Home ownership and cohorts in a comparative perspective (2000-2020): rewealthization as a trend of increasing inequality and distortion within income groups and occupational classes

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*LIS LISER SEM ON HOUSING AND WEALTH INEQ*

- Recent studies put emphasis on wealth distribution
  - Piketty, 2014; Saez & Zucman, 2016; Chauvel et al, 2021; Pfeffer Waitkus, 2022; etc.
- Wealth transfers, role of inheritance, even for health
(Semyonov, Lewin-Epstein, Maskileyson 2013 [Social Science and Med])
- Wealth as a central component of mobility and life chances
        (Killewald Pfeffer Schachner, 2017)
- General:
Buy the work of others, resource for investment, insurance function, etc.
- Specific to health: healthier life style, shock absorber and stress buffer, access to expensive hospitals, doctors, treatments, (better spare parts)
- Wealth is more than a « money reserve »!

Home ownership as a crucial dimension of saving strategies across the life course

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- Repatrimonialisation =
  Re-wealth-ization =
  Wealth is back in town…

- Wealth / Income ratio

- Housing indices /
  Household Incomes

- A topic shared by economists,
  political scientist
  and sociologists

Ex.
Lindsay B. Flynn (2020) "The young and the restless: housing access in the critical year *West European Politics*, 43:2, 321-343, DOI: 10.1080/01402382.2019.1603679

RHPI Real housing price index (2000=100)
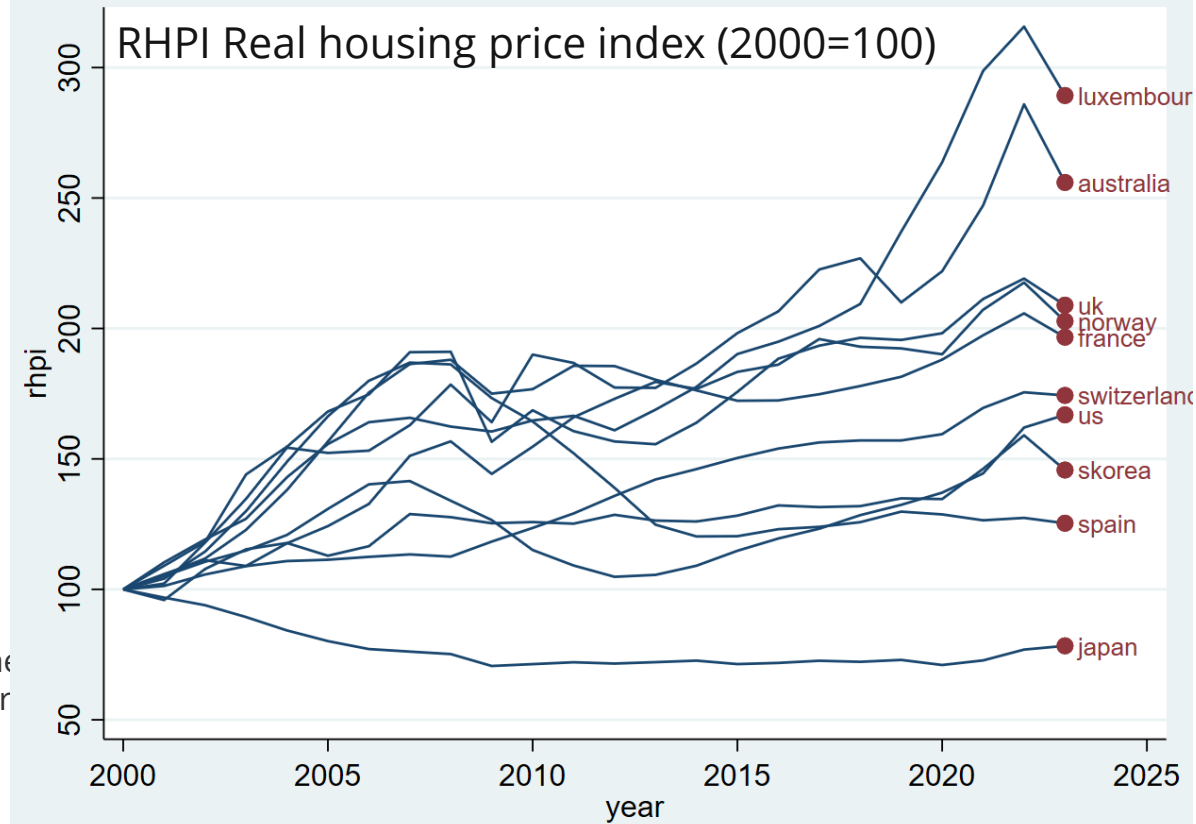
RHPI Real housing price index (2000=100) Mack, A., and E. Martínez-García. 2011. "A Cross-Country Quarterly Database of Real House Prices: A Methodological Note." Globalization and Monetary Policy Institute Working Paper No. 99, Federal Reserve Bank of Dallas. Own calculations.

Home ownership status (HOS)

BIRTH COHORT INEQUALITIES / GENERATIONAL SCARS

**Consequences of the new context
of housing price inflation for young cohorts in transition**

I.   *Permanent interest of housing property
      (wealth accumulation, insurance function and retirement …)*

II.   Coping with new RHPI

III.   Longer repayment period, cheaper zone, smaller size house

IV.   .. Or … remain on the renting market => HOS=0
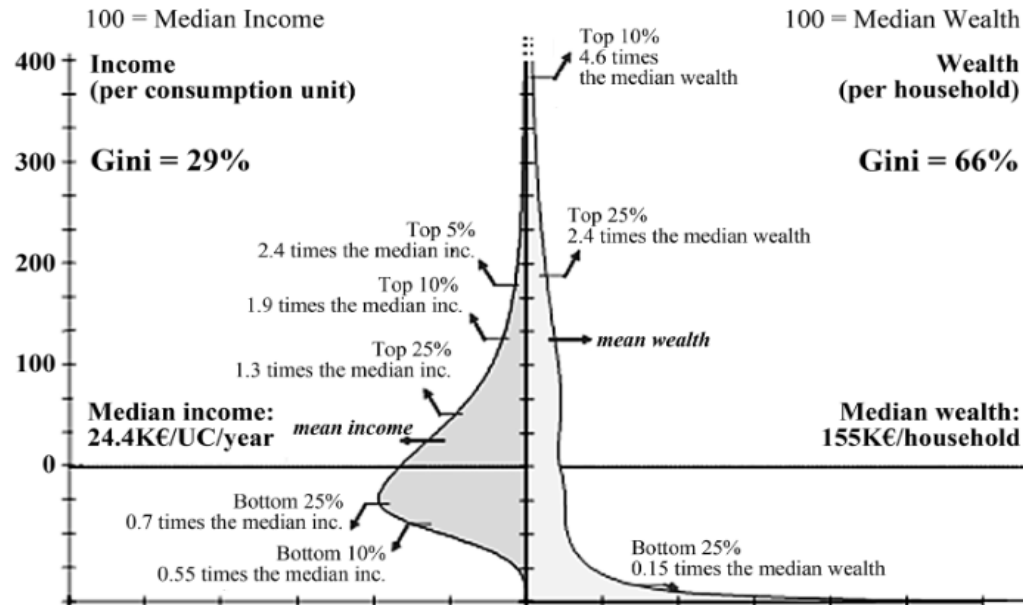
International Variations:
Prices, History, Demography, Family structures, Taxes, Policies …

INTER-COHORT INEQUALITIES // INTRA-COHORT INEQUALITIES

Work income, wealth and the middle class: thinking on the strobiloid

Figure 6. **Income and Wealth Strobiloid 2017 in euro (in France)**

100 = Median Income

Income (per consumption unit)

Gini = 29%

100 = Median Wealth

Wealth (per household)

Gini = 66%

Top 10%
4.6 times the median wealth

Top 5%
2.4 times the median inc.

Top 25%
2.4 times the median wealth

Top 10%
1.9 times the median inc.

