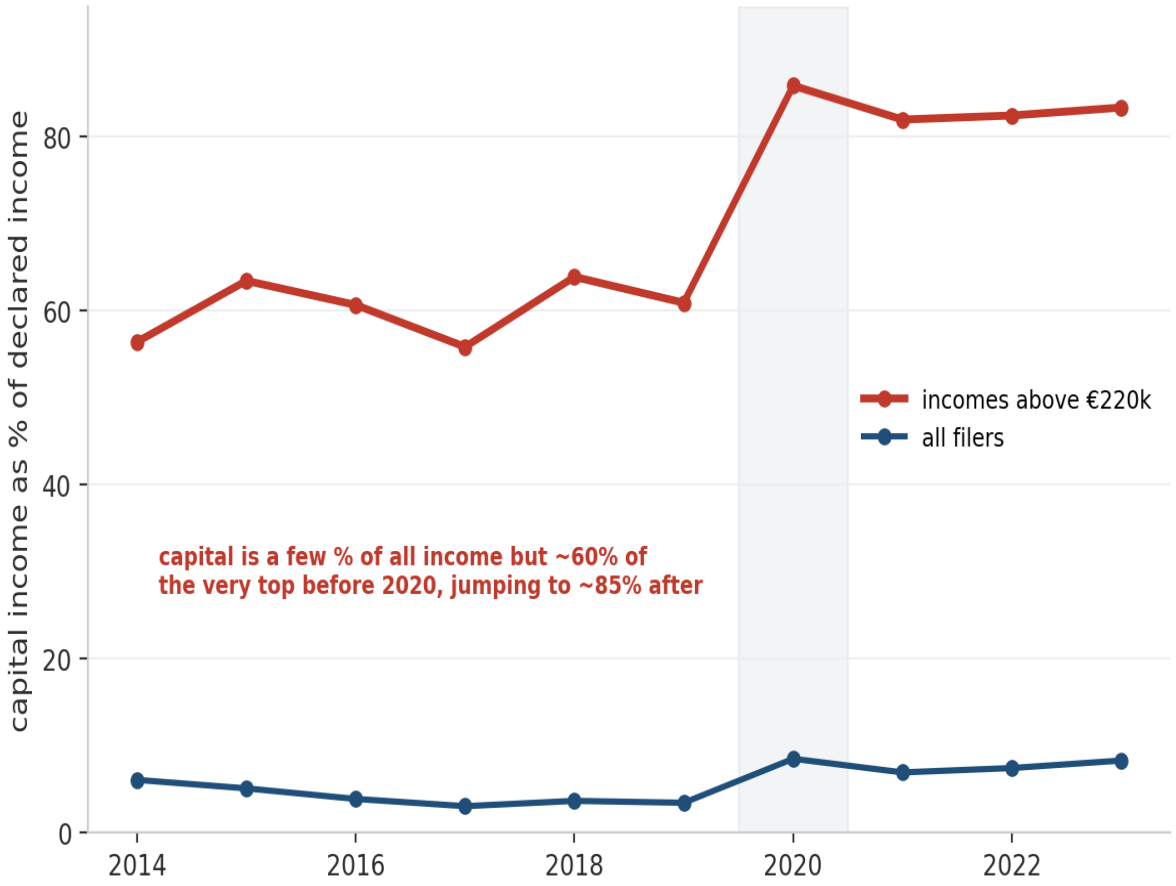
Inequality, top incomes and under-reporting over the decade

The top 1% (2013-2023)



