Introducción

Economía Pública: Impuestos

Clase 1

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DECRG, World Bank

[1]Thanks to Emmanuel Saez for sharing his teaching slides, many of which are reproduced in this course.

About me

- Research Economist at DECRG, World Bank [2023-present]
- Research Associate, Institute for Fiscal Studies (IFS) [2020-present]
- Assistant Professor at Uni of Nottingham [2020-2023]
- Ph.D. in Economics, UC Berkeley (Advisors: Saez, Auerbach, Yagan)
  - **Dissertation:** "Behavioral Responses of Workers and Businesses to Tax and Transfer Policies" [2020 NTA's Outstanding Dissertation Prize]
- I do empirical tax/spending research combining:
  - **Policy changes**
  - **Administrative data**
  - **Quasi-experimental methods**

Research Experience: Taxes and Topics

1. **Personal Income Tax**
   → Employer-Employee Responses to a PIT holiday ▸

2. **Monotributo**
   → Responses of the Self-Employed (bunching) ▸

3. **Wealth Tax**
   → Voluntary Disclosure Programs and Offshore Evasion ▸

4. **Turnover Tax (Ingresos Brutos)**
   → Tax Withholding and Compliance ▸

5. **Value-Added Tax (and price controls)**
   → Price (pass-through) and Consumption Responses ▸ ▸

6. **Municipal Property Tax**
   → Property Tax Compliance and Enforcement ▸

Logistics for EPI

- **Lectures:**
  - Mondays 5pm-7pm on Zoom
- **Office Hours:** by appointment
- **Material:** everything posted on my webpage
- **Assessment:**
  1) In-class pop-up quizzes
  2) Referee report
  3) Research proposal
- *Important dates:* : March 1, 4, 11, 18, 25.

  April 1st is a holiday (asynchronous material?)

PUBLIC ECONOMICS

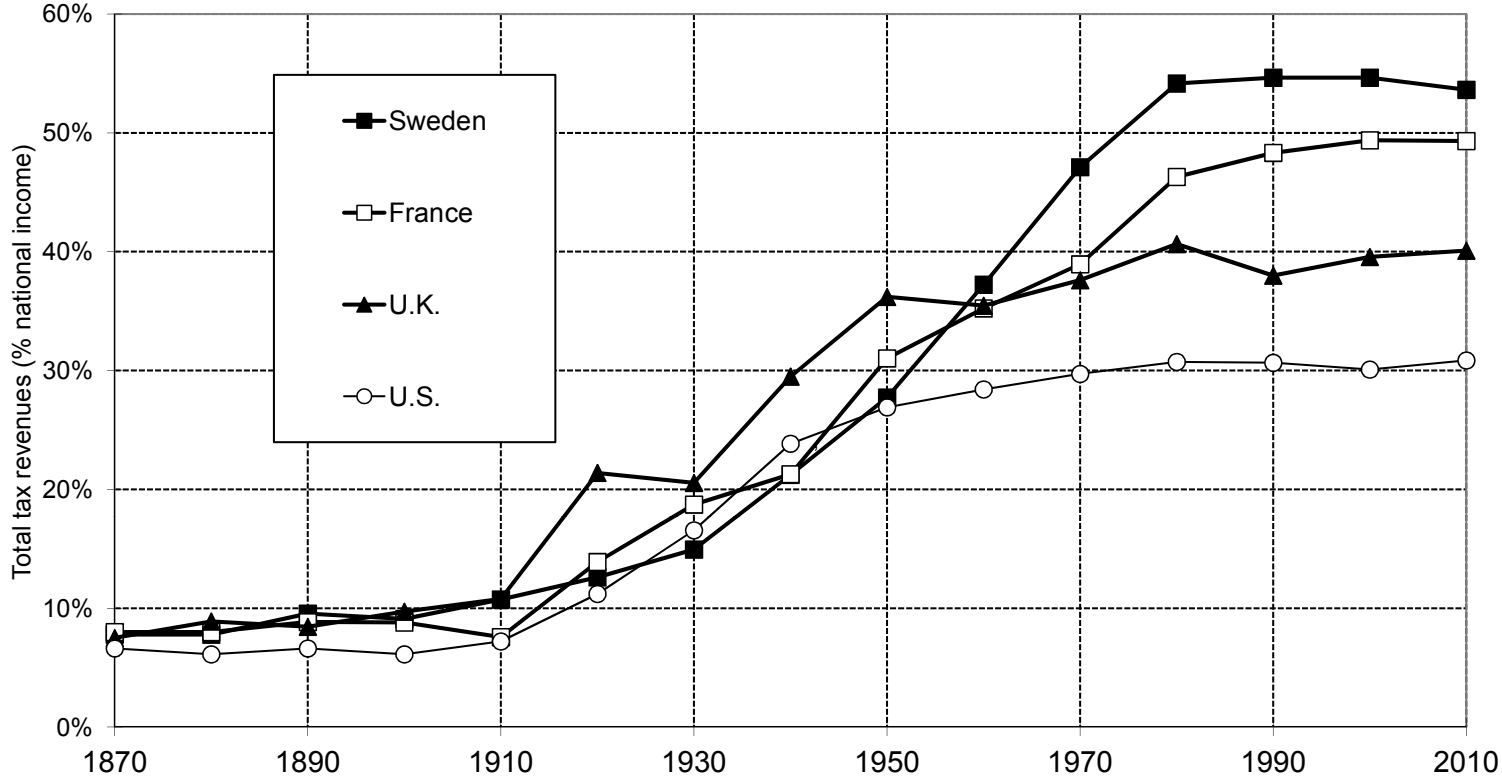
It studies the Role of the Government in the Economy

Government is instrumental in most aspects of economic life:

1) Government in charge of huge **regulatory** structure
2) **Taxes:** governments in advanced economies collect 30-50% of National Income in taxes (much less in developing countries)
3) **Spending:** taxes fund **public goods** (infrastructure, public order and safety, defense) and **social state** (Education, Retirement benefits, Health care, Income support)
4) Macro-economic **stabilization** through central bank (interest rate, inflation control), fiscal stimulus, bailout policies

$\Rightarrow$ We pool a large share of our incomes through government

Figure 13.1. Tax revenues in rich countries, 1870-2010

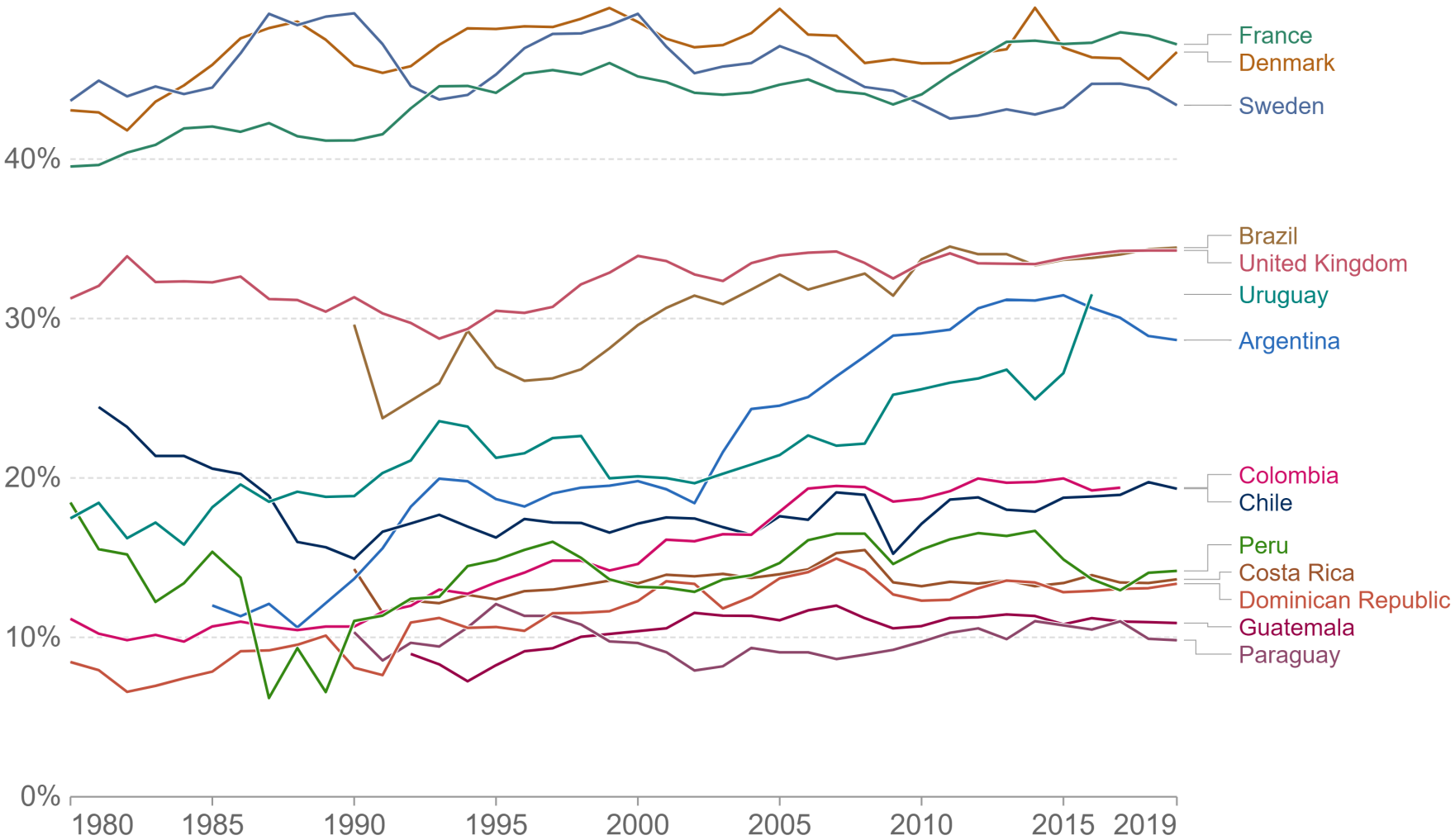


Total tax revenues were less than 10% of national income in rich countries until 1900-1910; they represent between 30% and 55% of national income in 2000-2010. Sources and series: see piketty.pse.ens.fr/capital21c.

Source: Piketty (2014)

Total tax revenues, 1980 to 2019

Total revenue from social contributions, direct and indirect taxes given as share of GDP.



Source: ICTD/UNU-WIDER Government Revenue Dataset, August 2021

OurWorldInData.org/taxation/ • CC BY

Bigger view on government (Saez, 2021)

Economists have a narrow-minded view of individual behavior: purely selfish and economically rational interacting through markets $\Rightarrow$ Limitation to fully understand **public economics**

Social interactions are critical for humans: we naturally cooperate at many levels: families, workplaces, communities, nation states with very strong/versatile in-group attachments

We produce in teams and then we have to split production $\Rightarrow$ We are cooperative and sensitive to distribution

Archaic human societies depended on social cooperation for protection and taking care of the young, sick, and old

$\Rightarrow$ Explains best why our modern nation states provide defense and education, health care, and retirement benefits

More modest role for economists

Replacing social institutions by markets does not always work:

Education: is primarily government funded: student loans work in economic theory but in practice end up being a huge lifetime burden. For-profit education has a tendency to become a scam

Retirement benefits: Saving for your own retirement works in theory but in practice most people unable to do so unless institutions (government/employers) help them

Health care: Health care relies heavily on government/employers support everywhere. People are not able to afford or shop rationally for health care

Economists can still play a useful role in understanding when markets can help and how individualistic forces can undermine institutions

Three questions in public economics

1) When should the government intervene in the economy?

2) What is the effect of those interventions on economic outcomes?

3) Why do governments choose to intervene in the way that they do? Political economy (e.g., voters' preferences)

1) When should the government intervene in the economy?