Top 25%
1.3 times the median inc.

mean wealth

Median income: 24.4K€/UC/year mean income

Median wealth: 155K€/household

Bottom 25%
0.7 times the median inc.

Bottom 10%
0.55 times the median inc.

Bottom 25%
0.15 times the median wealth

Note: The strobiloid is the shape of social pyramid corresponding to the distribution of income (left half) versus wealth (right half) (see [*Chauvel* 1995]). At a given level of income, the larger the curve, the more people there are positioned around this point. If 100 is the median income (per consumption unit) a large strobiloid at level 100 shows a large middle class at an equal distance between extremes. For wealth, there is clearly no middle class, and the population is stretched between an extremely high level of accumulation and an extremely low level.
Source: income: EU-SILC 2017; Wealth : EU-HFCS wave 2017 in current Kilo-euros (1000 euros).

FR

Mean equiv. inc.
25 Keur

Mean hh. wealth
258 Keur

Median equiv. inc.
20 Keur

Median hh. wealth
134 Keur

Gini = 34

Gini = 64

US

Mean equiv. inc.
56 Keur

Mean hh. wealth
529 Keur

Median equiv. inc.
35 Keur
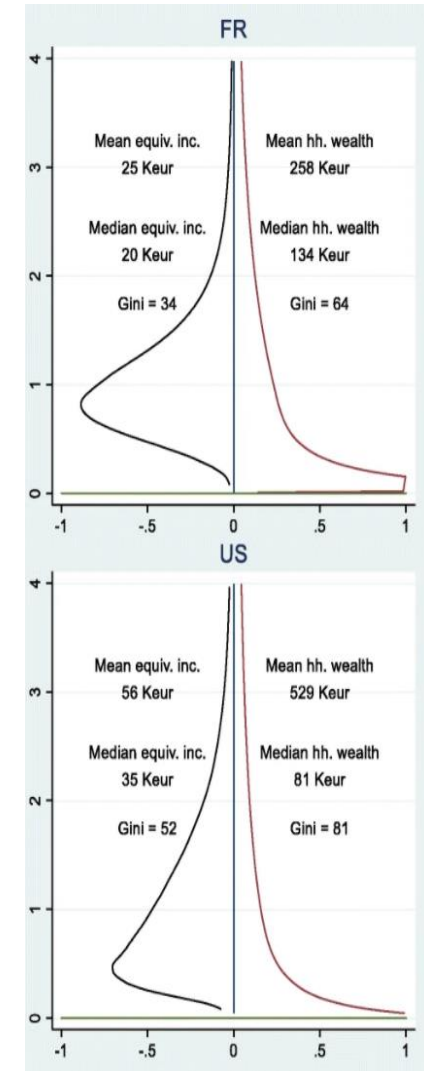
Median hh. wealth
81 Keur

Gini = 52

Gini = 81

Chauvel, L., Hartung, A., Bar-Haim, E., & van Kerm, P. (2019). Income and Wealth Above the Median: New Measurements and Results for Europe and the United States.
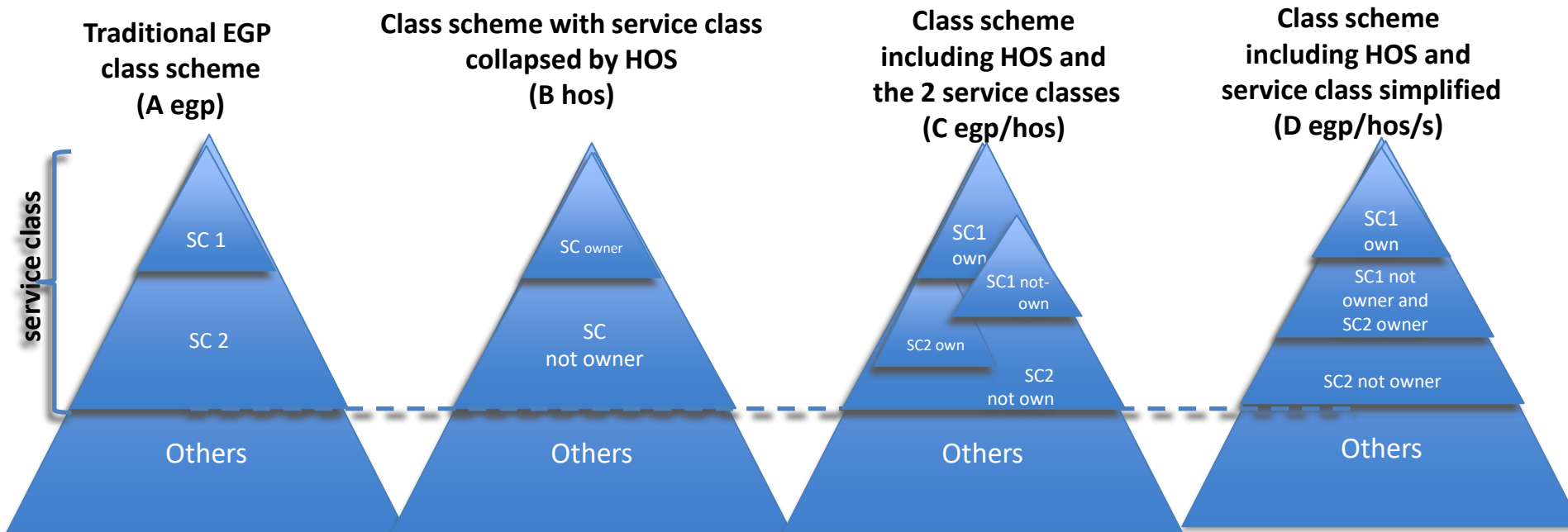In K., Decancq & P., van Kerm (Eds.), What Drives Inequality (pp. 89-104).
Emerald Publishing Ltd. http://hdl.handle.net/10993/41763

Chauvel L. (2020) The Western Middle Classes under Stress: Welfare State Retrenchments, Globalization, and Declining Returns to Education. *Mir Rossii*, vol. 29, no 4, pp. 85–111.
DOI: 10.17323/1811-038X-2020-29-4-85-111 https://mirros.hse.ru/article/view/11356/12455

Four variations of the EGP class scheme including housing property

Traditional EGP class scheme (A egp)
- SC 1
- SC 2
- Others

Class scheme with service class collapsed by HOS (B hos)
- SC owner
- SC not owner
- Others

Class scheme including HOS and the 2 service classes (C egp/hos)
- SC1 own
- SC1 not-own
- SC2 own
- SC2 not own
- Others

Class scheme including HOS and service class simplified (D egp/hos/s)
- SC1 own
- SC1 not owner and SC2 owner
- SC2 not owner
- Others

service class

Why is wealth crucial now? Western European Realities

Real Estate › Residential Real Estate

Average cost of an apartment in Europe as of the 1st half of 2020, by city

(in euros per square meter)

https://www.statista.com/statistics/1052000/cost-of-apartments-in-europe-by-city/

City	€/m²
London**	16 024
Geneva	12 670
Zurich	12 030
Paris	10 175
Luxembourg	10 000
Munich	8 442
Bern	6 990
Stockholm	6 892
Oslo	6 722
Amsterdam	6 550
Frankfurt	6 264
Innsbruck	5 992
Copenhagen	5 456
Vienna	5 359

https://www.statista.com/statistics/630699/hong-kong-private-permanent-housing-price-by-district/

HK island 2022 ➔ 20.000eur/m2

Average price of private permanent housing flats in Hong Kong from 2006 to 2022, by district
(in Hong Kong dollars per square meter)

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Sources
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Release date
August 2023

Region
Hong Kong

Survey time period
2006 to 2022

Supplementary notes
According to the source, figures are valid for apartments with less than 70 square meters.

One Hong Kong dollar equals approximately 0.13

ⓘ Additional Information
© Statista 2023
Show source ❶

Average price of private permanent housing Hong Kong 2006-2022, by district
Published by Wenyi Zhang, Sep 3, 2023

In 2022, the average price of permanent housing in Hong Kong Island dropped to around 173 thousand Hong Kong dollars per square meter on average. The city had the highest property prices in the region.