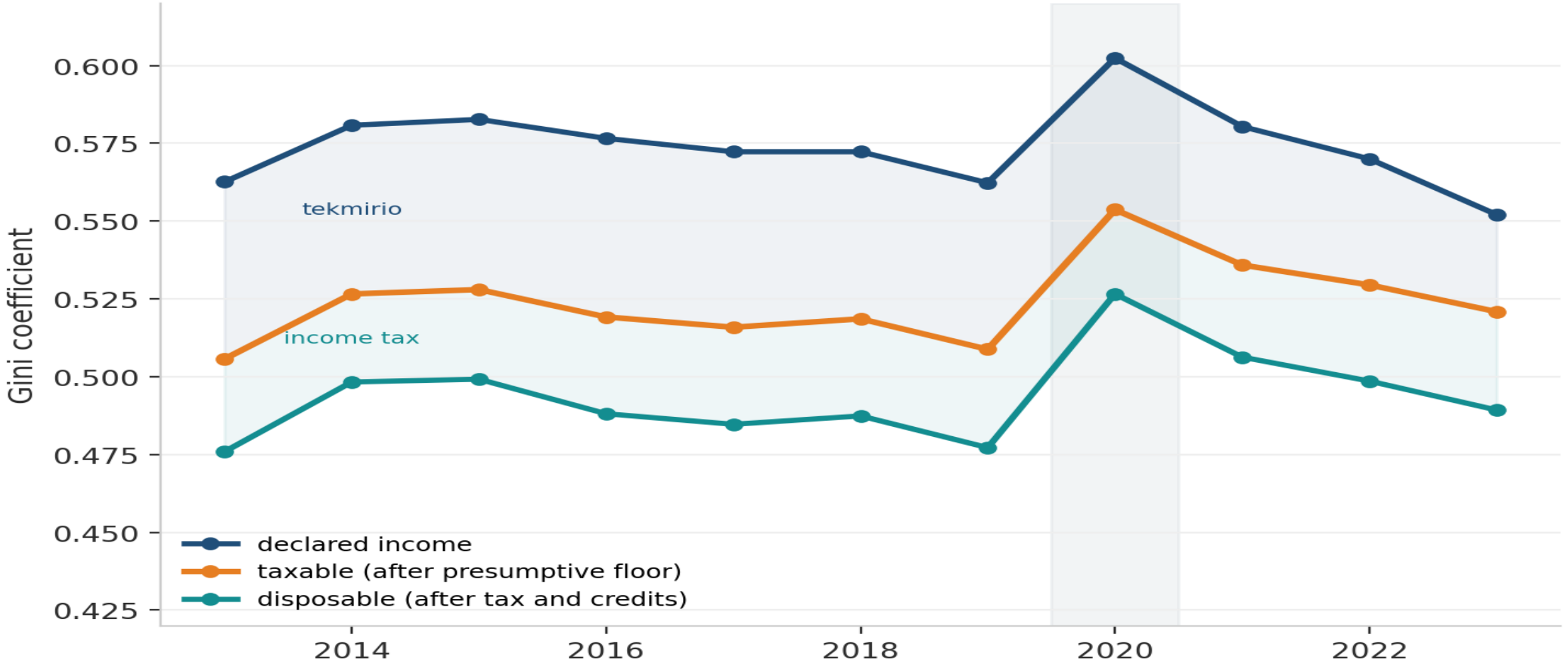
- Shares of taxable income held by the top 1%, top 5% and top 10%
- Jump in 2020 (top 1% 0.14), then stay at 0.13 to 0.14, about 3 to 4 points above the entire 2013 to 2019 band

