Wealth and Income Stratification by Social Class in Five European Countries*

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The Spirit of the Paper: Frankenstein

The nature of the paper is interdisciplinary:

- Carlos Gil-Hernández (UNIFI, EC) is a sociologist.
- Davide Villani (EC) is a political economist.
- Guillem Vidal (GC, EC) is a political scientist.
- I am an economist.

The paper was comissioned by the EC through the DIGCLASS (Social Classes in the Digital Age) project.

Background - Preliminary ideas

Income and wealth inequality rise in many Western economies (Piketty, 2014), **surprisingly hand in hand** with bold claims on "big occupational class death" (Pakulski, 2005).

But: Income has recently replaced occupational class as main SES indicator for social stratification scholars (Barone et al., 2022), while big occupational class schemes consistently explain a substantial share of income inequality (Albertini et al., 2020; Zhou and Wodtke, 2019).

Wealth accumulation is one of the "big four" SES dimension (Hällsten and Thaning, 2022) key for economic inequality and intergenerational transmission over classic triad (education, class, income).
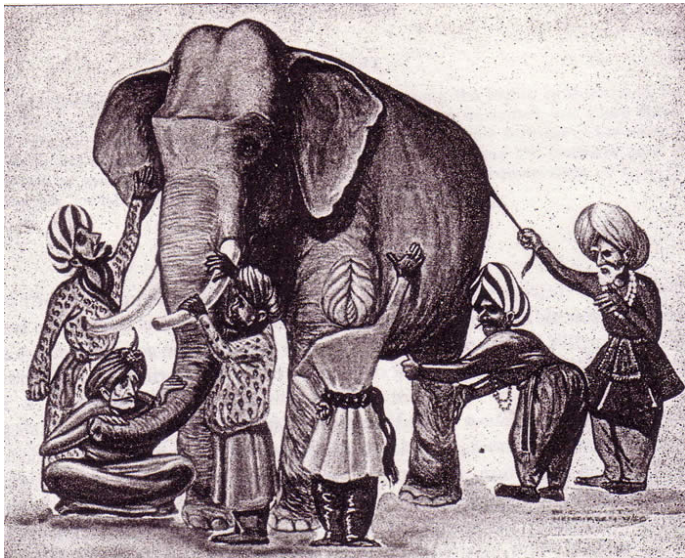
Motivation 1: Economists...

... have often overlooked "class" in inequality analyses (Milanovic, 2023):

- Reduced class structure: capitalists-labourers divide (Fana and Villani, 2024).
- Focus on top elites' wealth and income accumulation (Piketty, 2014; Wright, 2015).
- Lied (too much?) on an attributional view on the overall income distribution (Oesch, 2023).

I know this is an oversimplification!

Motivation 2: Sociologists...

... have often ignored "wealth" in class analyses.

- Focus on life chances (income) stratification by occupations: employment relations, Goldthorpe (2007) or ascription —gender, ethnicity,... (DiPrete, 2007; Savage, 2014).

- Missing theoretical and empirical links between Neo-Weberian/Marxist classes, wealth, and economic resources (rents, financial income, inheritances) beyond labor market attachment (Wright, 2015; Duvoux and Papuchon, 2022; Oesch, 2023).

- No clear conceptual/methodological distinction between class-based economic inequality vs stratification (Zhou, 2012).

Again: I know this is an oversimplification!

Research Questions

RQ1: How are wealth and income —and their composition— distributed and stratified by occupational social classes over time and cross-nationally?

RQ2: To what extent are big occupational social classes keeping up with aggregate income and wealth inequality trends?

We build on the spirit of Duvoux and Papuchon (2022) and explore whether class inequality and stratification in wealth go vis-à-vis with income.

Data and Sample

Data from the Luxembourg Wealth Study.

- **Finland:** 2013, 2016
- **Germany:** 2002, 2007, 2012, 2017
- **Greece:** 2009, 2014, 2018
- **Spain:** 2002, 2005, 2008, 2011, 2014, 2017
- **Slovakia:** 2010, 2014, 2017

Unit of analysis: Household, by head's class (ages 25–75; active population) and employment status.
Sample size: ranges from 1,887 (Slovakia, 2014) to 13,758 (Germany, 2017)

Outcomes

Labor Income (*hilabour*): wages and self-employment income.
Capital Income (*hicapital*): interests, business profits, dividends, and rental incomes.
Household Factor Income (*hifactor*) = *hilabour* + *hicapital*.