DATA: http://demographia.com/dhi.pdf

DEMOGRAPHIA INTERNATIONAL HOUSING AFFORDABILITY 2023 EDITION
"Median multiple" price-to-income ratio
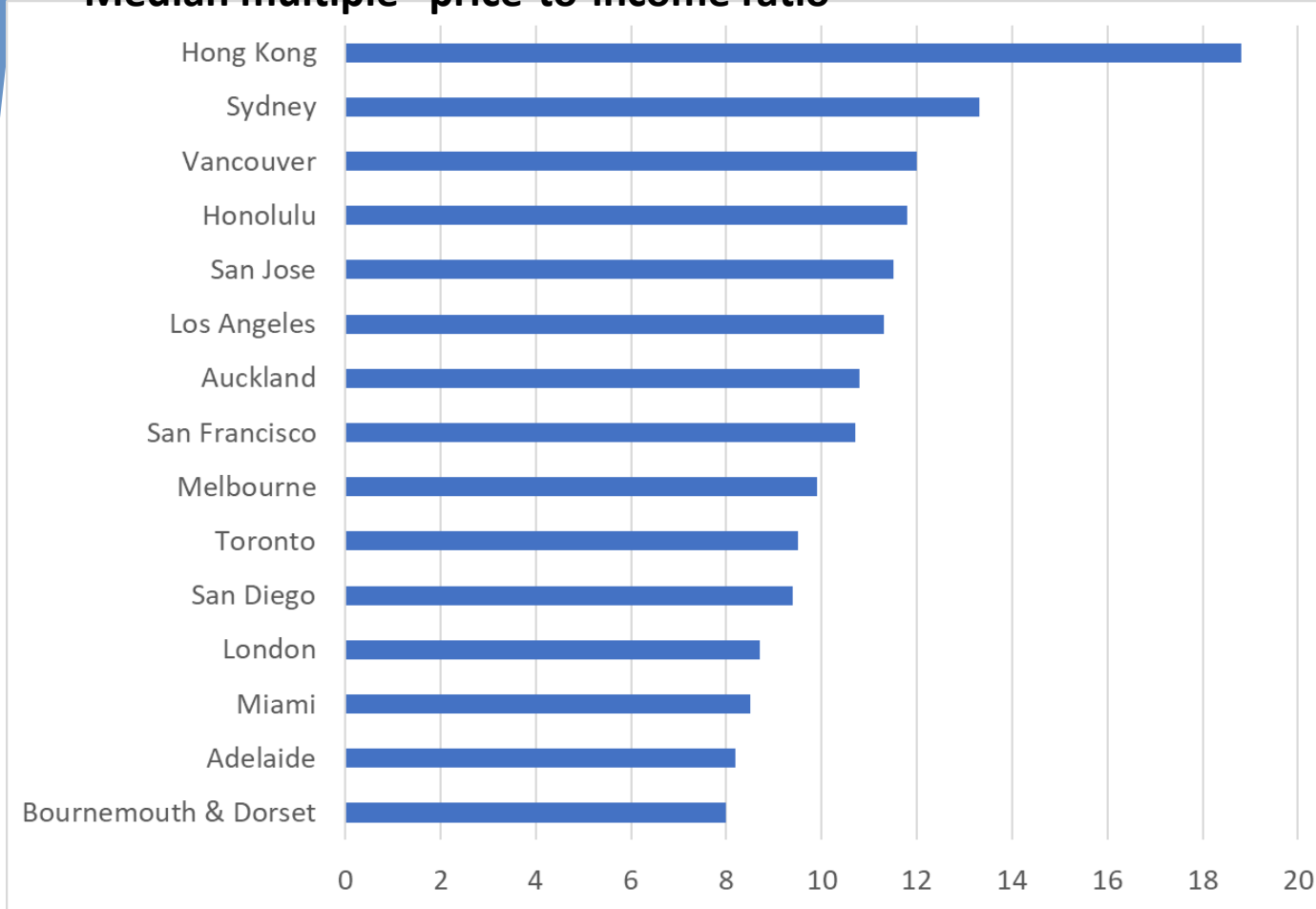
2022 Q3 prices and income levels

The **median multiple** is a **price-to-income ratio**, which is the median house price divided by the gross median household income (pre-tax).

Gaps of Work and Wealth in Global Cities

The World's Least Affordable Cities

Ranked by the years of income it would take
the average citizen to buy a 100-square-
meter residence in a prime neighborhood

City	Value
Singapore	42.7
New York (Manhattan)	48.4
Cape Town	54.6
Sydney	54.9
Rome	60.1
Jakarta	61.7
Bangkok	67
Geneva	73.5
Paris	77.7
Hong Kong	96.4
London	136.2
Moscow	143.7
Shanghai	233.3
Mumbai	308.1

https://www.theatlantic.com/business/archive/2012/04/why-is-mumbai-the-most-expensive-city-in-the-world-for-locals/255741/

➔ Think now of elite level services: education, health, etc.

Price and quality?...

https://www.bulgarianhouse.com/property/an-old-village-bulgarian-house-with-lovely-views-near-popovo-13008/
5K€

https://www.squareyards.com/blog/lakshmi-mittal-house-celebhm
1B€

Check for updates

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Intergenerational home ownership

Jo Blanden[1,3] · Andrew Eyles[2,3] · Stephen Machin[4]

Abstract

This paper studies intergenerational links in home ownership, an increasingly important wealth marker and a measure of economic status in itself. Repeated cross sectional UK data show that home ownership rates have fallen rapidly over time, most markedly amongst younger people in more recent birth cohorts. Evidence from British birth cohorts data supplemented by the Wealth and Assets Survey show a significant rise through time in the intergenerational persistence of home ownership, as home ownership rates shrank disproportionately among those whose parents did not own their own home. Given the close connection between home ownership and wealth, these results on strengthening intergenerational persistence in home ownership are therefore also suggestive of a fall in intergenerational housing wealth mobility over time.

Notes: Labour Force Survey data from 1996 to 2016. The sample of observations is limited to household reference persons. Data are weighted using person weights provided by the LFS.

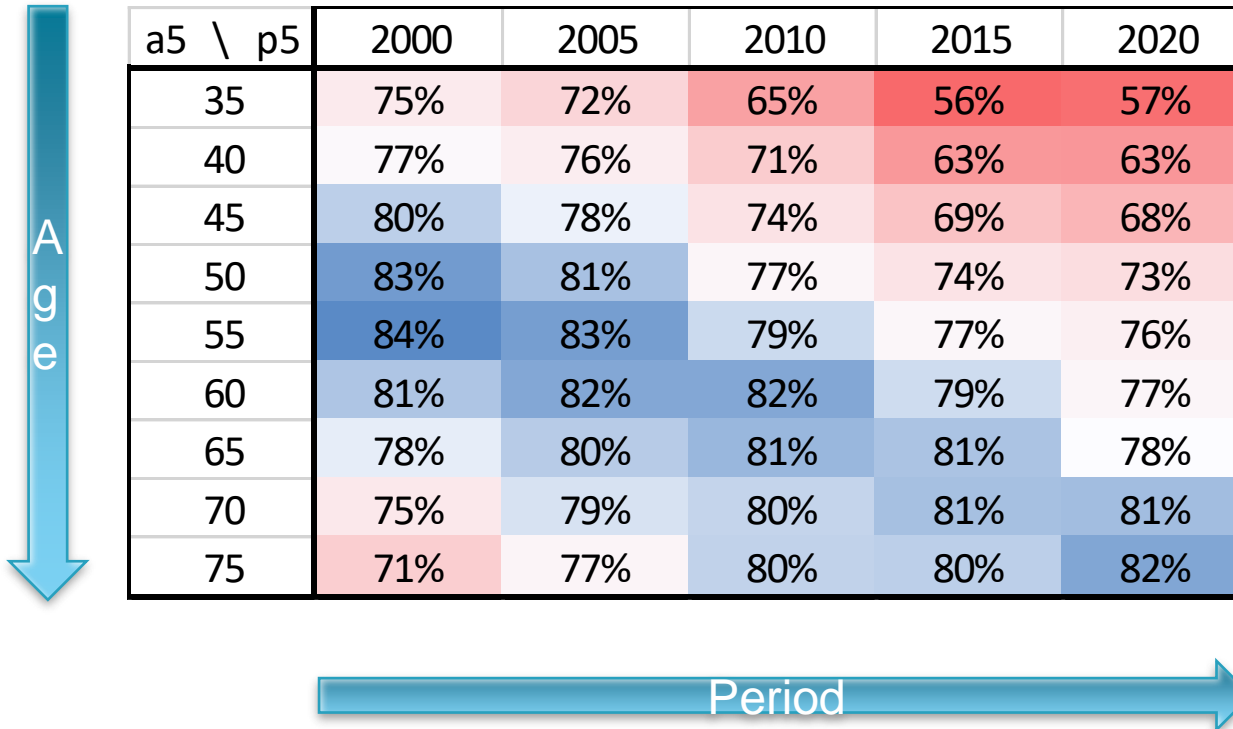**Fig. 2** Patterns of home ownership in the UK across time and age group