Top incomes are capital incomes, increasingly after 2020

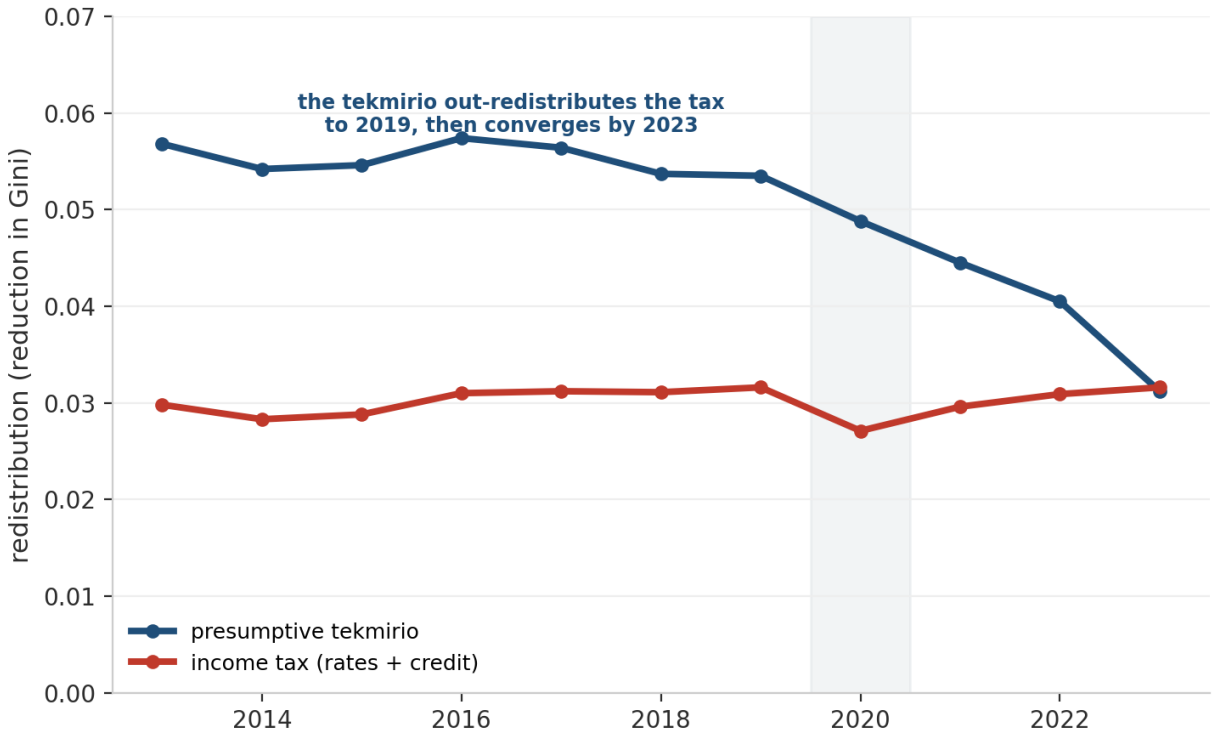


- Capital income: dividends, interest, capital gains (share of declared income)
- Admin and distributional data AGREE
- Top-band share is 0.61 in 2019, both sources
- Capital is only a few percent of all income (about 3 to 8%) but about 60% of income at the very top before 2020
- It jumped at about 85%, 2020 onwards
- Capital is taxed at a flat low rate
- The dividend withholding-rate cut (15% to 10% to 5%, 2017 to 2020) could be one plausible contributor

Inequality across three income concepts: 2013 to 2023



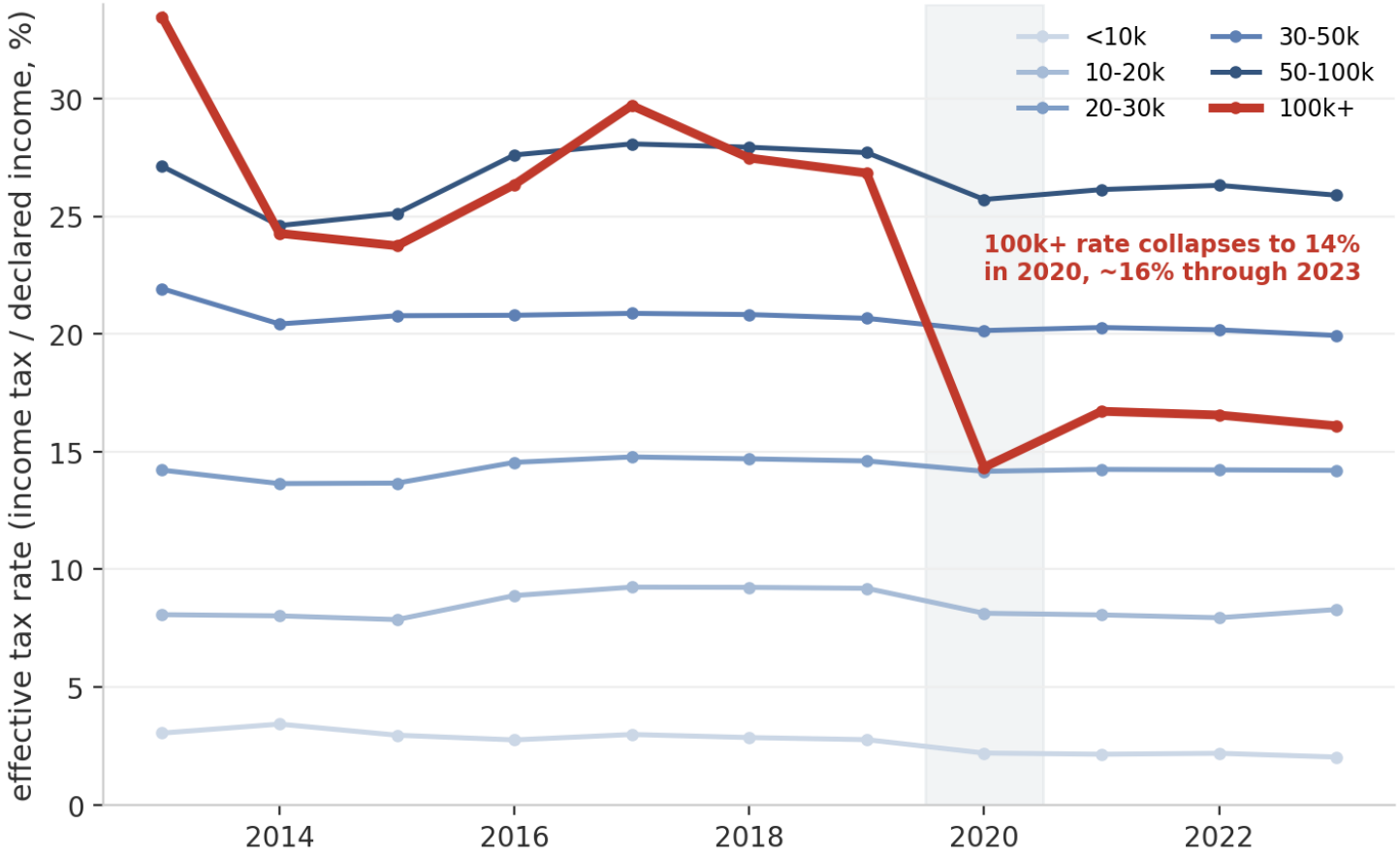
Imputed income fades, the tax holds



Reduction in Gini	2013	2019	2020	2023
Presumptive tekmirio	0.057	0.053	0.049	0.031
Income tax	0.030	0.032	0.027	0.032
Total	0.087	0.085	0.076	0.063