Economists' traditional view:

1) Market Failures: Market economy sometimes fails to deliver an outcome that is efficient

$\Rightarrow$ Government intervention may improve the situation

2) Redistribution: Market economy generates substantial inequality in economic resources across individuals

Inequality is an issue because we are "social beings"

$\Rightarrow$ People willing to pool their resources (through government taxes and transfers) to help reduce inequality

Main Market Failures

1) Externalities: (example: greenhouse carbon emissions) $\Rightarrow$ require govt interventions (such as corrective taxation)

2) Imperfect Competition: (example: monopoly) $\Rightarrow$ requires regulation (typically studied in Industrial Organization)

3) Imperfect or Asymmetric Information: (example: health insurance markets are subject to death spirals)

4) Individual Failures: People do not behave as "fully rational individuals". This is analyzed in behavioral economics a field in huge expansion (e.g., myopic people may not save enough for retirement)

Inequality and Redistribution

Even if market outcome is efficient, society might not be happy with the market outcome because market equilibrium might generate very high economic disparity across individuals

Governments use taxes and transfers to redistribute from rich to poor and **reduce inequality**

Redistribution through taxes and transfers might reduce incentives to work (**efficiency costs**)

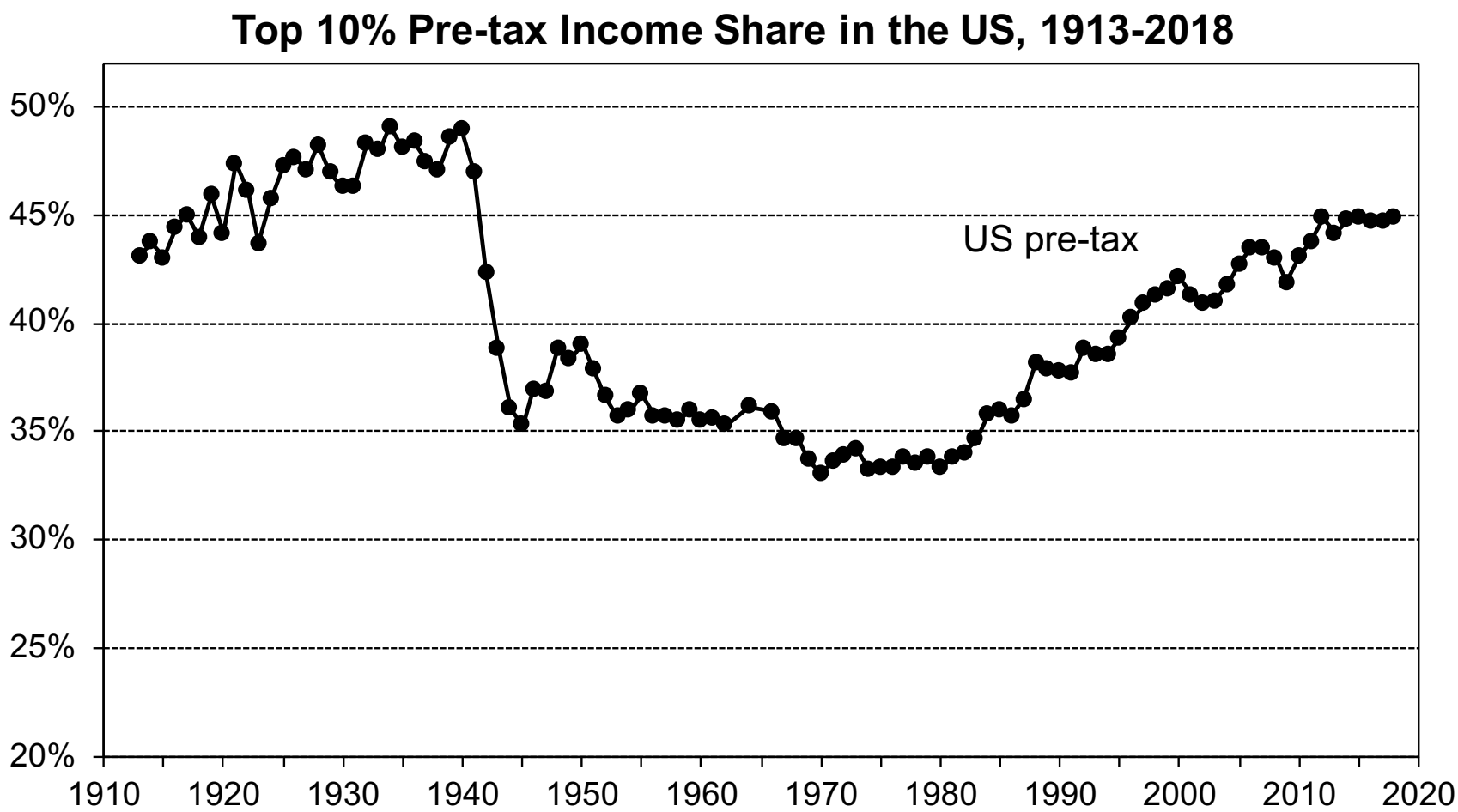
$\Rightarrow$ Redistribution creates an **equity-efficiency trade-off**

Income inequality has soared in the United States in recent decades, and has moved to the forefront in the public debate (Piketty's 2014 book success, stats from Piketty-Saez-Zucman '18)

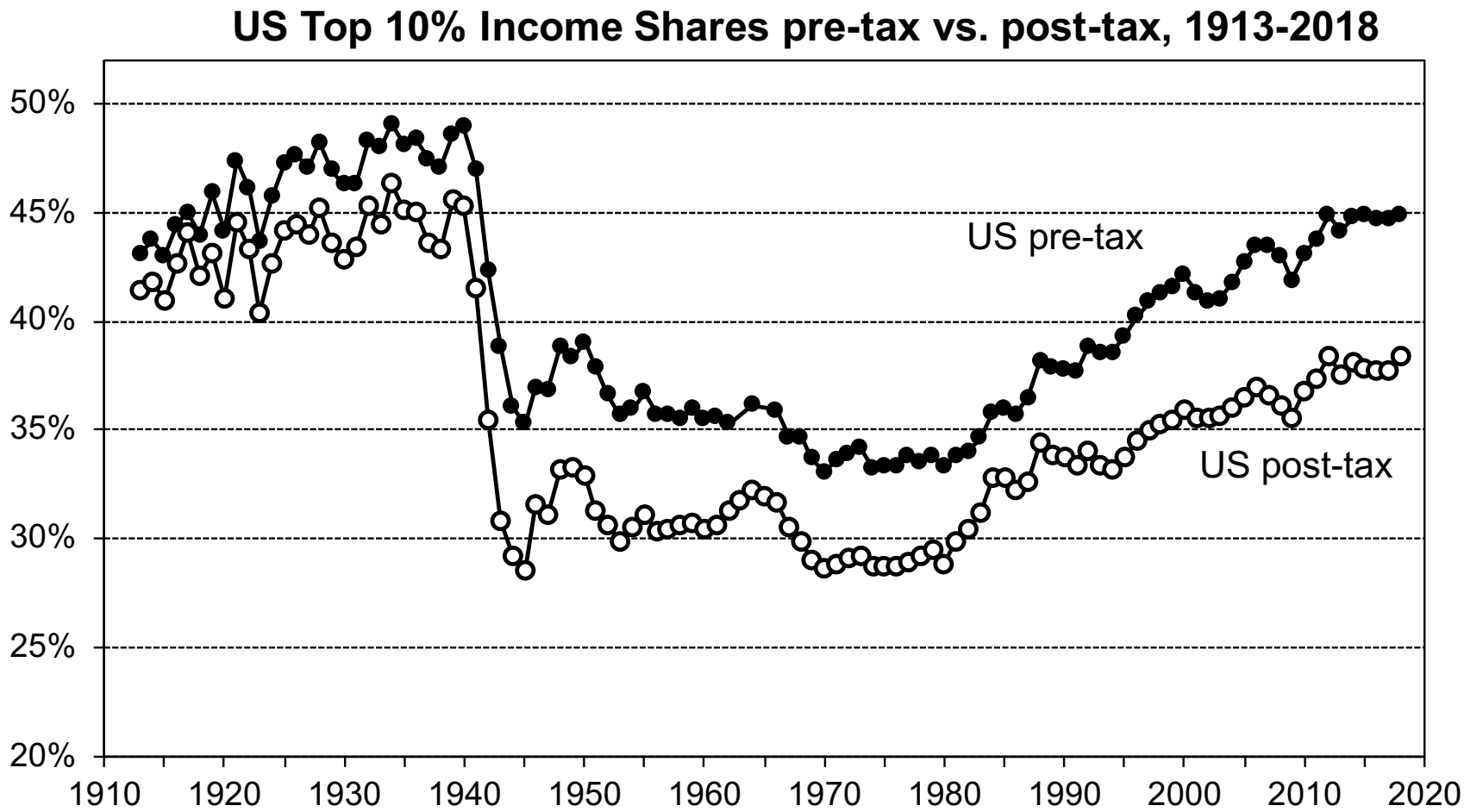
Redistribution with Taxes and Transfers

Govt taxes people based on income & consumption and provides transfers: z is pre-tax income, $y = z - T(z) + B(z)$ is post-tax income

1) If inequality in y is less than inequality in $z \Leftrightarrow$ tax and transfer system is redistributive (o progressive)
2) If inequality in y is more than inequality in $z \Leftrightarrow$ tax and transfer system is regressive



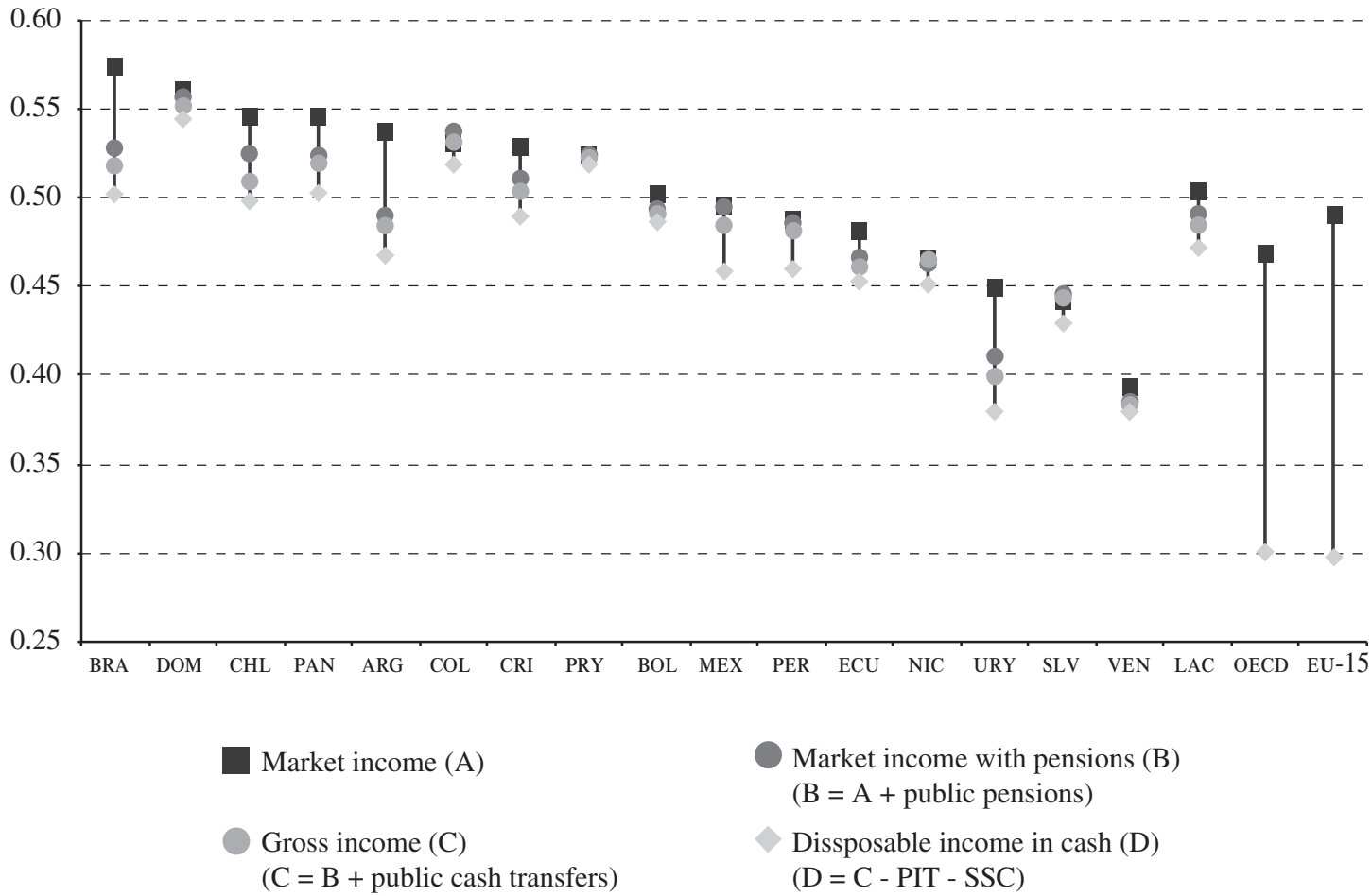
Top income shares of pretax national income among adults aged 20+ (income within couples equally split).
Source is World Inequality Database wid.world (from Piketty, Saez, Zucman 2018).



Top income shares of pretax and posttax national income among adults (income within married couples equally split). Source is Piketty, Saez, Zucman (2018) for US and Piketty et al. (2020) for France.

Latin America (17 countries), OECD and 15 European Union countries: inequality of market income, gross income and disposable income, around 2011

(Gini coefficients)



Source: CEPAL, Review 116, August 2015

- Fiscal policy benefits LA region mainly through **pensions and transfers**
- **Income tax and SSC** have a much more limited role

2) What Are the Effects of Alternative Interventions?

1) Direct Effects: The effects of government interventions that would be predicted if individuals did not change their behavior in response to the interventions.

Direct effects are relatively easy to compute

2) Indirect Effects: The effects of government interventions that arise only because individuals change their behavior in response to the interventions (sometimes called **unintended effects**)

Empirical public economics analysis tries to estimate indirect effects to inform the policy debate

Example: increasing top income tax rates mechanically raises tax revenue but top earners might find ways to evade/avoid taxes, reducing tax revenue relative to mechanical calculation

Normative vs. Positive Public Economics

Normative Public Economics: Analysis of How Things Should be (e.g., should the government intervene in health insurance market? how high should taxes be?, etc.)

Positive Public Economics: Analysis of How Things Really Are (e.g., Does govt provided health care crowd out private health care insurance? Do higher taxes reduce labor supply?)

Positive Public Economics is a required 1st step before we can complete Normative Public Economics

Positive analysis is primarily empirical and Normative analysis is primarily theoretical

REGULATORY ROLE OF THE GOVERNMENT

Another critical role the government plays in all nations is that of *regulating economic and social activities*. Examples:

1) **Salario Mínimo**

2) **ANMAT** controla calidad de Medicamentos, Alimentos y Tecnología Médica

3) **Superintendencia de Riesgos del Trabajo (SRT)** regula los ambientes laborales y ARTs

4) **Ministerio de Ambiente y Desarrollo Sostenible** regula todos los temas relacionados al medio ambiente (contaminacion, etc)

Etc.

OVERVIEW OF ARGENTINA'S INCOME TAX AND TRANSFERS

Paying personal taxes in Argentina: 3 regimes

- **Wage earners:**
  - SSC: employee (14% + 3% capped); employer (17-21% + 6%)
  - Income Tax: progressive with large exemption floor (EITC $<$ floor)
- **Monotributo (self-employed)**
  - Simplified regime: 11 notches w/ progressive monthly fixed fee
  - Fee covers: SSC, Income Tax, VAT, Health Insurance
- **Autonomous (self-employed)**
  - General regime: subject to VAT, progressive Income Tax
  - SSC: 5 categories with monthly fixed fee (no health coverage)

Personal Income Tax (PIT)

Created in 1932 by Uriburu ("Impuesto a los Réditos", Law 11,682)

Perón renamed it "Impuesto a las Ganancias" in 1974 and extended it to high-wage earners

Argentina is one of the few countries that question the existence of this tax

Why is it so controversial?