Blanden, J., Eyles, A. & Machin, S.
Intergenerational home ownership.
J Econ Inequal (2023).
https://doi.org/10.1007/s10888-023-09563-z

Notes: Labour Force Survey data from 1996 to 2016. The sample of observations is limited to household reference persons aged 20-69. Individual controls are gender, maritial status, number of dependent children, ethnicity and, in the case of the dahsed line, gross weekly income entered as a percentile in the annual wage distribution. Percentiles are calculated using LFS income weights. All three lines are based on coefficients from the common sample of individuals with full data on characteristics and income. In order to seperately identify the effect of cohort from age and year, we normalise the cohort effect to be 0 for individuals aged 42 in the year 2000 (those born in 1958 as indicated by the vertical line in the Figure). Coefficients are smoothed over a using a 5 year rolling window.

Fig. 3 Cohort effects on home ownership from the labour force survey

WHAT TIME IS IT? Age-Period-Cohort

UK= United Kingdom

Owners by age group

a5 \ p5	2000	2005	2010	2015	2020
35	75%	72%	65%	56%	57%
40	77%	76%	71%	63%	63%
45	80%	78%	74%	69%	68%
50	83%	81%	77%	74%	73%
55	84%	83%	79%	77%	76%
60	81%	82%	82%	79%	77%
65	78%	80%	81%	81%	78%
70	75%	79%	80%	81%	81%
75	71%	77%	80%	80%	82%

Age

Period

Home ownership status (HOS)

BIRTH COHORT INEQUALITIES / GENERATIONAL SCARS

**Consequences of the new context
of housing price inflation for young cohorts in transition**

I.   *Permanent interest of housing property (wealth accumulation, insurance function and retirement*

II.   Coping with new RHPI

III.   Longer repayment period, cheaper zone,
       smaller size house (apartment, not house with a garden, …)

IV.   .. Or … remain on the renting market => HOS=0

International Variations:
Prices, History, Demography, Family structures, Taxes, Policies …

INTER-COHORT INEQUALITIES // INTRA-COHORT INEQUALITIES

- LIS **www.lisdatacenter.org**
  - Main countries **au de es il it lu mx uk us**
    (Australia Germany Spain
    Israel Italy Luxembourg
    Mexico United-Kingdom Untied-States)
  - Window of observation: 2000 to most recent
  - Age groups from age 35 to 79 (before too early, after too late …)
  - Excluding persons living with parents (! ➔ same meaning for Germany and Italy)

- Variables:
  - Dep. Var.: HH ref person and partner's home ownership: 0/1 variable
    (1) [full home owners (no mortgage) + owners with mortgage] vs (0) others
  - Time(s) variable: Age / Period / cohort APC
  - Other variables (for controls):
    HH equivalized income; education; migration; etc…

WHAT TIME IS IT? Age-Period-Cohort

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65	78%	80%	81%	81%	78%
70	75%	79%	80%	81%	81%
75	71%	77%	80%	80%	82%

Age

Period

Bar-Haim, E., Chauvel, L. & Hartung, A. More necessary and less sufficient: an age–period–cohort approach to overeducation from a comparative perspective. *High Educ* **78**, 479 – 499 (2019). https://doi.org/10.1007/s10734-018-0353-z

WHAT TIME IS IT? Age-Period-Cohort

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45		78%	74%	69%	68%
50	83%		77%	74%	73%
55	84%	83%		77%	76%
60	81%	82%	82%		77%
65	78%	80%	81%	81%	
70	75%	79%	80%	81%	81%
75	71%	77%	80%	80%	82%

Birth cohort 1960

Age

Period

The larger APC family (with STATA ssc install)

APCD (detrended): are some cohorts above or below a linear trend of long-run economic growth? Basically, the APCD is a 'bump detector'. ssc install apcd
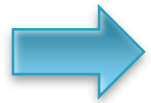
APCTLAG (trended by cohort once average lagged age effect fitted): which cohort increased or declined. The program is a part of the ssc install apcgo

APCGO (gap / Oaxaca): once controlled by other covariates, did the gap between group 0 and 1 changed. ssc install apcgo

APCH (hystersis) is the cohort apcd effect bump durable or not over time
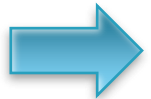
APC-DISCO (discontinuity) parsimonious test of cohort trend discontinuity (level/slope)

Refinements to come (faster bootstraps, better controls, simplification, etc.)

The issue with APC models is the diversity of
general slopes
Conventional APC with constraint,
Yang Yang APC-IE, HAPC …

Our method A: APCD

APCD (detrended): are some cohorts above or below a linear trend of long-run economic growth? Basically, the APCD is a 'bump detector'.
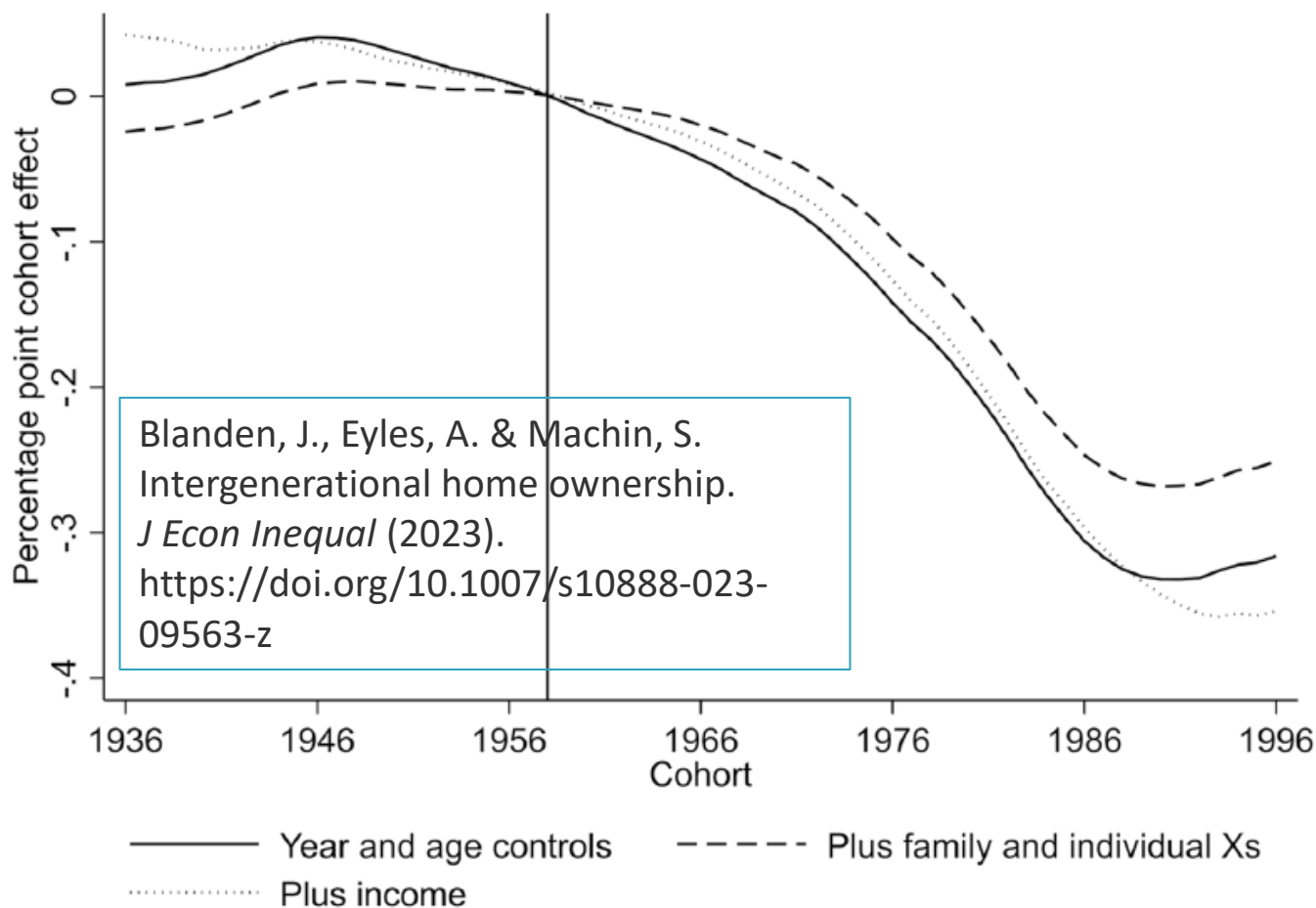
$$y^{apc} = \alpha_a + \pi_p + \gamma_c + \alpha_0 rescale(a) + \gamma_0 rescale(c) + \beta_0 + \sum_j \beta_j x_j + \varepsilon_i$$