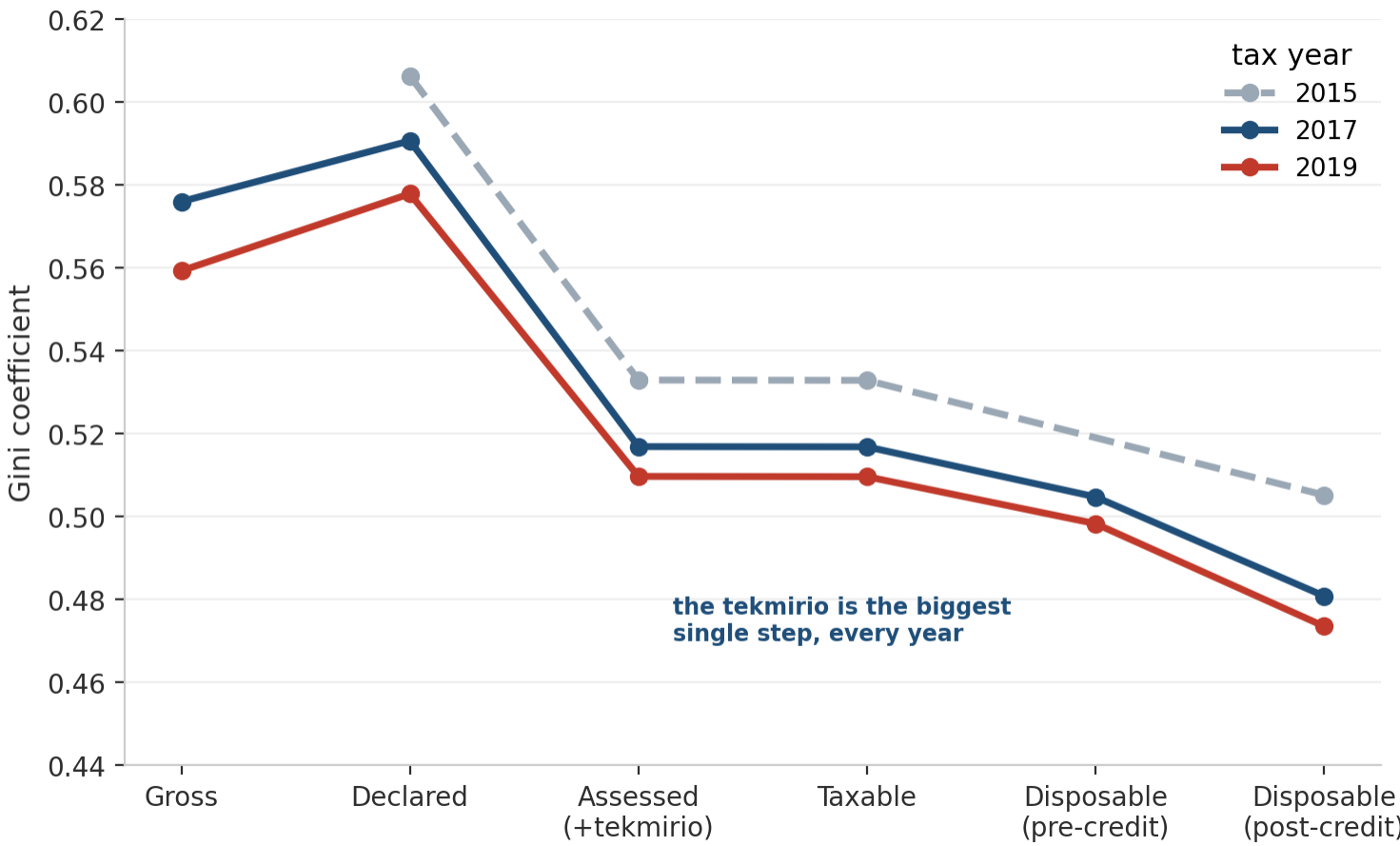
- Both lines are computed for all years from the distributional data
- Imputed income out-redistributes the income tax up to 2019 (about 0.054 vs 0.031 Gini points)
- Then fades as nominal incomes rise above the lifestyle minimum, reaching parity by 2023
- Within the income tax, the personal CREDIT does MORE of the redistribution than the rate SCHEDULE: about 66% credit versus 34% schedule in 2017, and 69% versus 31% in 2019 (administrative micro; the slide-18 result)
- Most of the income tax's progressivity comes from the credit, not the rate brackets