Personal Income Tax (PIT)

Tortarolo (2018)

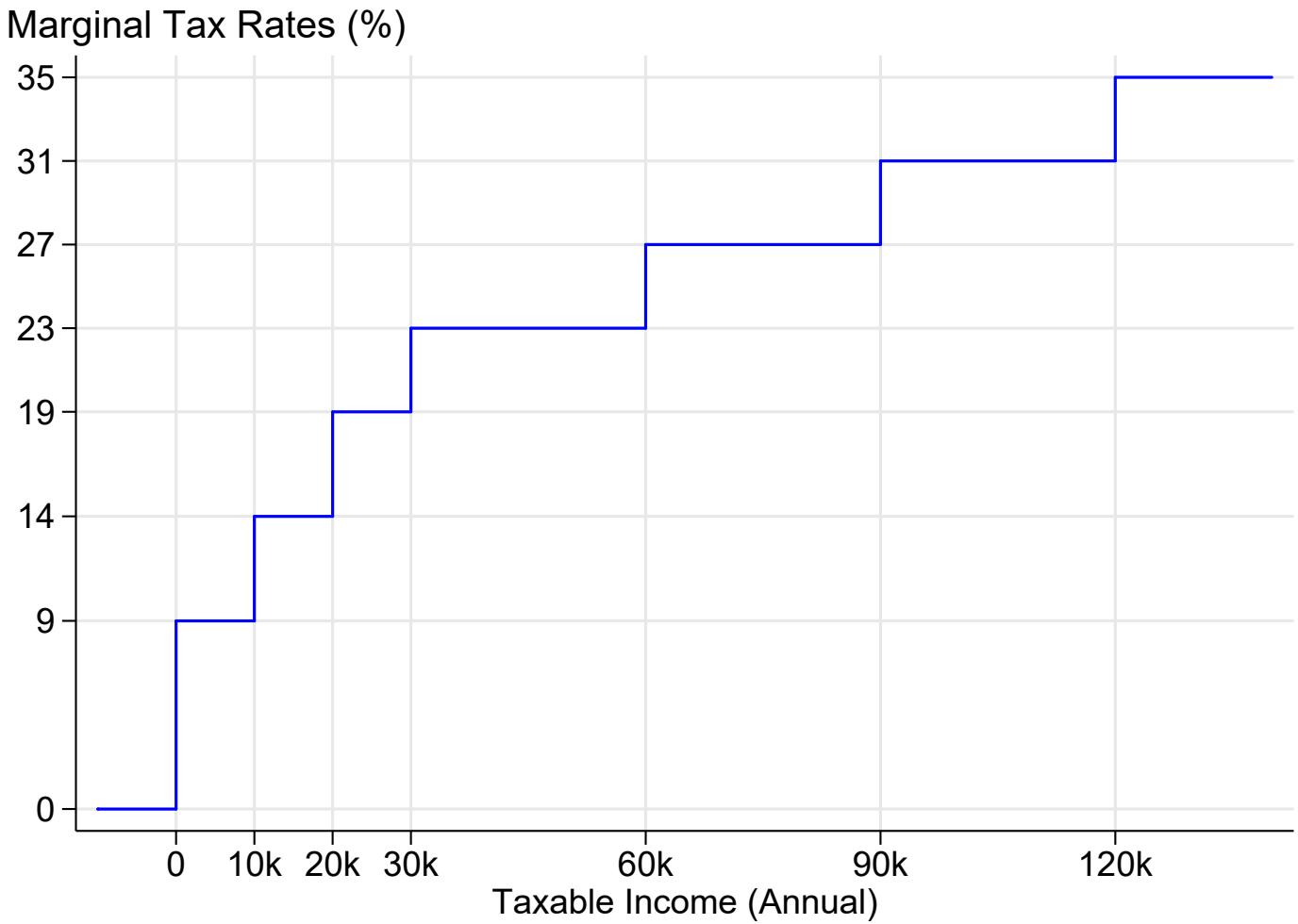
The 2nd most important tax after the VAT (37% vs 42% revenue in 2015)
Borne by high-income workers (∼top 10-20%)

- Individually based
- 4 sources of income: (1) rental income; (2) capital income; (3) business income; (4) wage earnings
- Progressive: 7 brackets and MTRs ranging from 9% to 35%
- Can deduct SSC, Personal Exemptions (spouse and dependents), General Deductions (mortgage interests, domestic service, etc)
- Has a large exemption floor (varies by # of dependents)
- Monthly withholding at source by employers (PAYE system like UK)
  - The amount to withhold depends on employees' **taxable income** = gross earnings - SSC - personal exemptions - general deductions

Table: PIT Schedule in Argentina (annual)

Annual Taxable Income		Annual Payment		
From AR$	To AR$	AR$	+	over AR$
0	10,000	-	9%	0
10,000	20,000	900	14%	10,000
20,000	30,000	2,300	19%	20,000
30,000	60,000	4,200	23%	30,000
60,000	90,000	11,100	27%	60,000
90,000	120,000	19,200	31%	90,000
120,000		28,500	35%	120,000

- Much better/transparent to use figures (get used to it!)

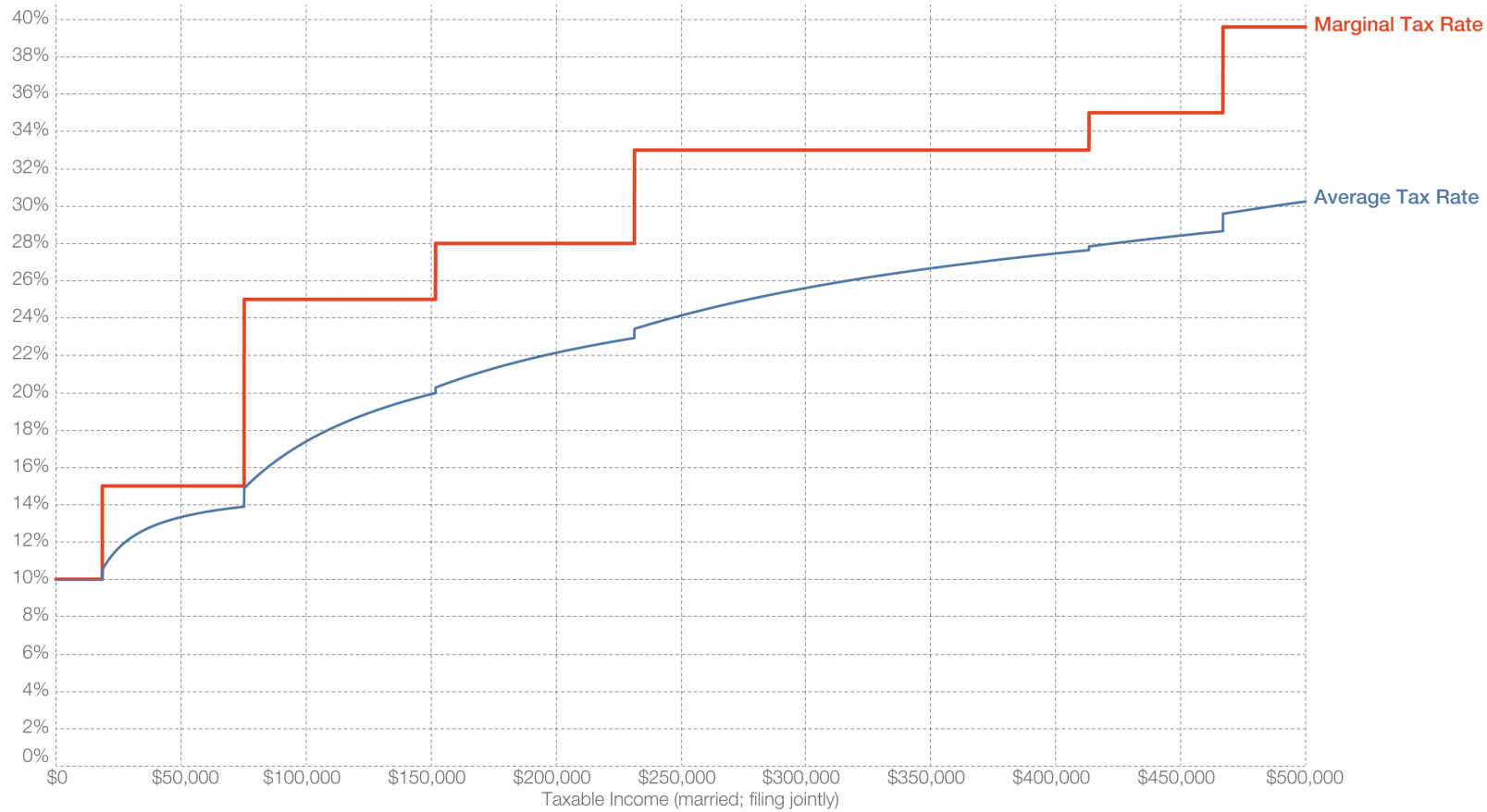


Digression 1: MTR vs ATR

- Important to understand the difference between **Marginal Tax Rate** (MTR) and **Average Tax Rate** (ATR)
- Check out this interesting visualization by Ortiz-Ospina and Roser
- Can you reproduce a figure like the one below for Argentina? E.g., make up some data in Stata and overlay MTR and ATR for a hypothetical worker (e.g., single without children)

Marginal and Average Tax Rate on Incomes in the US

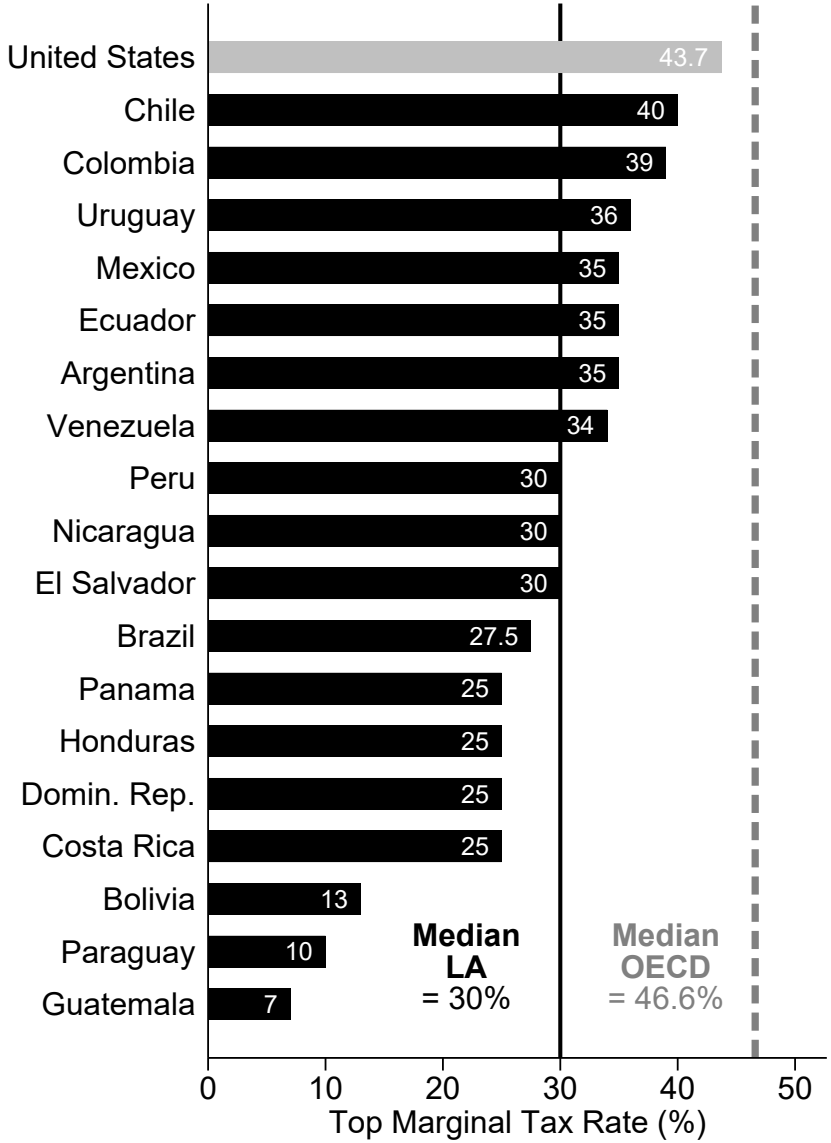
The average tax rate is calculated by dividing the total income taxes paid by the total income earned.
The marginal tax rate is the rate of tax applied to the last dollar added to the taxable income.
By definition, marginal rates apply only to the portion of taxable income that exceeds the lower income threshold for that marginal rate.
This visualization shows the two rates for the income of married couples (filing jointly) under the US federal income tax schedule for 2016.