$$\begin{cases} p = c + a \\ \sum_a \alpha_a = \sum_p \pi_p = \sum_c \gamma_c = 0 \\ Slope_a(\alpha_a) = Slope_p(\pi_p) = Slope_c(\gamma_c) = 0 \\ \min(c) < c < \max(c) \end{cases} \quad \text{(APCD)}$$

STATA ssc install apcd
=> available ado file

• PLZ see more on
www.louischauvel.org/apcdex.htm

Blanden, J., Eyles, A. & Machin, S.
Intergenerational home ownership.
J Econ Inequal (2023).
https://doi.org/10.1007/s10888-023-09563-z

Legend:
— Year and age controls   – – – – Plus family and individual Xs
·············· Plus income

Notes: Labour Force Survey data from 1996 to 2016. The sample of observations is limited to household reference persons aged 20-69. Individual controls are gender, maritial status, number of dependent children, ethnicity and, in the case of the dahsed line, gross weekly income entered as a percentile in the annual wage distribution. Percentiles are calculated using LFS income weights. All three lines are based on coefficients from the common sample of individuals with full data on characteristics and income. In order to seperately identify the effect of cohort from age and year, we normalise the cohort effect to be 0 for individuals aged 42 in the year 2000 (those born in 1958 as indicated by the vertical line in the Figure). Coefficients are smoothed over a using a 5 year rolling window.

Fig. 3 Cohort effects on home ownership from the labour force survey

Part II: APC-lag of the u_{apc}

- APC-Detrended as an identifiable solution of age, period and cohort non-linear effects (Chauvel, 2013, Chauvel and Schröder. 2014, Chauvel et al., 2016)

$$u^{apc} = \alpha_a + \pi_p + \gamma_c + \alpha_0 rescale(a) + \gamma_0 rescale(c) + \beta_0 + \varepsilon \ (APCD)$$

- where $\alpha_a, \pi_p, \gamma_c$ are sum zero and trend zero; α_0 and γ_0 absorb age and cohort trend
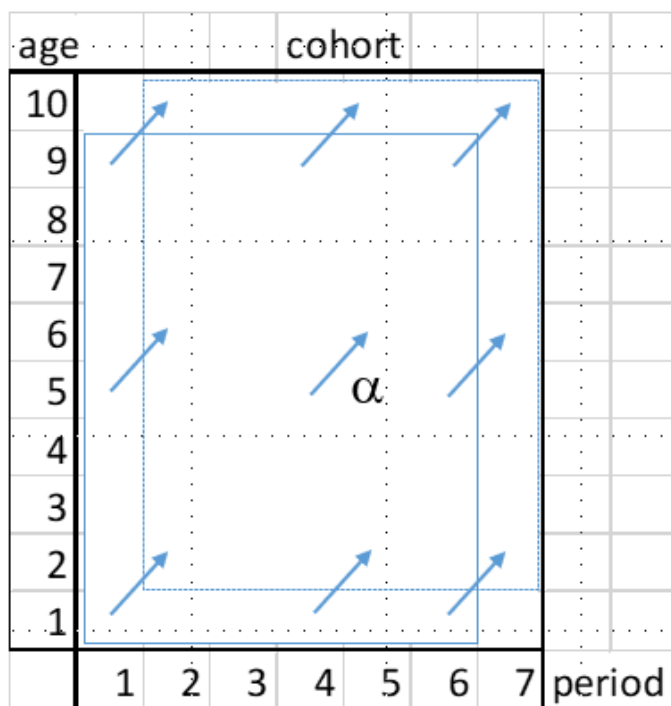
- β_0 is the constant

- $\alpha_0 rescale(a) + \gamma_0 rescale(c)$ is a two-dimensional linear (=hyperplane) trend

- $\alpha_a, \pi_p, \gamma_c$ are 3 vectors of age, period and cohort fluctuations

- To solve the "identification problem" (a=p-c), a meaningful constraint is needed: trend in α_a = the average of the longitudinal shift observed in u_{apc}

Part II: APC-lag of the u_{apc}

- The APC-lag solution

$\alpha = [\Sigma\ (u_{(a+1,\ p+1,\ c)} - u_{apc})] / [(A-1)\ (P-1)]$

α is the average longitudinal age effect along cohorts

(= the average difference between

$u_{(a+1,\ p+1,\ c)}$

and its cohort lag u_{apc} across the table)

$\text{Trend}(\alpha_a) = 12[\Sigma\alpha_a(2i - A - 1)]/[(A-1)A(A+1)]$

- APC-lag delivers a unique estimate of vector γ_c a cohort indexed measure of gaps
- Average γ_c is the general intensity of the gap
- Trend of γ_c measures increases/decreases of the gap in the window of observation
- Values of γ_c show possible non linearity
- The γ_c can be compared between countries

Methodology of APC-tlag STATA subcommand in « ssc install apcgo »

UK= United Kingdom

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70	75%	79%	80%	81%	81%
75	71%	77%	80%	80%	82%

Cohort effects of home ownership with bootstrapped confidence intervals And discontinuity analysis