The effective tax rate is progressive, then regressive



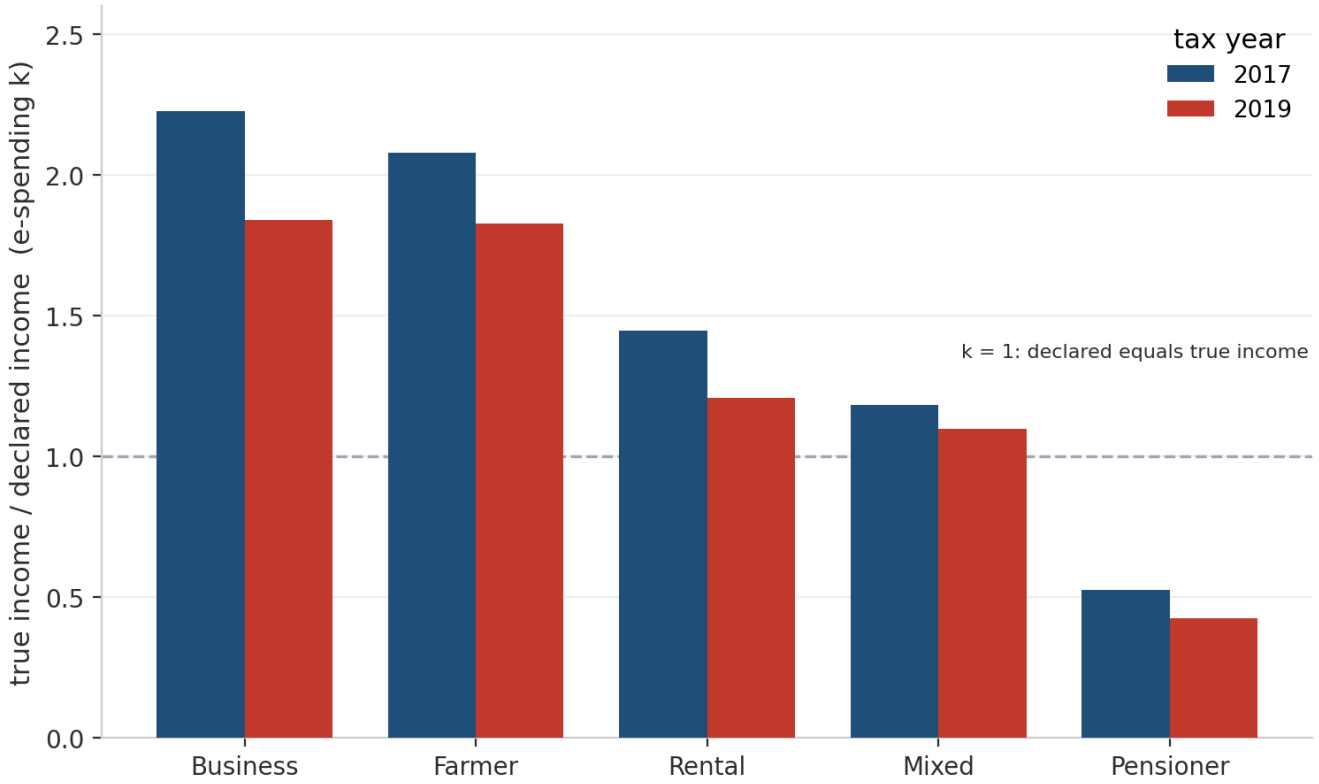
- Rate is the assessed income tax (bulletin total tax) divided by declared income
- The tax is computed on taxable income, so it already embeds the presumptive uplift
- The rate rises to about 28% at €50 to 100k and then falls at the very top, every year
- In 2020 the 100k+ rate collapses from 27% to 14% and recovers only to about 16% through 2023, as top income shifts durably to low-taxed capital

Redistribution across income concepts in the micro-data



- Inequality falls across the three years
- Imputed income is the largest single step every year (declared to assessed, about 0.07 Gini points), larger than the income tax
- Social contributions are mildly regressive (gross to declared raises the Gini)
- The personal credit does about two-thirds of the income tax's redistribution

Self-employed under-reporting fell from 2017 to 2019



E-SPENDING MULTIPLIER k (true / declared)

source	2017	2019
Business	2.23	1.84
Farmer	2.08	1.83
Rental	1.44	1.21
Mixed	1.18	1.10
Pensioner	0.52	0.42

- Business filers declare €1 for every €2.2 of true income in 2017, improving to €1 in 1.8 by 2019
- Farmers track business
- Rental and mixed under-report less
- Pensioners sit below 1 (the floor over-imputes them)
- Under-reporting eased over the recovery but stayed large for business and farm income