Financial Wealth (*haf*): financial assets (deposit accounts, cash, financial investments, non-pension and long-term savings) minus non-housing liabilities.
Non-Financial Wealth (*han*): non-financial assets (real estate and business equities) minus real estate-related liabilities.
Total Household Wealth (*ha*) = *haf* + *han*

Equivalized: sqrt(*hhsize*), PPP USD2017. Also use other definitions as robustness checks.

Neo-Weberian Class Scheme (Oesch, 2023)

Table 1. Social class scheme by household's head occupation, employment status, and education

Social Class	Occupation (1-digit ISCO)	Employment Status	Educational Attainment
Upper Class	Managers (ISCO 1)	—	≥ Upper-secondary
Upper-Middle Class	Professionals (ISCO 2)	—	Tertiary
Middle Class	Managers (ISCO 1)	—	< Upper-secondary
	Professionals (ISCO 2)	—	< Tertiary
	Technicians and associate professionals (ISCO 3)	—	—
	Clerical support workers (ISCO 4)	—	Tertiary
	ISCO 4-9	Employer or self-employed	—
Skilled Working Class	Clerical support workers (ISCO 4)	Employee	Upper-secondary
	Service and sales workers (ISCO 5)		≥ Upper-secondary
	Skilled agricultural, forestry and fishery workers (ISCO 6)		
	Craft and related trades workers (ISCO 7)		
	Plant and machine operators, and assemblers (ISCO 8)		
Low-Skilled Working Class	ISCO 4-8	Employee	< Upper-secondary
	Elementary Occupations (ISCO 9)		—

Source: Own elaboration; Notes: — no criteria applied; all categories included. Blank squares correspond to the educational or employment status category above.
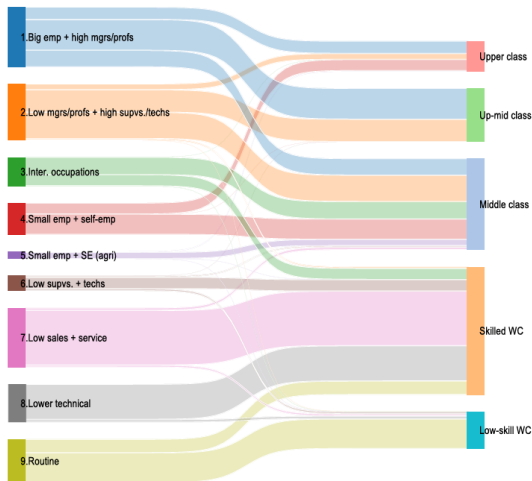
Source: Own elaboration using data from EWCS (2010-2015). Weighted figures. n=55,603

Measures (everything is installed in LISSY)

We start with basic descriptives statistics and the Wealth-to-Income Ratio estimates.

Use the Gini index with the modification suggested by Raffinetti et al. (2015) to account for negative wealth.

Use the Mean Log Deviation to check robustness (also because nice properties, Foster and Shneyerov (2000).
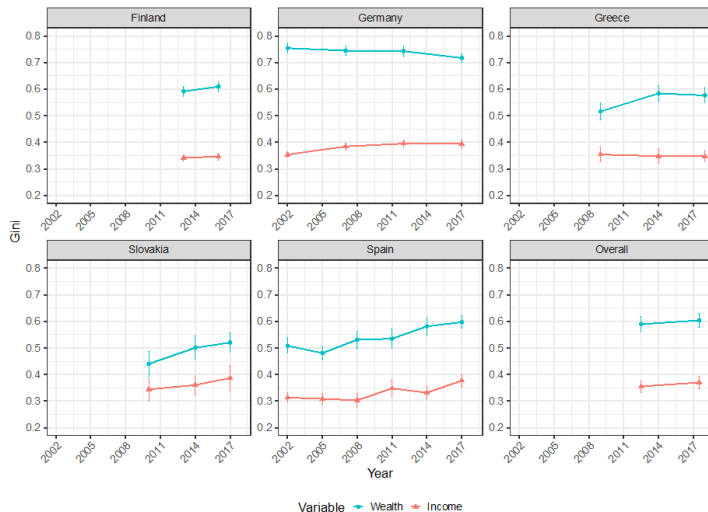
Me also measure Stratification as Zhou (2012):

$$S = \frac{\sum_{s=1}^{g} \sum_{t=1}^{g} \sum_{i=1}^{n_s} \sum_{j=1}^{n_t} \left[1\left(r_{si} > r_{tj}\right) - 1\left(r_{si} < r_{tj}\right)\right] 1(R_s > R_t)}{\sum_{s=1}^{g} \sum_{t=1}^{g} \sum_{i=1}^{n_s} \sum_{j=1}^{n_t} 1(R_s > R_t)}$$