Discontinuity:
cohort born in 1950 or 1965?
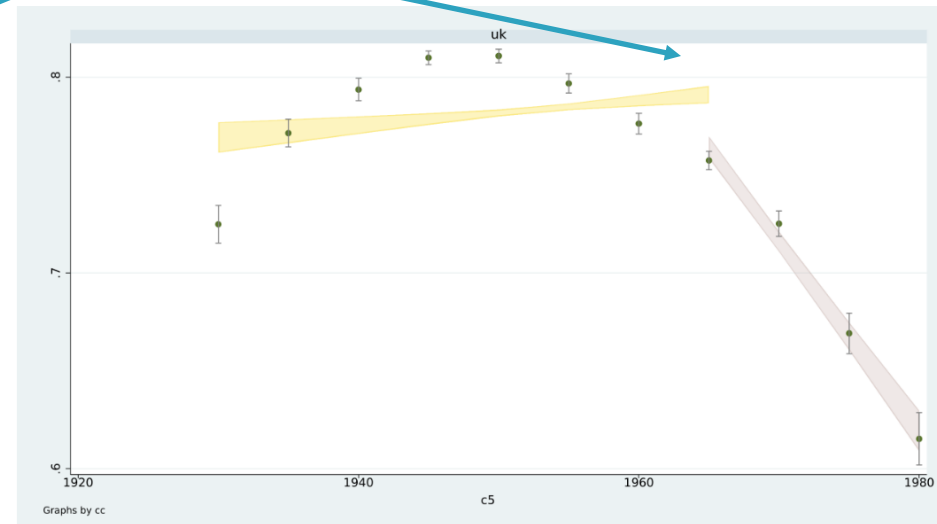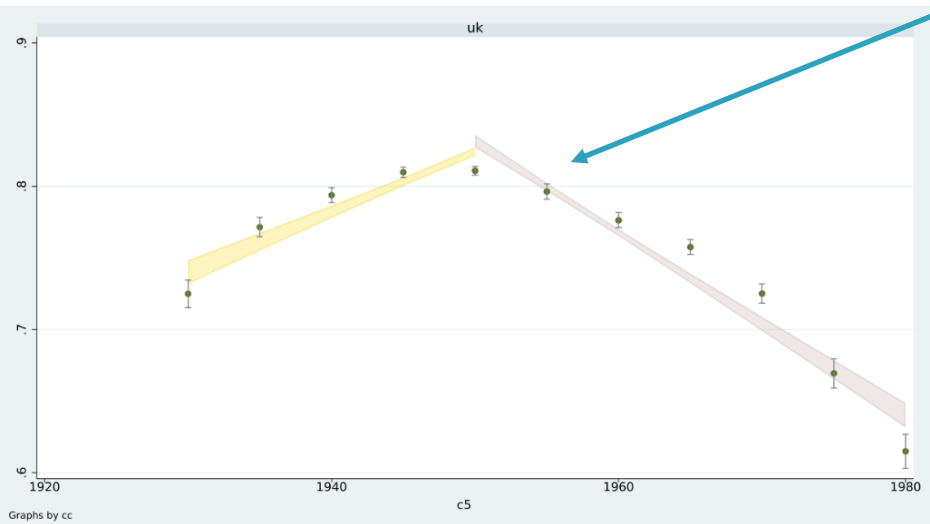
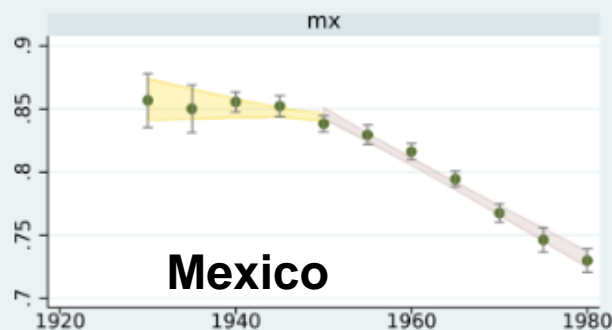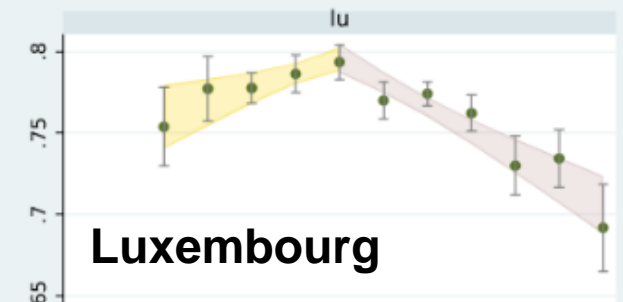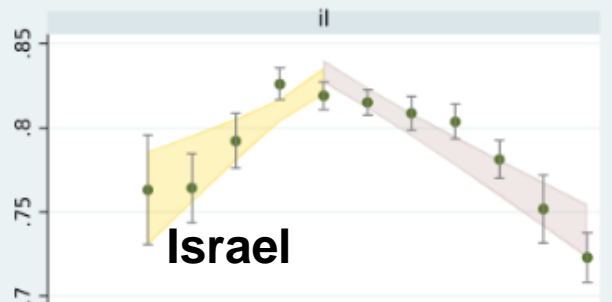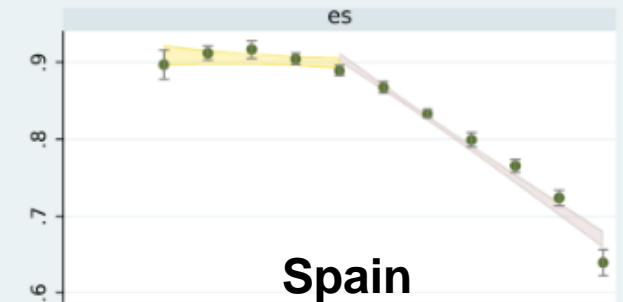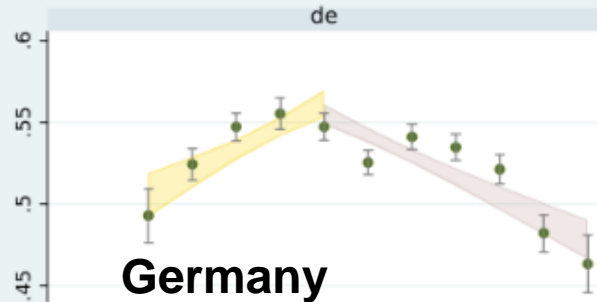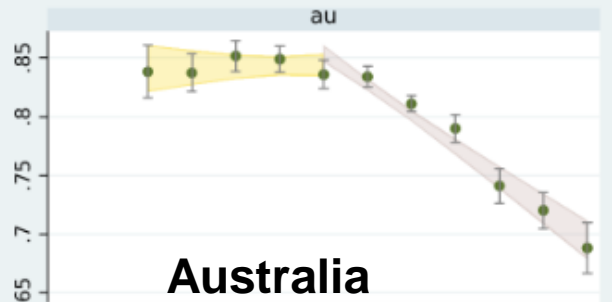Cohort effects of home ownership
with confidence intervals
And discontinuity analysis
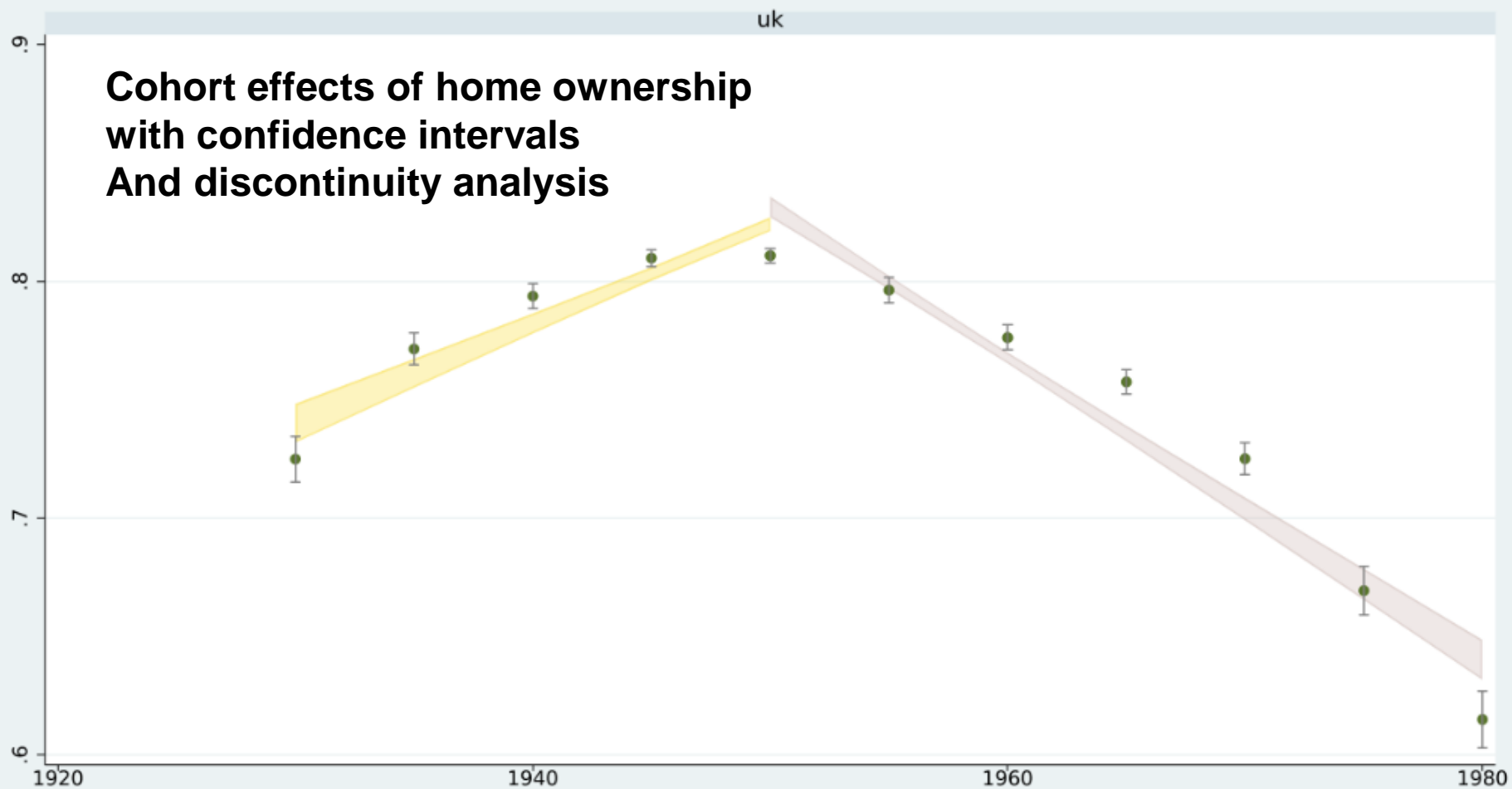
Cohort effects of home ownership with confidence intervals
And discontinuity analysis (ALL INCOMES)
**INTER COHORT DISCONTINUITIES // INEQUALITIES**