APPENDIX

The personal credit

Band (EUR)	Published reductions	Observed credit	Ratio
0–5,000	1,155	1,145	0.991
5,000–12,000	4,754	4,735	0.996
12,000–16,000	1,679	1,676	0.998
16,000–26,000	2,073	2,069	0.998
26,000–40,000	411	408	0.993
40,000–60,000	110	109	0.993
60,000–100,000	36	36	0.996
100,000+	13	12	0.980

WHAT IS COMPARED

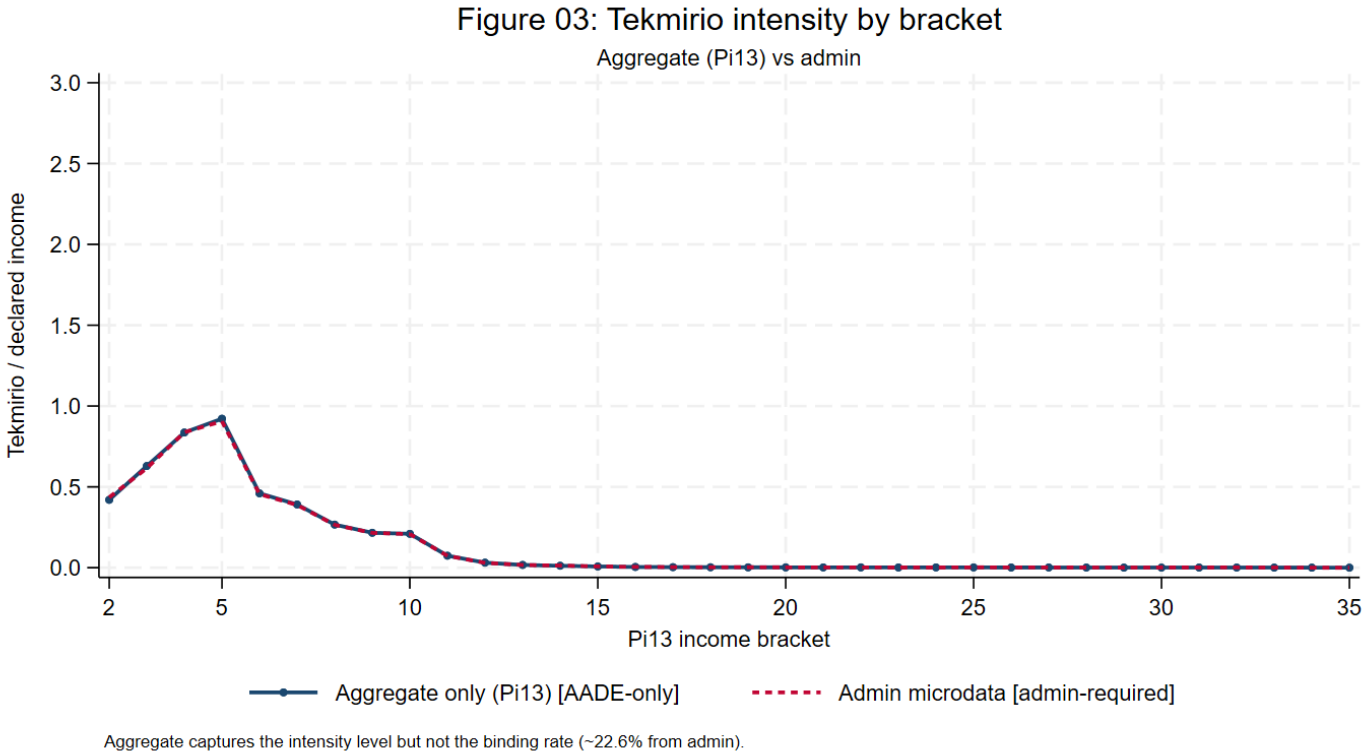
Binned data: schedule tax and assessed tax after reductions. Their difference is the relief the assessment applied; the credit itself is published only as one country total

Admin data: the credit as assessed in clearance, recorded per person. From the data, not simulated, and summed inside the same nine bands

Total: Observed credit EUR 10.19 billion vs the published receipts-credit line EUR 10.21 billion: ratio 0.998

- The credit creates the zero-tax threshold (EUR 8,636 for a childless filer)
- The largest kink in the 2019 schedule

Completing the bracket match: taxable and imputed income



Bracket (EUR)	Admin / Π13
0–1,000	1.000
8,000–9,000	1.000
39,000–42,000	1.012
170,000–180,000	0.986
450,000–500,000	1.048
900,000+	0.982

Taxable Income takes into account imputed income

All 66 brackets: median 0.993, min 0.959 (br. 550,000–600,000), max 1.048 (br. 450,000–500,000)

Pre-credit tax, credit, total tax: admin sample vs published П2Г and П2Δ

Computation line	Heads: median	p10–p90	Spouses: median	p10–p90
Pre-credit assessed tax	0.993	0.97–1.01	0.995	0.93–1.03
Personal credit	0.986	0.94–1.01	0.993	0.94–1.02
Total tax	0.992	0.95–1.02	0.996	0.93–1.05

Ratios of observed to published totals across the 67 brackets of П2Г (heads) and П2Δ (spouses). Banded on declared income, the bracketing variable of the П2 tables (bracket-mean test: 66/66 in-bin). Design weights.