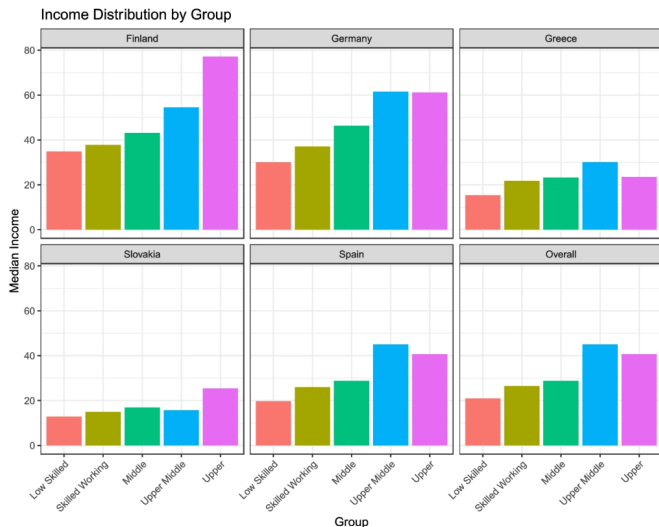# Stratification, Zhou and Wodtke (2019)

Figure 1. Stylized illustration of possible links between stratification and inequality among blue-collar and white-collar workers (Zhou and Wodtke, 2019)
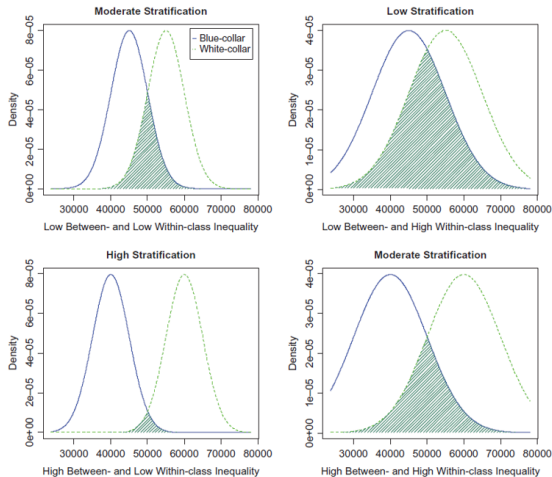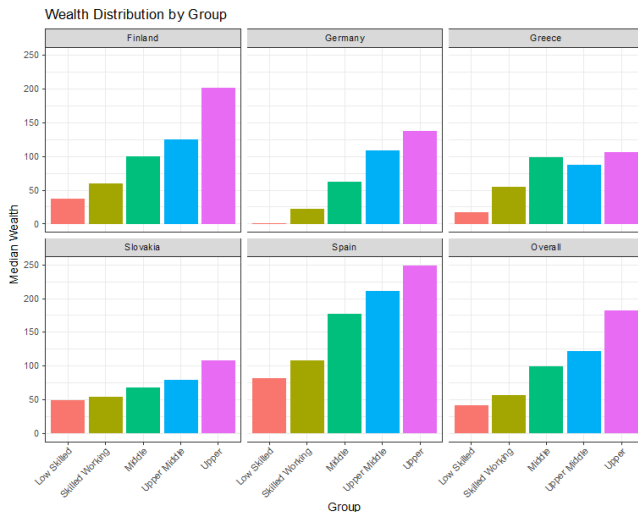
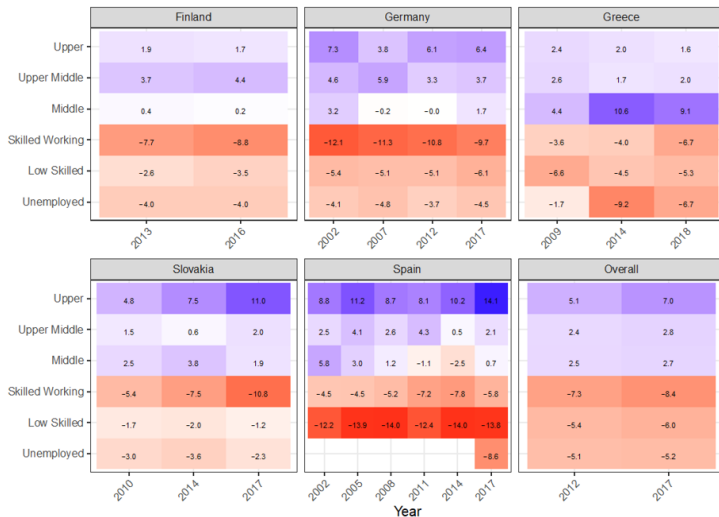# Results: Overall Inequality Trends (Gini)