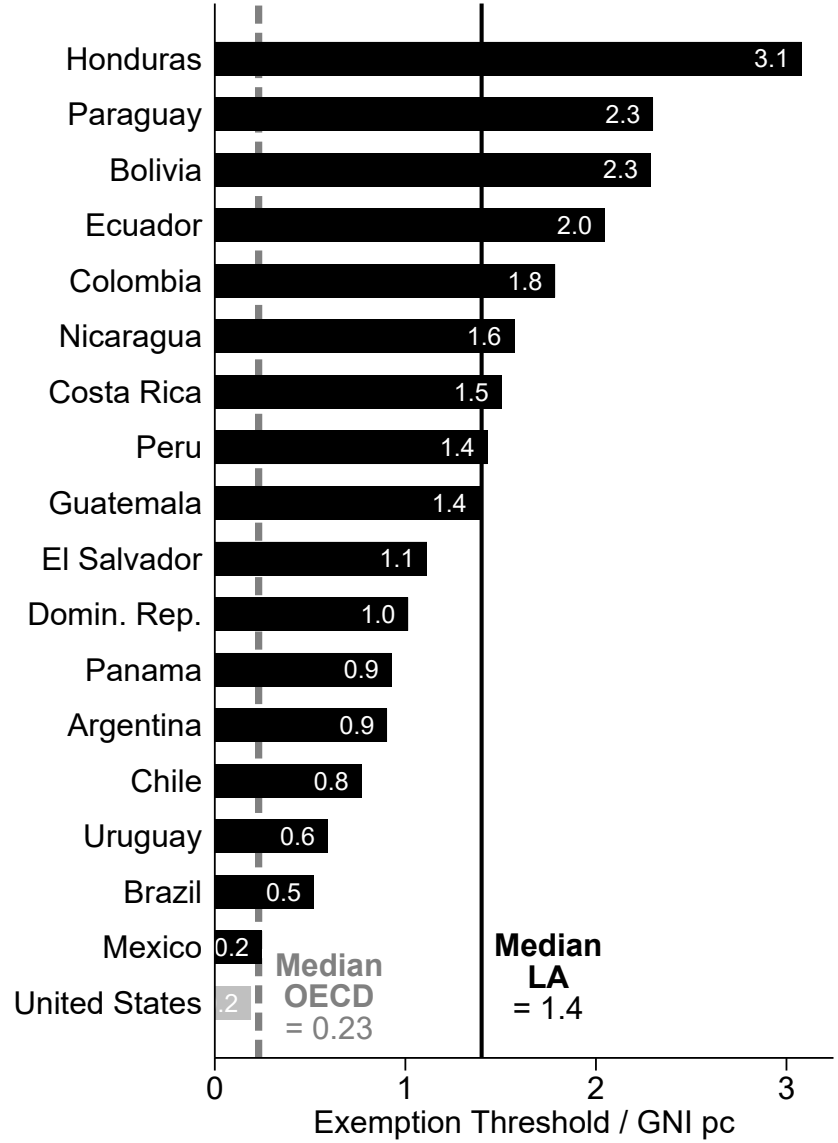


Data source: Tax Foundation (tax brackets for 2016)
The data visualization is published at OurWorldinData.org. There you find the raw data and more visualizations on this topic.

Digression 2: The PIT exempts most individuals and has low top MTRs in Latin America

- LA countries tax the rich at lower rates than the US
- Median top MTR in LA is only 30%, significantly lower than the OECD median of 46.6%
- The PIT in LA excludes a much larger % of people than in the US and other OECD countries
- Median exemption-to-GNIpc ratio in LA is 6 to 7 times larger than in the US and the OECD median





Source: Bérgolo, Londoño-Vélez, Tortarolo (2023)

Personal Income Tax (PIT)

Cumulative Withholding Method:

- Based on cumulated earnings, cumulated deductions, and withh's in previous months. E.g., taxable income in month M is

$$TI_{iM} = \sum_{t=1}^{M} z_{it} - \sum_{t=1}^{M} SSC_{it} - \frac{deductions}{12} \times M - \frac{exemptions}{12} \times M$$

$$Withholding_{iM} = Cumultax_{iM} - Cumultax_{iM-1}$$

- Workers must inform personal allowances and gral deductions to employer (form F.572 $\equiv$ form W-4 in the US)
- Employers must compute, file, and remit **every month** (form F.744 $\equiv$ form 941 in the US, filed quarterly)
- Allows for instant responses to taxation ($\neq$ IRS percentage method)
- Enforcement: active role of accountants

Table: PIT Schedule in Argentina (monthly version)

Taxable Income at M		Cumulated tax at month M		
From AR$	To AR$	AR$	+	over AR$
0	$833 \times M$	-	9%	0
$833 \times M$	$1{,}667 \times M$	$75 \times M$	14%	$833 \times M$
$1{,}667 \times M$	$2{,}500 \times M$	$191.67 \times M$	19%	$1{,}667 \times M$
$2{,}500 \times M$	$5{,}000 \times M$	$350 \times M$	23%	$2{,}500 \times M$
$5{,}000 \times M$	$7{,}500 \times M$	$925 \times M$	27%	$5{,}000 \times M$
$7{,}500 \times M$	$10{,}000 \times M$	$1600 \times M$	31%	$7{,}500 \times M$
$10{,}000 \times M$		$2375 \times M$	35%	$10{,}000 \times M$

Two decades of "bracket creep"

High inflation and no indexation: ↑ PIT ↓ progressivity

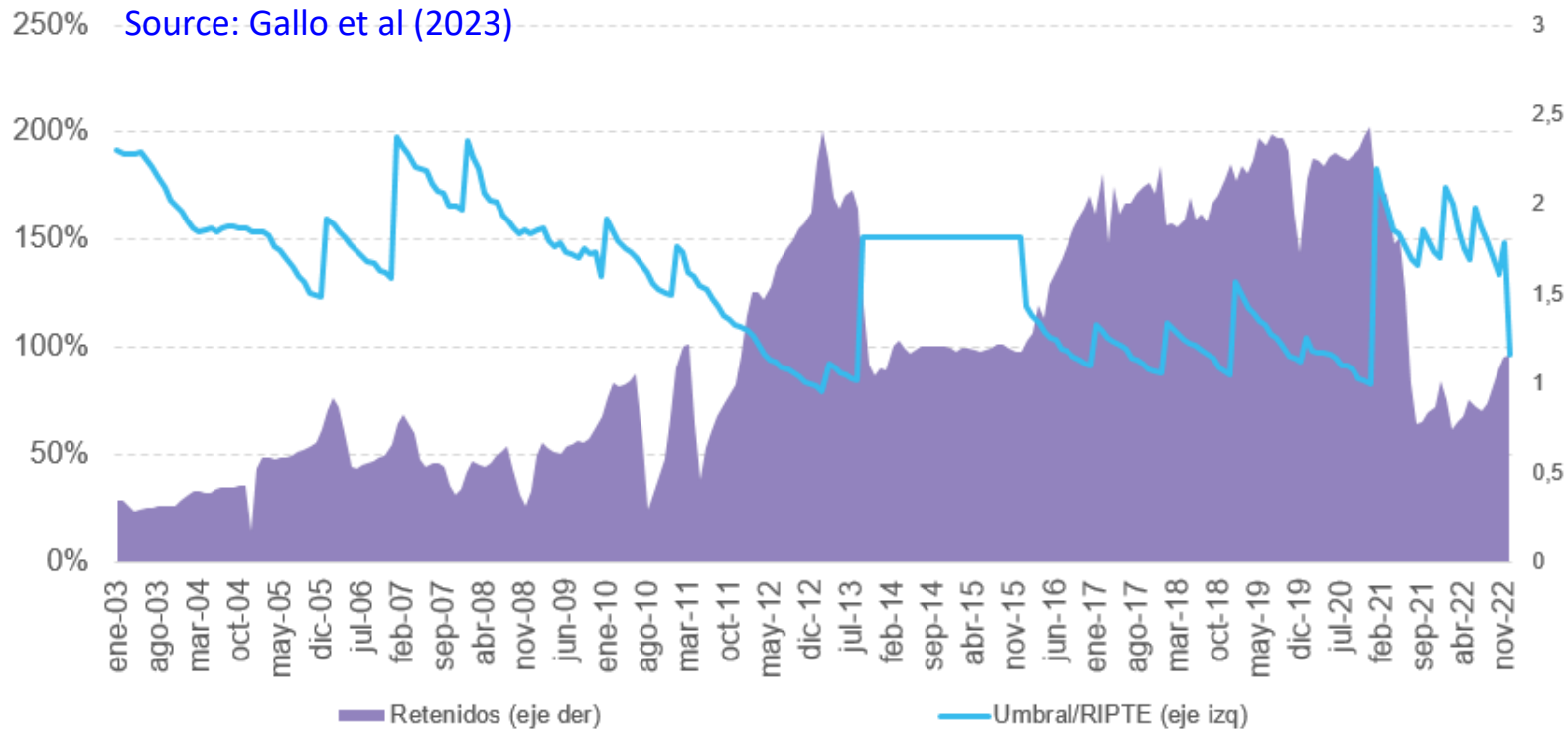
Δ in PIT in the last **2 decades** driven by:

1. **Inflation:** high and persistent ($> 20\%$ per year since 2007)
2. **Monthly Wages:** adjusted $2\times$ a year (tripartite negotiations)
3. **Tax Schedule:** fixed in nominal terms btw 2000 and 2016
4. **Exemptions:** partially adjusted, behind the increase of wages

$1. + 2. + 3. + 4. \Longrightarrow$ More taxpayers + Bracket Creep

FACT 1: Exemption floor lost real significance

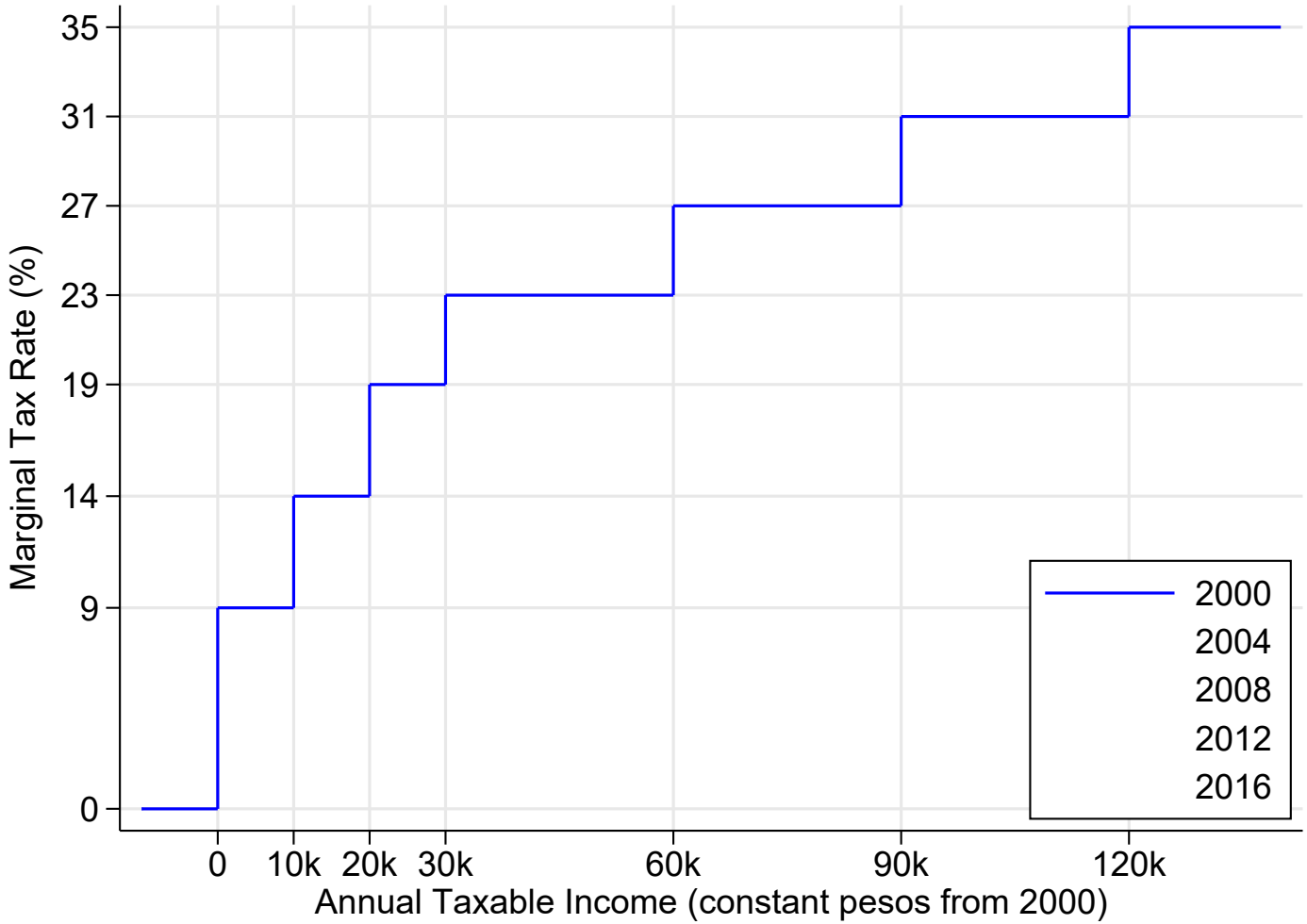
$\Rightarrow$ Number of income taxpayers quadruples!



Fuente: DICITA-SDG PLA- AFIP con base en datos de la AFIP y la OEDE.

FACT 2: Inflation reduced the significance of taxable thresholds

$\Rightarrow$ Massive bracket creep!