WHAT IS COMPARED

П2Г and П2Δ publish the full tax computation on the same 67-bracket grid as П13. Observed counterparts from the extract: the pre-credit source taxes summed, the assessed credit, the assessed total tax.

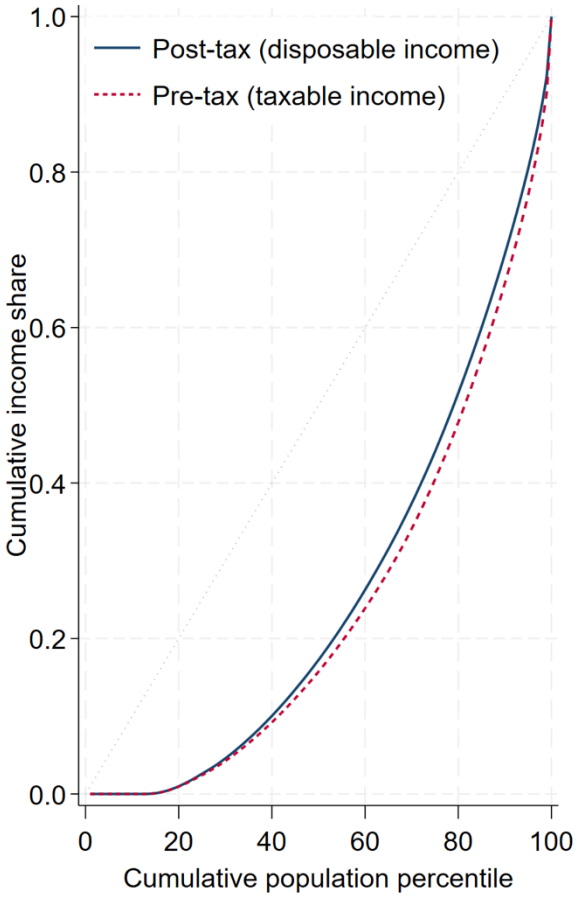
The comparison itself established what the published 'schedule tax' line is: the TOTAL pre-credit assessed tax. Summing only the wage/business/farm taxes reaches 0.84 of it; adding the rental, capital and other pre-credit taxes closes to 0.99.

WHAT IT SHOWS

Each line of the tax computation, taken separately, sits at 0.98 to 1.00 at the median across the 67 brackets, for heads and for spouses. The assessed micro-data reproduce the bulletin's computation line by line at the finest published resolution, completing the component validation of the previous slide.

Every line of the published computation is matched at every resolution. Next: the computation reproduced from the statutes alone.

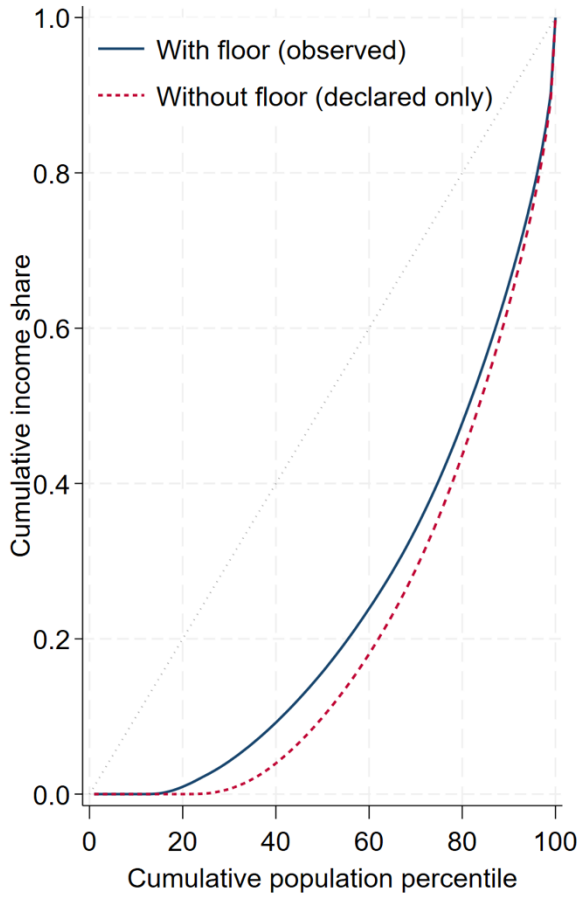
What the income tax does to inequality



- The same taxpayers before and after the income tax
- The post-tax curve is a bit closer to the diagonal, but the gap is small
- Although progressive, very modest: it removes 0.034 Gini points (Reynolds-Smolensky)
- Redistribution sits at the top incomes
- The bulletin-only reconstruction gives the same redistribution so it extends to 2012-2021