26
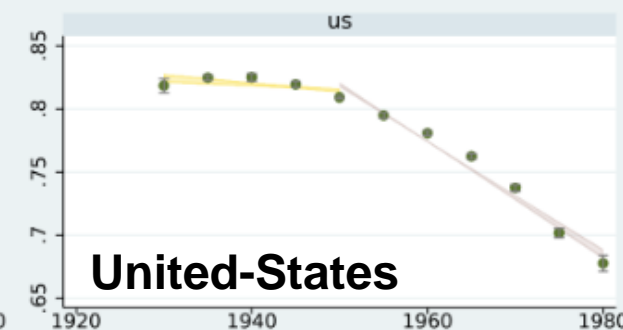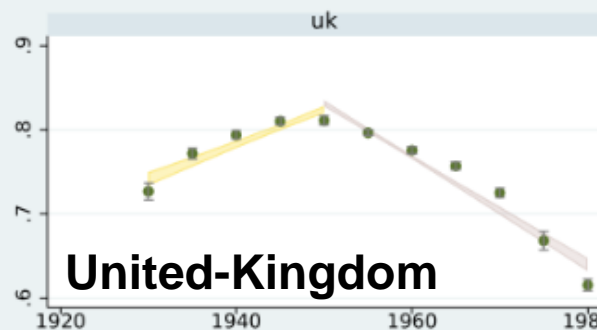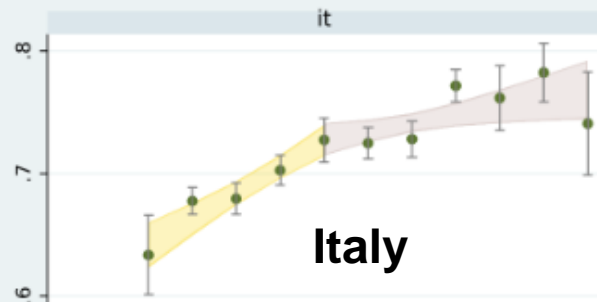
On Stata: ssc install apcgo

- APC-GO is a APC model to provide a cohort analysis in *gaps in outcomes between 2 groups* after controlling for relevant explanatory variables

    - e.g. (gender) gaps in income net of education effects
      or (racial) gaps in education net of State/county effects

- Ingredients:

    1. Computation of Oaxaca decomposition in unexplained/explained gaps by A x P cell

    2. Estimate of APC-lag gaps with a focus on cohort

    3. Bootstrapping to obtain confidence intervals

Bar–Haim, E., Chauvel, L., Gornick, J.C. *Hartung A.* The Persistence of the Gender Earnings Gap: Cohort Trends and the Role of Education in Twelve Countries. *Soc Indic Res* **165**, 821–841 (2023). https://doi.org/10.1007/s11205–022–03029–x

Cohort effects of home ownership with confidence intervals And discontinuity analysis OF GAP BETWEEN >1.2 times the median and <0.83 times the median income

28
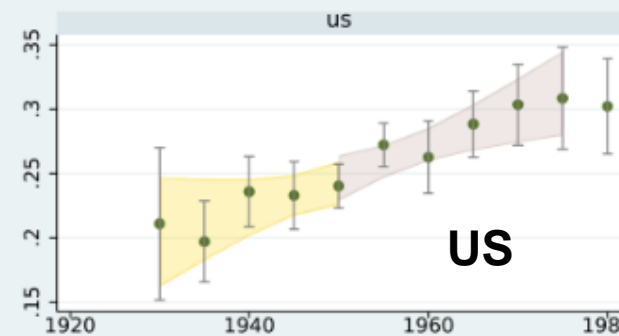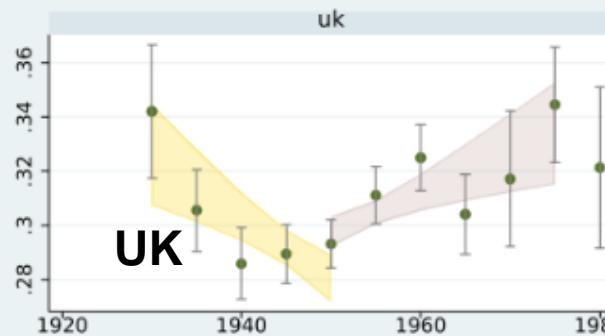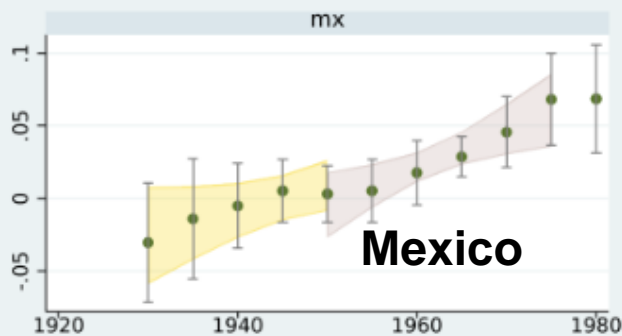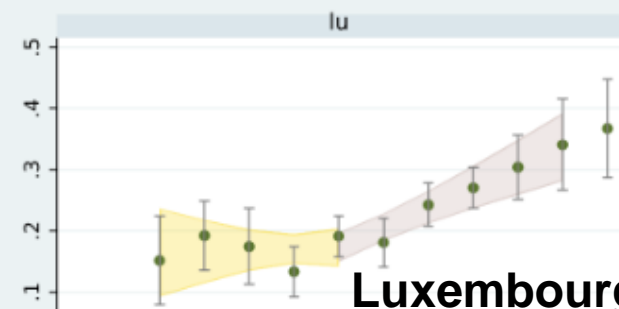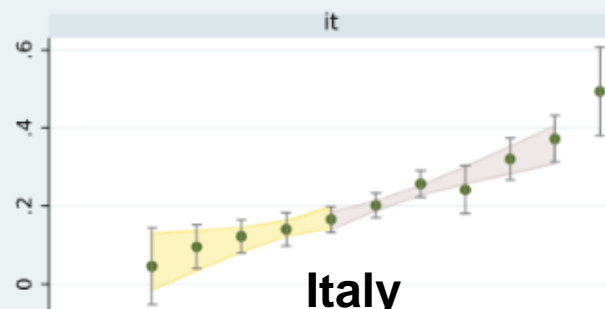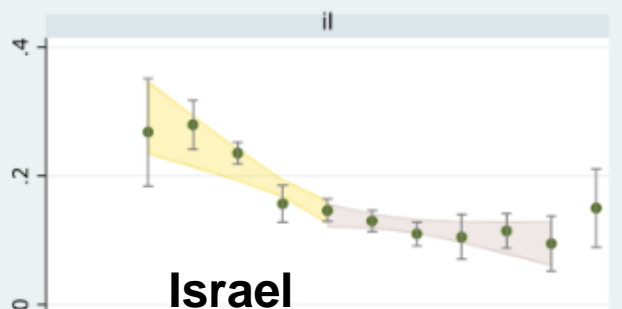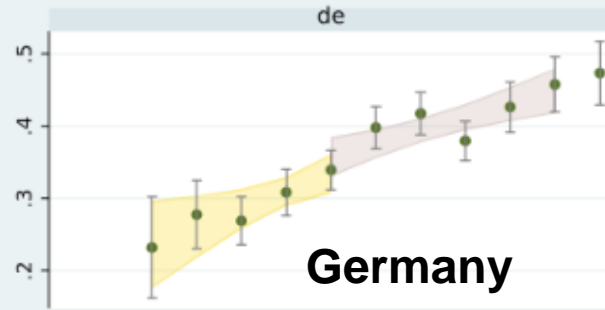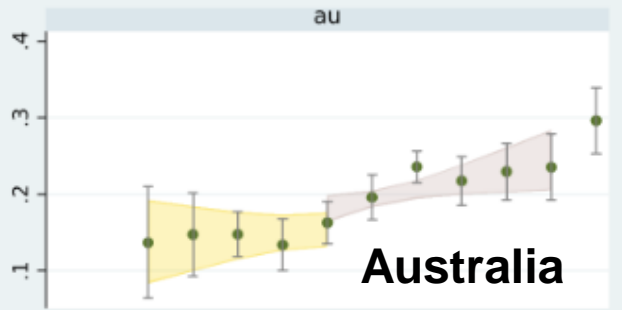
Main Results