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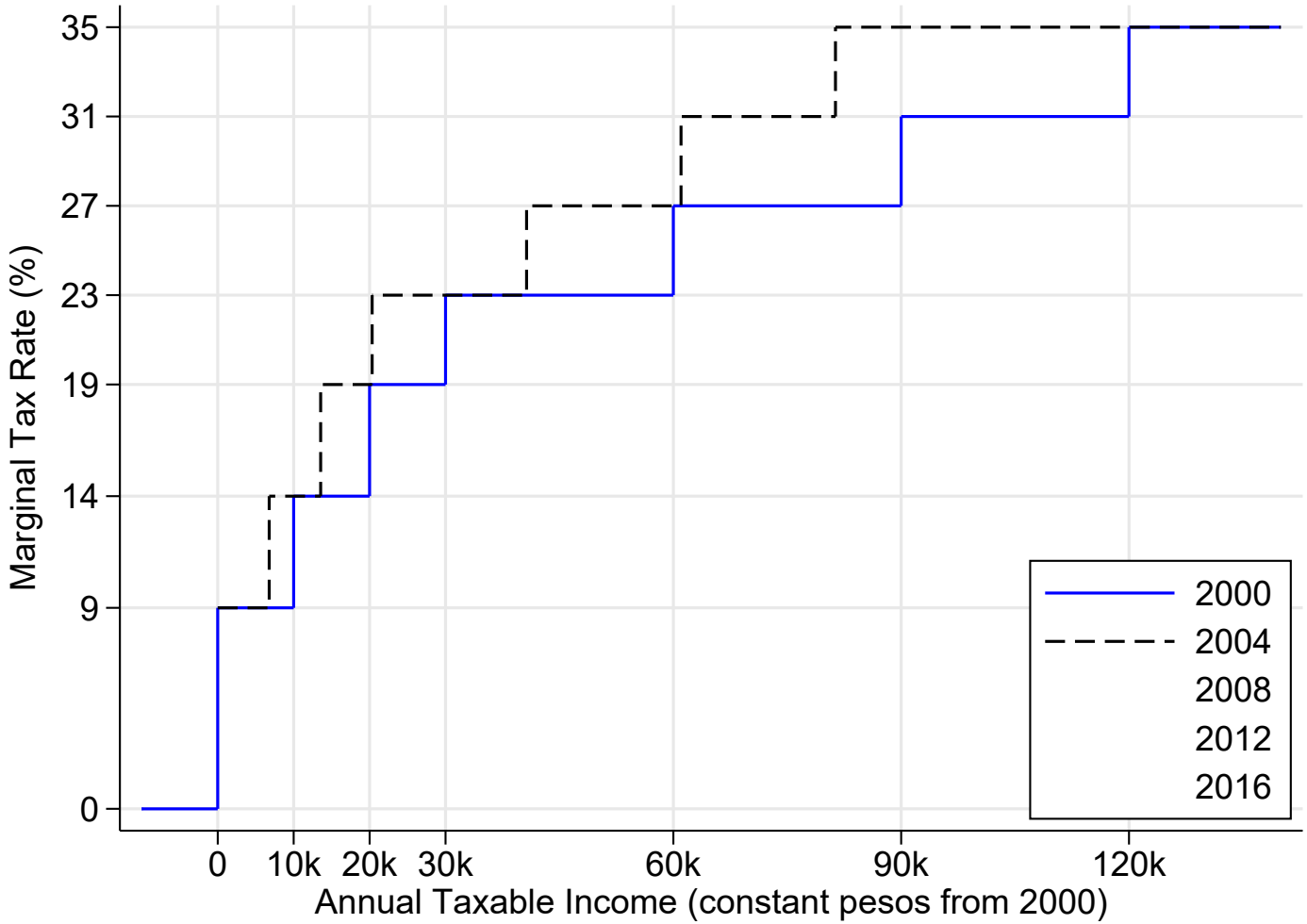

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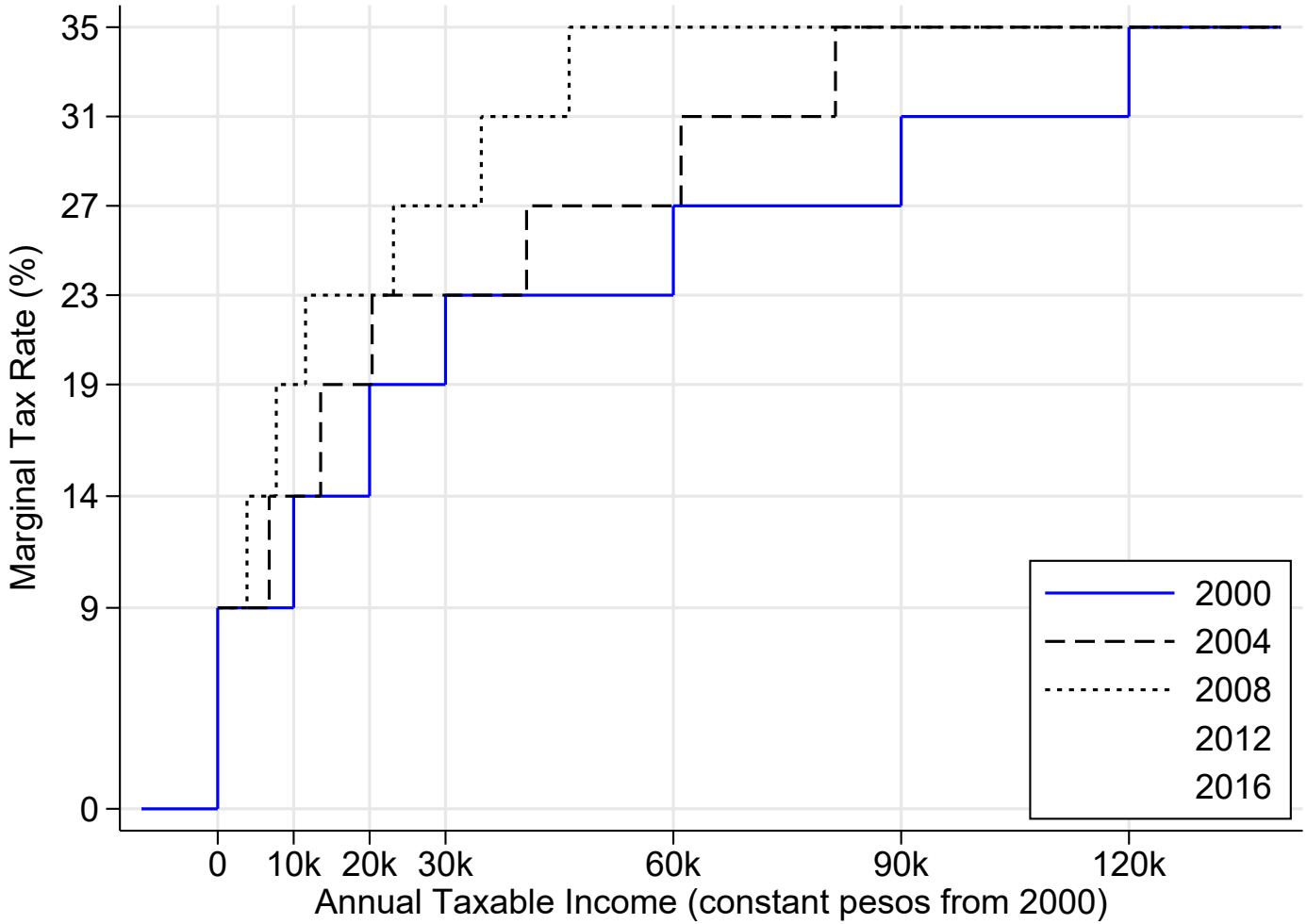

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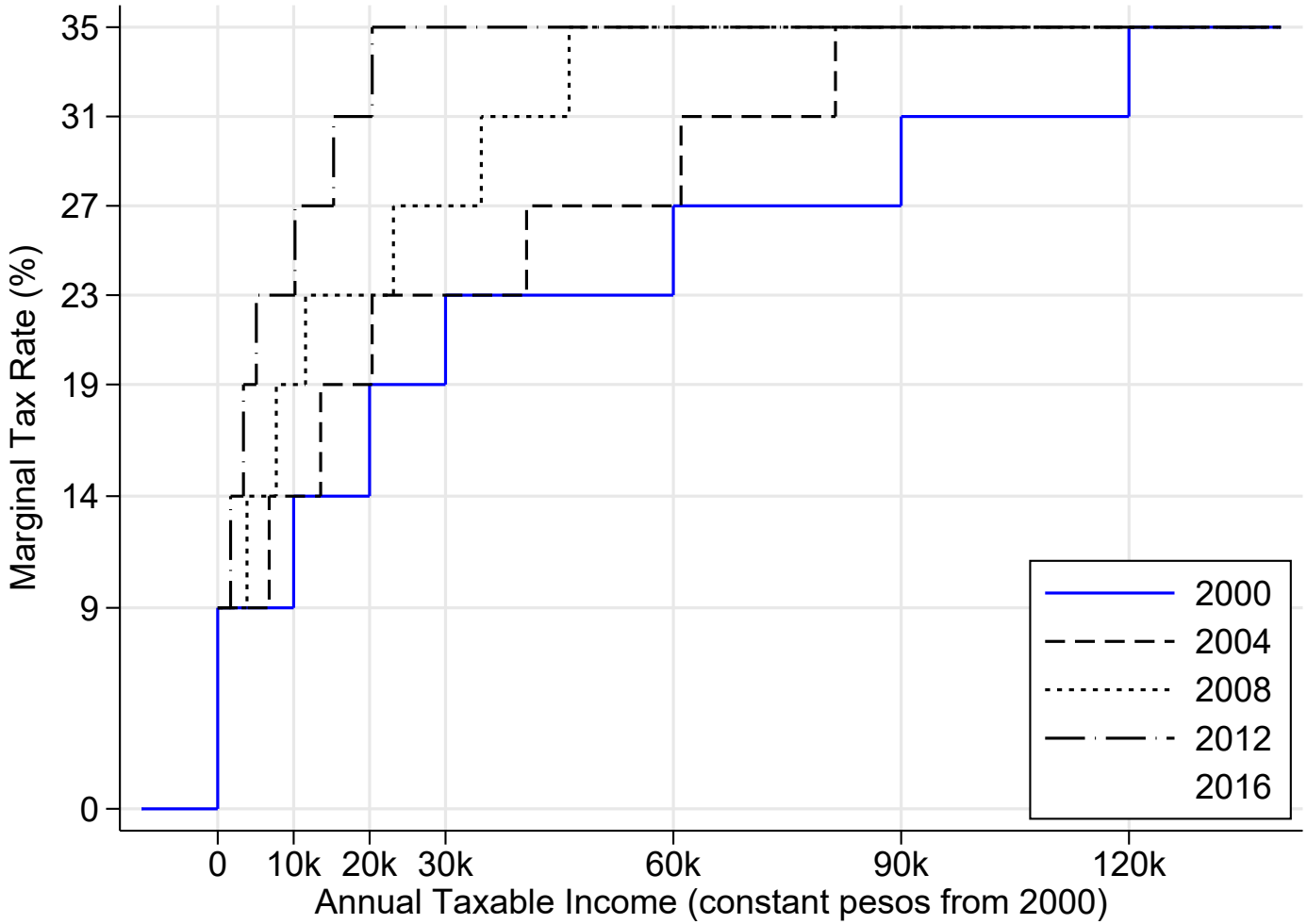

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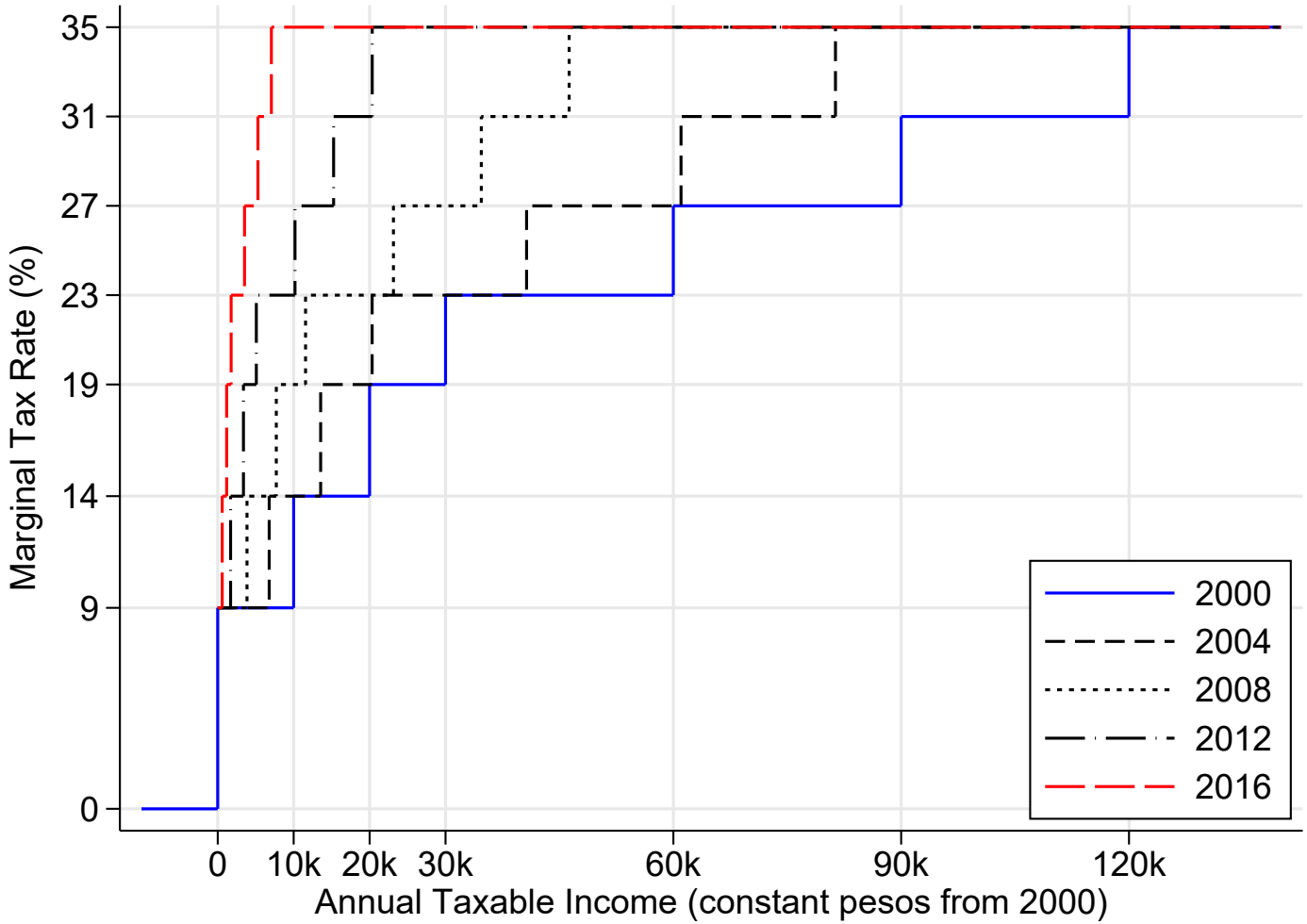