Taxable to disposable	Pre-tax	Post-tax
Gini	0.51	0.48
Top-1% share	9.7%	7.6%

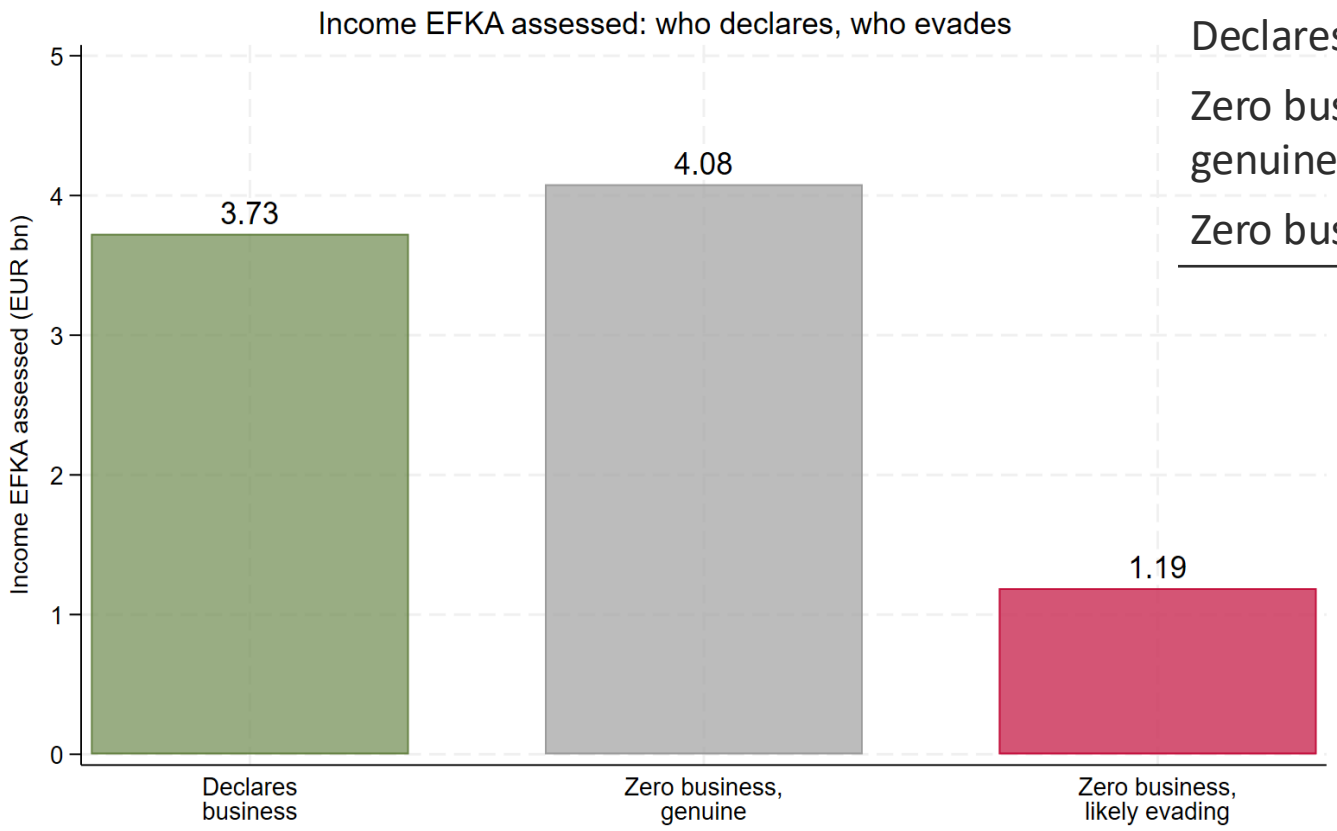
Lorenz curves: Taxable vs imputed income



- The cumulative share of income against the cumulative share of taxpayers, poorest to richest
- The further from the diagonal the more unequal
- Imputed income partially corrects for inequality but only in the middle incomes
- The level is reproducible from the public data so the comparison extends to 2012-2021

Taxable income	Declared	With floor
Gini	0.58	0.51
Bottom-50% share	10%	16%
Top-1% share	10.5%	9.7%

Self-employed: income EFKA assessed but not declared



Group	Income€bn	Evaded€bn	filers
Declares business	3.73	0.00	28,887
Zero business, genuine	4.08	0.00	58,395
Zero business, evading	1.19	1.19	7,165

- The likely-evading group omits about EUR 1.19 billion of EFKA-assessed income
- This figure is close to the EUR 1.21 billion extensive margin from the tekmirio method