I.   The trends are not universal (=welfare and housing regimes)

II. Anyway, the common trend is adverse to the lower income groups

III. And generally the young generations

IV. With increasing gaps ➔ squeezing the middle?

FUTURE RESEARCH

I.   Why? Education, parental wealth, migration,…

II.   Comparative diversities?

III.   HISTORY, markets, institutions, taxation, cultural behavior,… ???

IV.   Price and quality?...

V.   Infranational divergence? Education, parental wealth, migration,…

VI.   Futurology
       … increasing divide between owners and the wealth-poor ?
       More questions than answers !
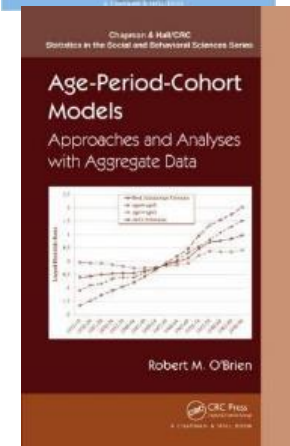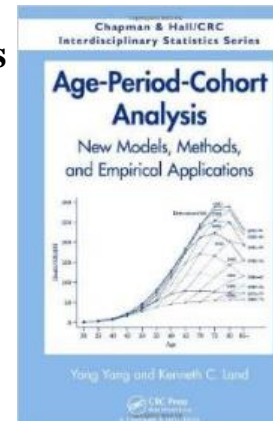
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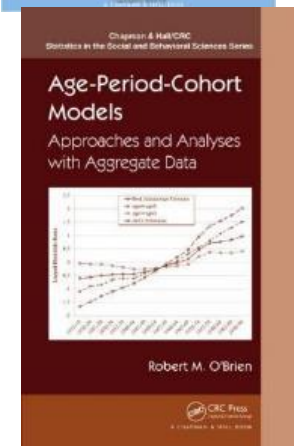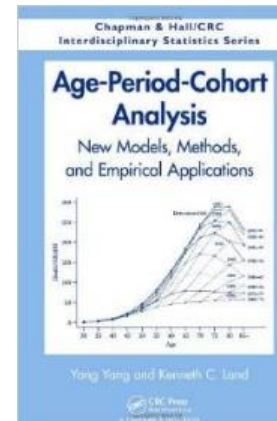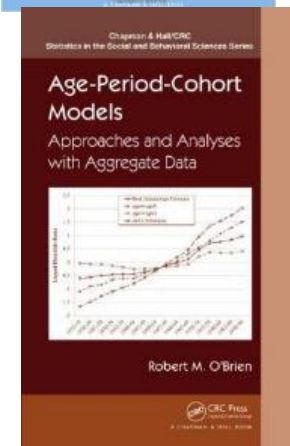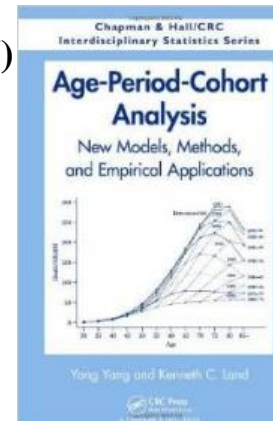
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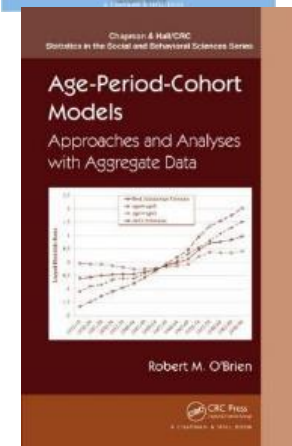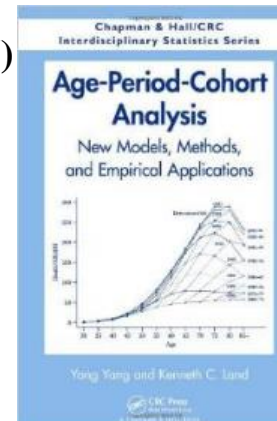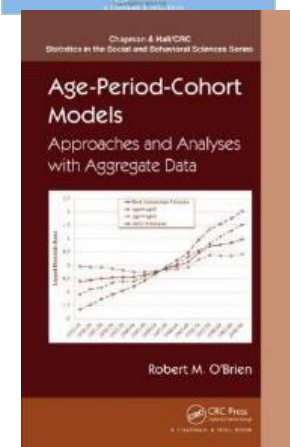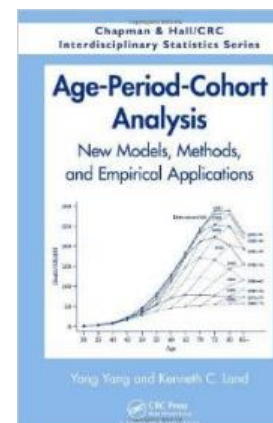
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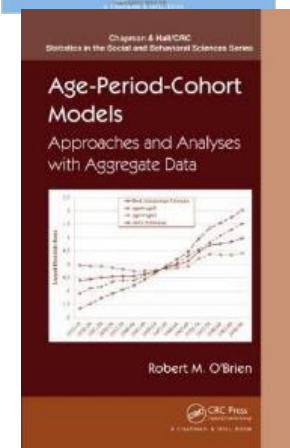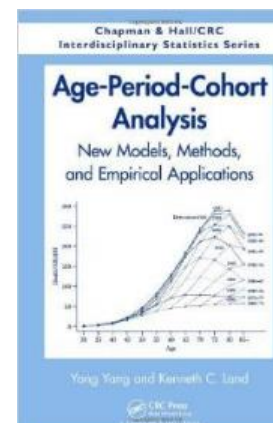
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