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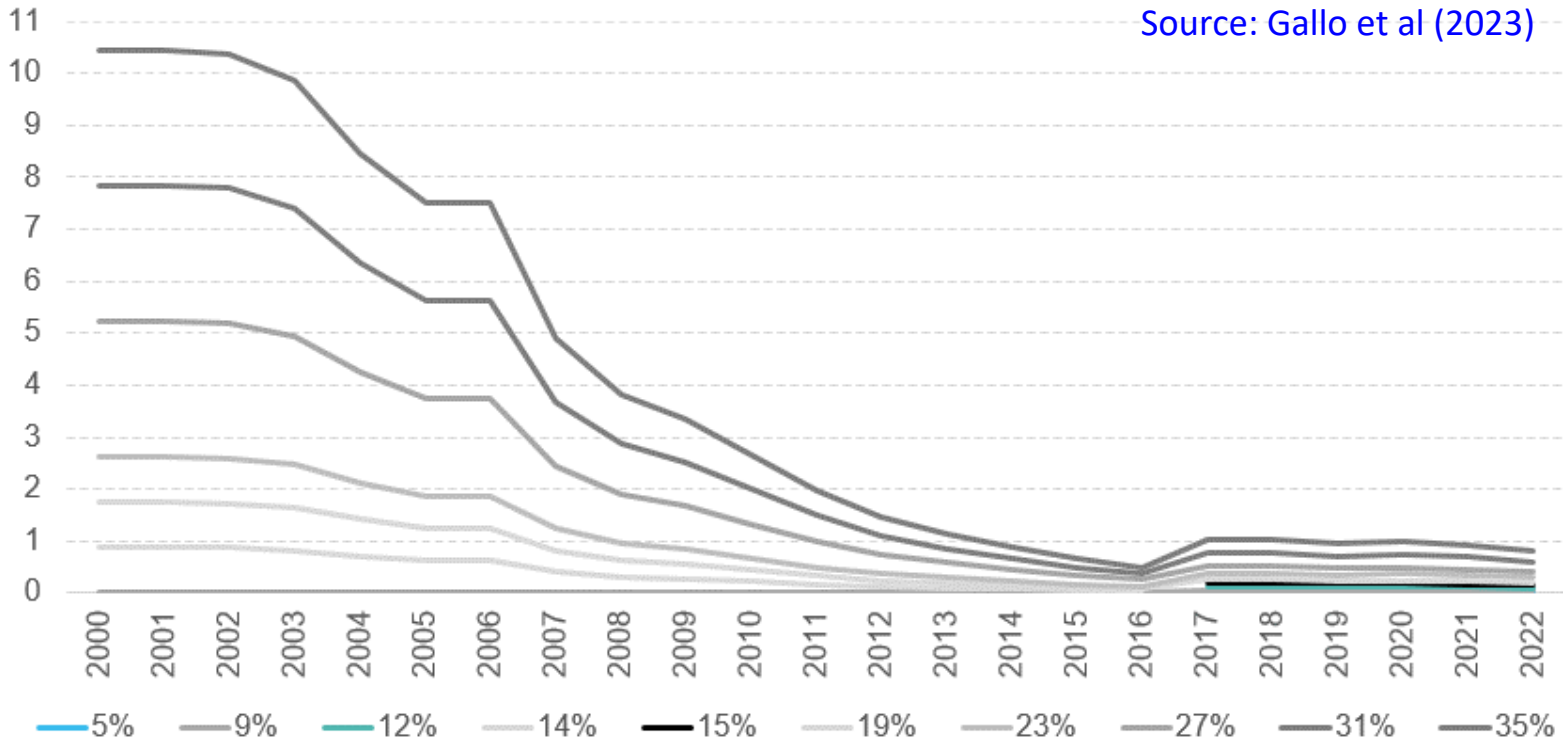
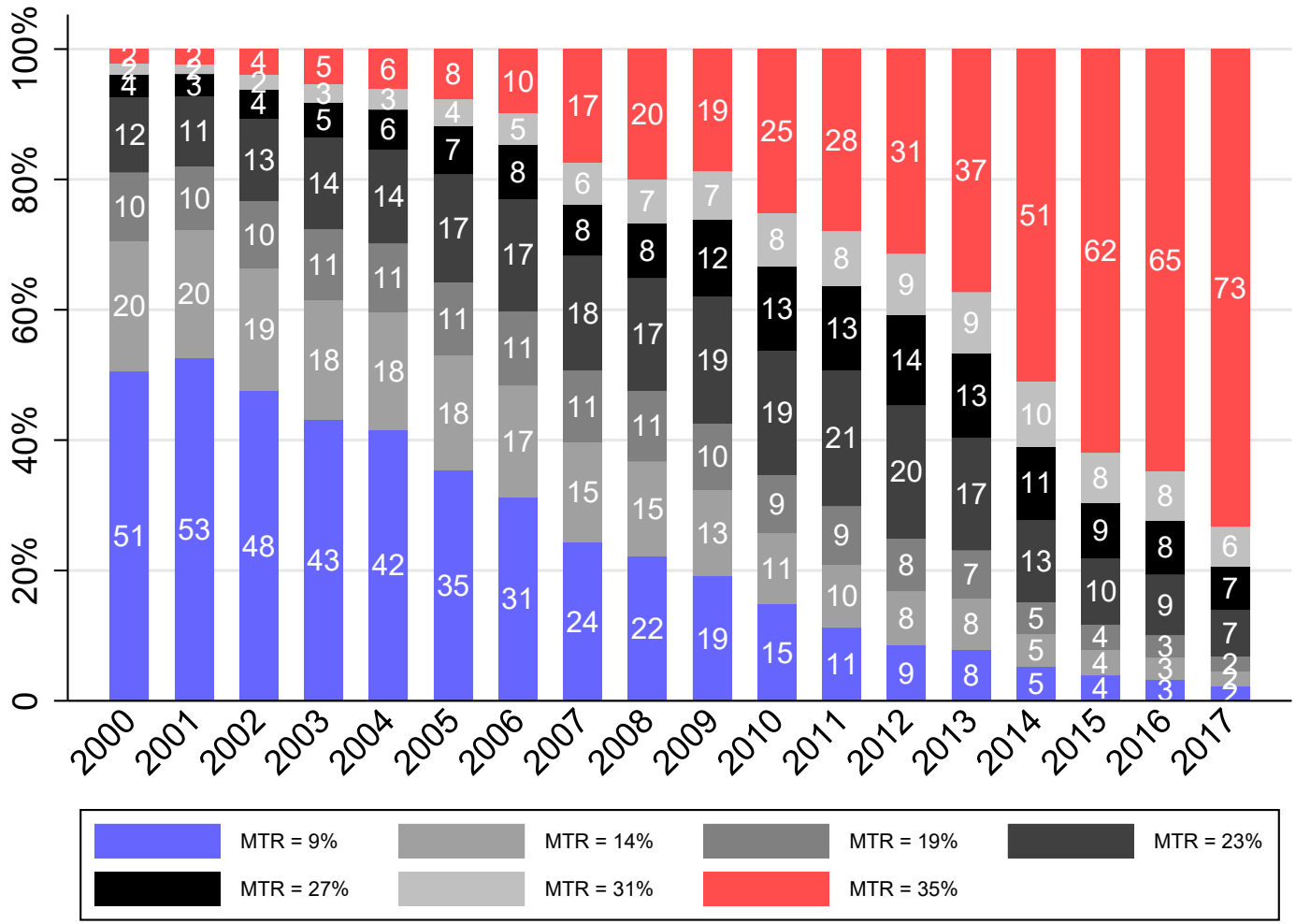


Fuente: DICITA-SDG PLA- AFIP con base en datos de la AFIP.

Bracket Creep: share of taxpayers by brackets 2000-2017



Bracket Creep: Argentina is not alone... the UK is undergoing a 6-year freeze that is set to cut thresholds' real value by 26%

Freezes to tax thresholds in April imply £500 more tax for basic rate taxpayers, and £1,000 more for higher rate taxpayers

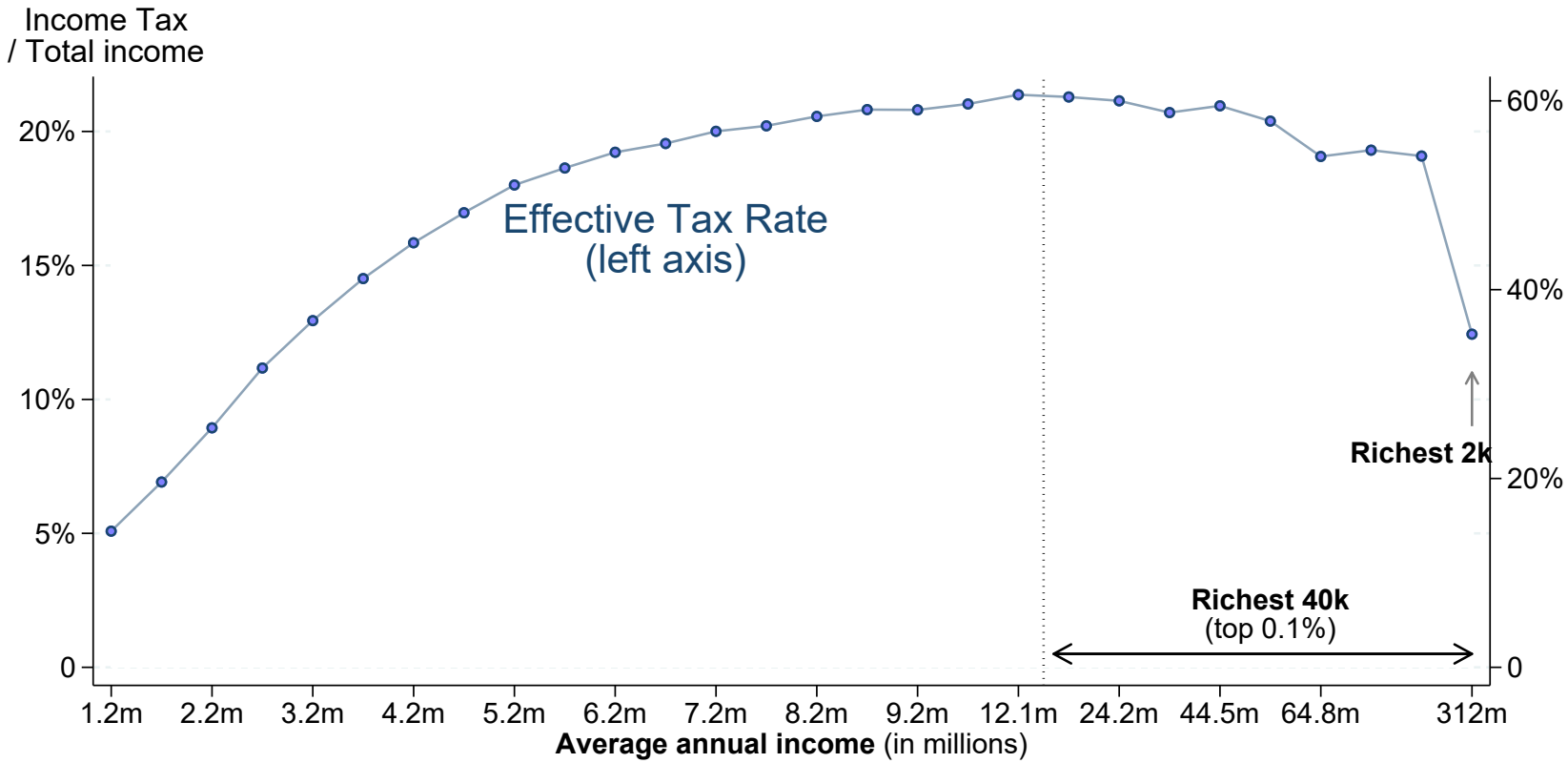
Notes: Includes changes to employer National Insurance contributions

IFS Institute for Fiscal Studies

UKRI Economic and Social Research Council

The income tax becomes regressive at the top (FY 2021)

Driven by pref tax rates on K income (note: wealth tax paid would offset part (all?) of it)



Source: Own elaboration based on AFIP's statistical yearbook FY 2021 which report income tax tabulations split into 30 bins of increasing income. The adult population aged 20+ is 31,583,402. N filers in 2021 = 859,873. Richest 40k account for 45% of PIT collected. Richest 2k (top 0.006%) account for 11% of PIT collected.

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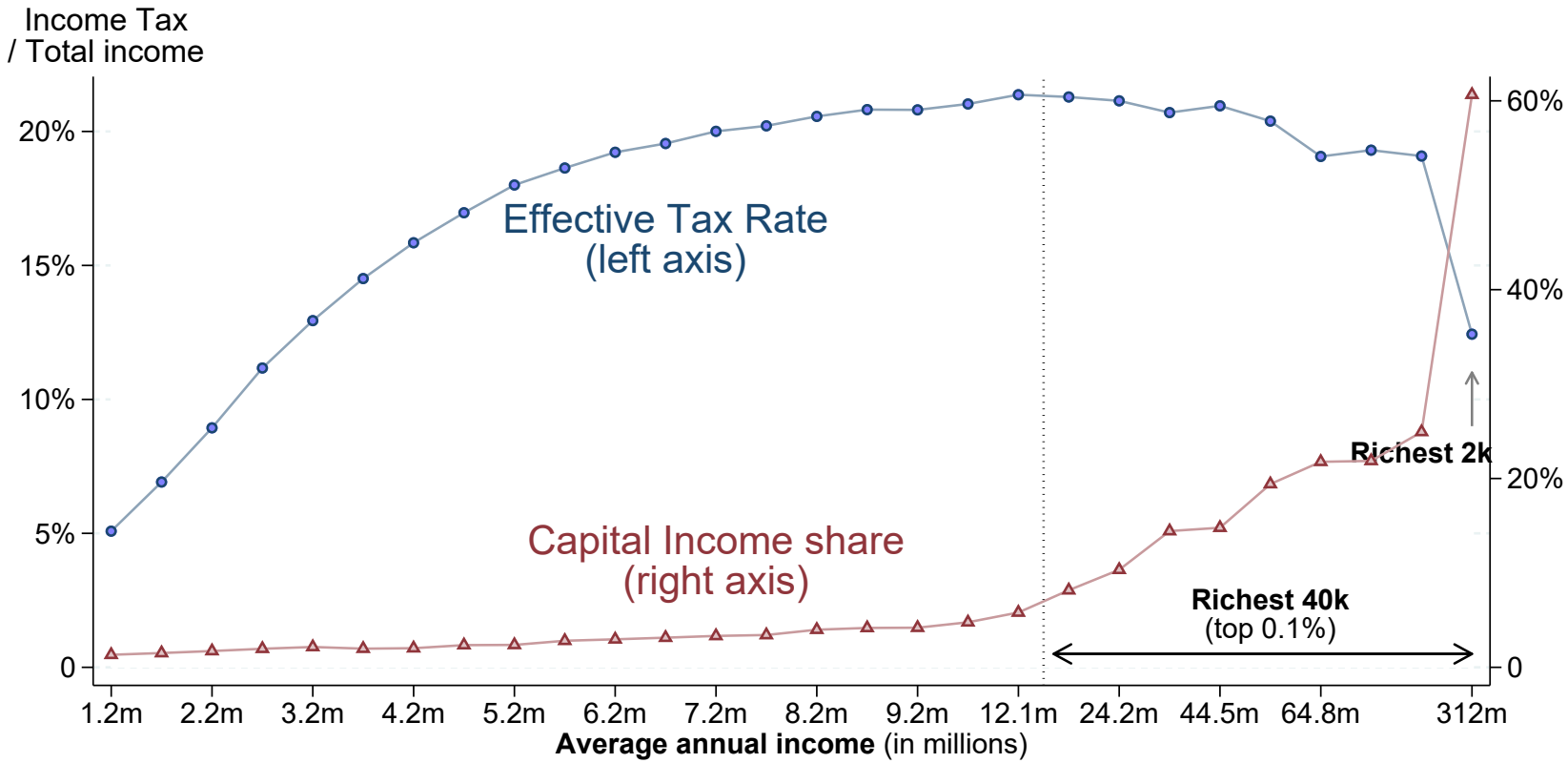

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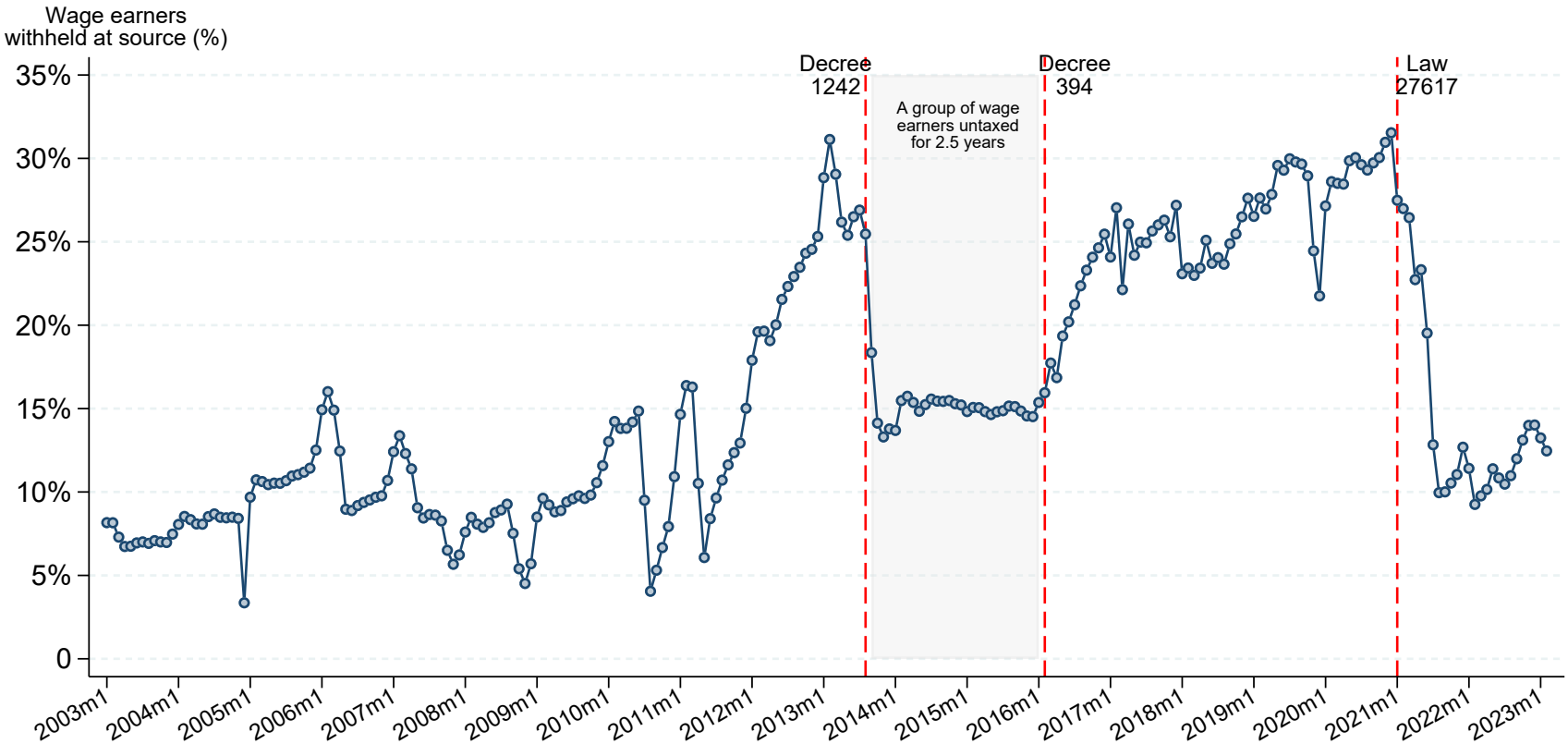
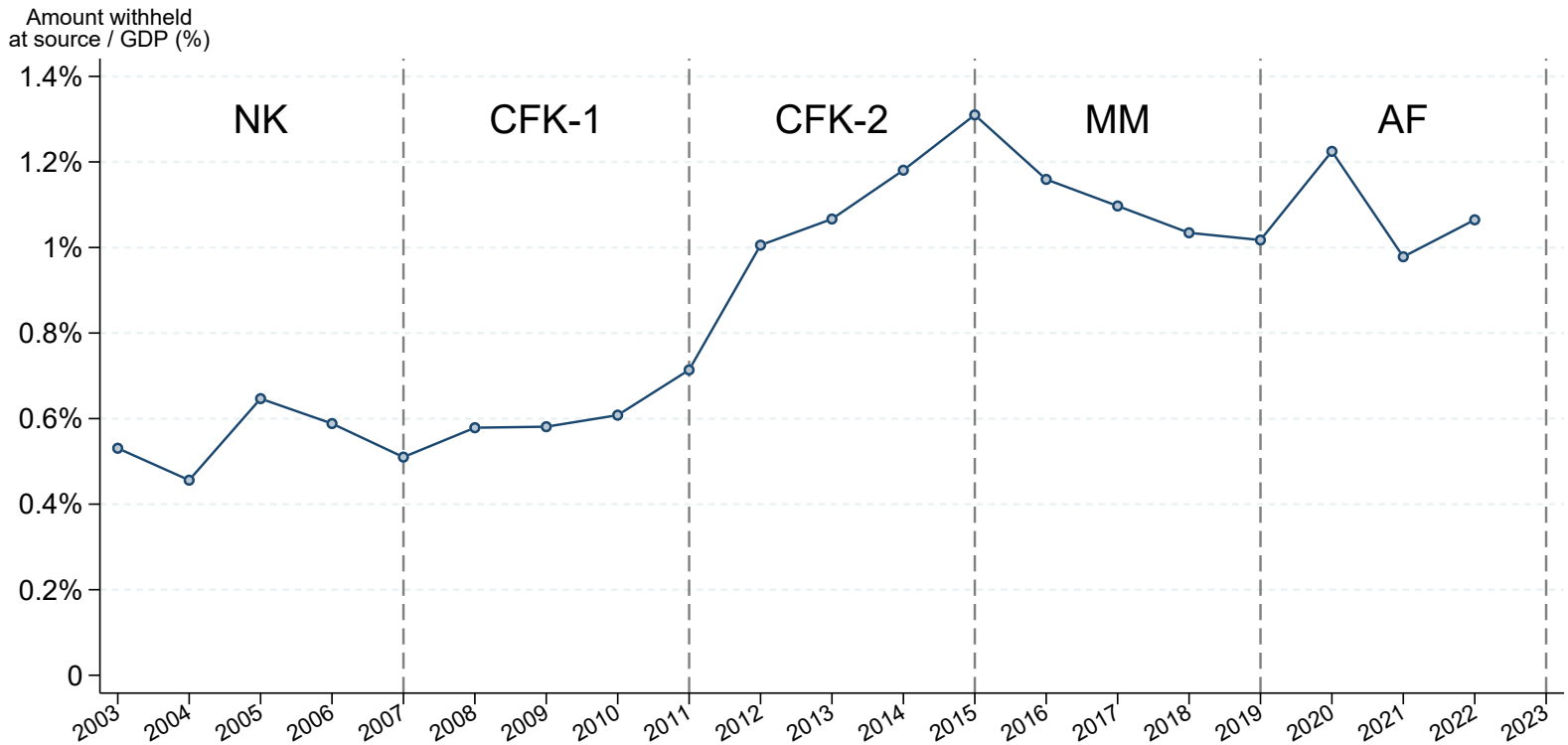
How have **employees** been affected in the last 2 decades?

Employees subject to the income tax (%)



Source: Tortarolo (2024).

Income tax revenue collected from employees (% of GDP)



Notes: Total income tax revenue is about 5-6% of GDP. VAT revenue is 7%. 'Cheque' is 1.6%. Source: Tortarolo (2024).

Monotributo

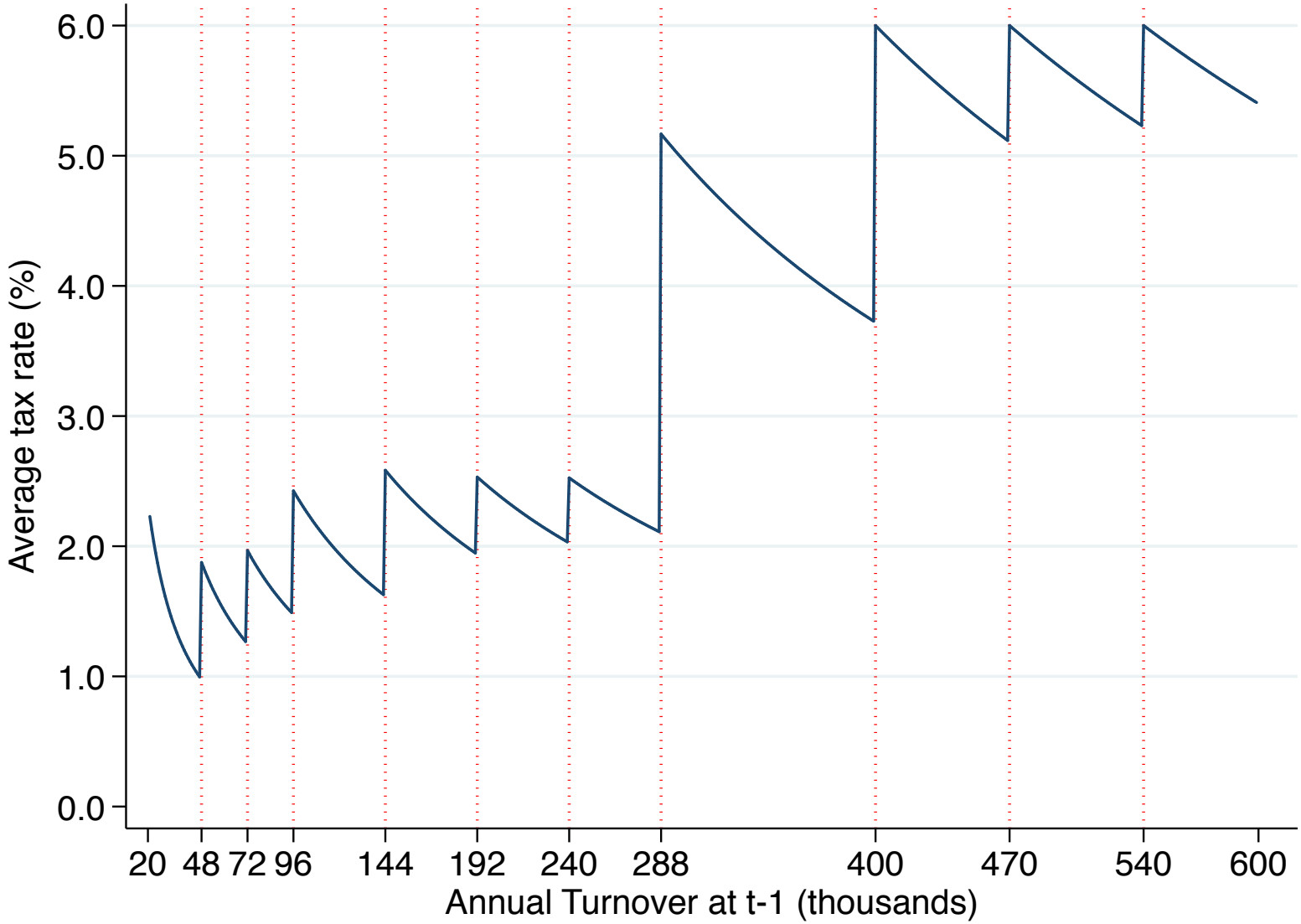
- Is a simplified tax regime for small taxpayers
- In *lieu* of VAT, income tax, and SSC (pension & healthcare)
- Schedule: monthly flat fee that increases discretely with income
  - $(-)$ Distortive: Incentives to under-report income and/or work less
  - $(+)$ Simple: Conceived to induce formalization of the self-employed
- Allows to study behavioral responses of the self-employed
  - Example: Liu et al (2022) "Small Firm Growth and the VAT Threshold: Evidence for the UK" [Blog version]

Categorías de monotributo

(vigentes desde 01/06/2016 al 31/12/2016)

Categ.	Ingresos brutos (****)	Actividad	Cantidad mínima de empleados	Sup. afectada (*)	Energía eléctrica consumida anualmente	Alquileres devengados anualmente	Impuesto Integrado		Aportes al SIPA (**)	Aportes obra social (***)	Total	
							Locaciones y/o prestaciones deservicios	Venta de cosas muebles			Locaciones y/o prestaciones de servicios	Venta de cosas muebles
B	$ 48.000	No excluida	No requiere	Hasta 30 m2	Hasta 3330 Kw	$ 18.000	$ 39 (*****)	$ 39 (*****)	$ 157	$ 419	$ 615	$ 615
C	$ 72.000	No excluida	No requiere	Hasta 45 m2	Hasta 5000 Kw	$ 18.000	$ 75	$ 75	$ 157	$ 419	$ 651	$ 651
D	$ 96.000	No excluida	No requiere	Hasta 60 m2	Hasta 6700 Kw	$ 36.000	$ 128	$ 118	$ 157	$ 419	$ 704	$ 694
E	$ 144.000	No excluida	No requiere	Hasta 85 m2	Hasta 10000 Kw	$ 36.000	$ 210	$ 194	$ 157	$ 419	$ 786	$ 770
F	$ 192.000	No excluida	No requiere	Hasta 110 m2	Hasta 13000 Kw	$ 45.000	$ 400	$ 310	$ 157	$ 419	$ 976	$ 886
G	$ 240.000	No excluida	No requiere	Hasta 150 m2	Hasta 16500 Kw	$ 45.000	$ 550	$ 405	$ 157	$ 419	$ 1126	$ 981
H	$ 288.000	No excluida	No requiere	Hasta 200 m2	Hasta 20000 Kw	$ 54.000	$ 700	$ 505	$ 157	$ 419	$ 1.276	$ 1.081
I	$ 400.000	No excluida	No requiere	Hasta 200 m2	Hasta 20000 Kw	$ 72.000	$ 1.600	$ 1.240	$ 157	$ 419	$ 2.176	$ 1.816
J	$ 470.000	Venta de bienes muebles	1	Hasta 200 m2	Hasta 20000 Kw	$ 72.000	No aplicable	$ 2.000	$ 157	$ 419	-	$ 2.576
K	$ 540.000	Venta de bienes muebles	2	Hasta 200 m2	Hasta 20000 Kw	$ 72.000	No aplicable	$ 2.350	$ 157	$ 419	-	$ 2.926
L	$ 600.000	Venta de bienes muebles	3	Hasta 200 m2	Hasta 20000 Kw	$ 72.000	No aplicable	$ 2.700	$ 157	$ 419	-	$ 3.276

Average Tax Rates: schedule is plagued with *notches*

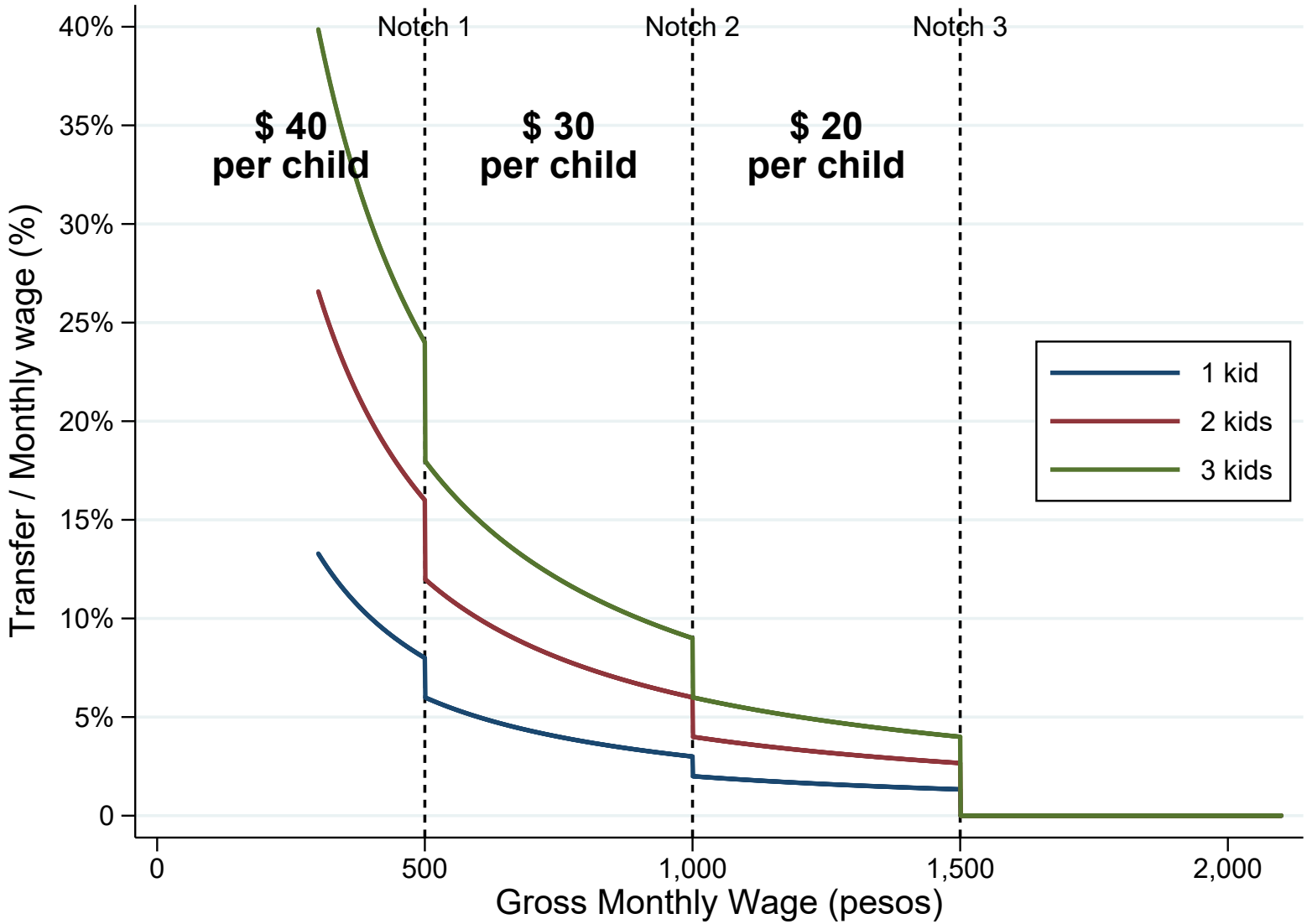


Source: Garriga, Puig, Tortarolo (2020)

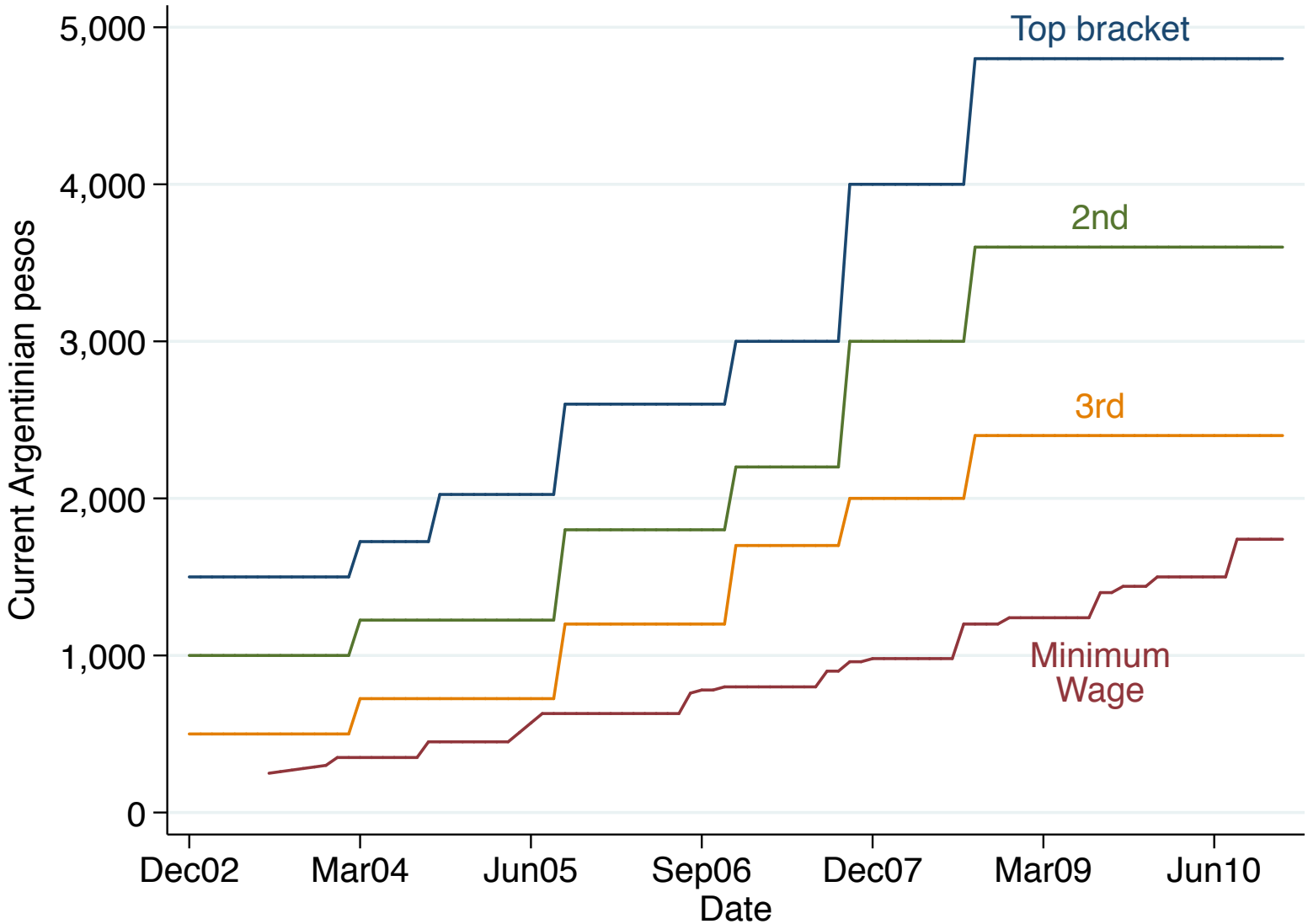
Family Allowance program (AAFF)

- Means-tested transfer for registered wage earners (main transfer until AUH launched in Nov'2009)
- Monthly payment varies by
  1. Number of children < 18 years old
  2. Monthly wage (3 progressive brackets)
- Phased out *discretely* rather than *marginally* ($\neq$ than the EITC)
  It roughly 'breaks even' where PIT starts (but operate separately)
- Family-based but only one spouse is entitled to the benefit (was individually-based before 09/2012)
- Parameters adjusted semi-annually due to inflation
- Funding: through employer SSC (7.5% devoted to FA)
- ATR $> 15\%$ for a worker with 2 kids in the lowest bracket

Transfer schedule 1996-2004



Evolution of brackets' thresholds



Some topics studied in graduate PF (tax side)

1. Optimal labor income taxes and transfers
2. Responses to income taxation: Labor supply, Taxable income, Migration, Innovation
3. Capital income taxation: canonical models + empirics
4. Wealth and property taxation
5. Corporate taxation
6. Consumption/commodity taxation (excise, sales, VAT)
7. Tax compliance and enforcement
8. Tax incidence
9. Social insurance

Methods used in PF

- Linear Regressions
- Instrumental Variables (IV)
- Difference-in-Differences (DiD)
- Event Studies
- Synthetic Control
- Regression Discontinuity Design (RDD)
- Randomized Experiments (RCT)
- Bunching to *kinks* and *notches*

Plan for Lectures

- Clase 0: Review of Theoretical and Empirical Tools
- **Clase 1:** Intro and Overview of Argentina's income tax-benefit system
- **Clase 2:** Optimal labor income taxation
- **Clase 3:** Optimal design of transfers
- **Clase 4:** Empirical evidence on responses to income taxation: Labor supply and Taxable income
- **Clase 5:** Tax enforcement
- **Clase 6:** Tax incidence and the efficiency cost of taxation

Bonus? Doing tax research using administrative data

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