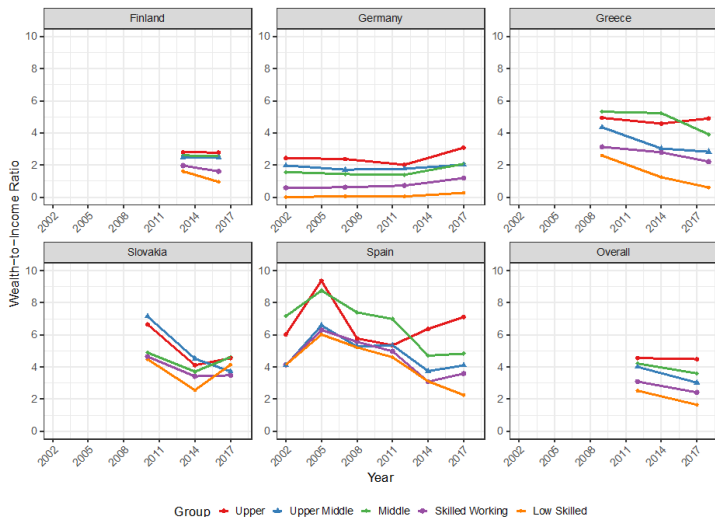# Results: Median Income by Classes (Oesch, 2023)
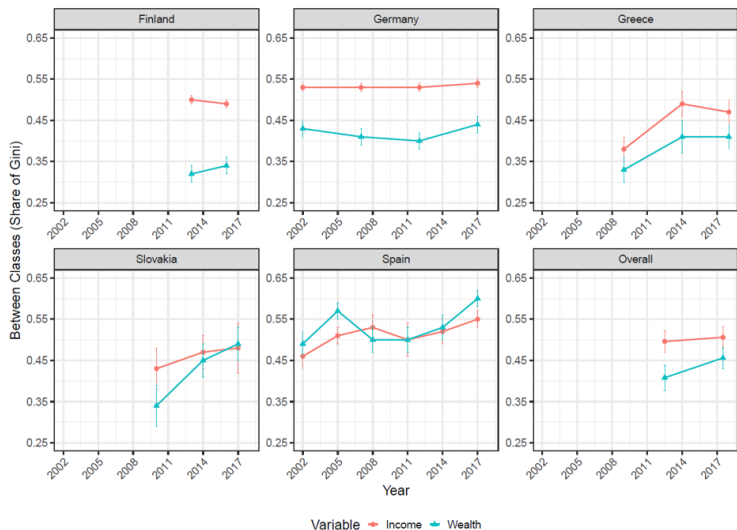

Income Distribution by Group

Wealth Distribution by Group

Results: Wealth Shares by Class Relative Size (Oesch, 2023)

Results: Wealth to Income Ratio (Oesch, 2023)

Results: Stratification by classes

Robustness and Limitations
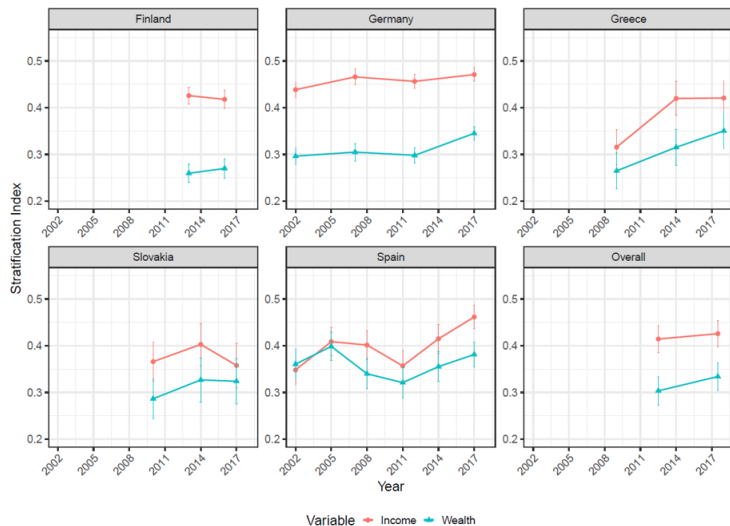
Robustness Checks

- Sample size disparities do not affect main results.
- Sample variation, i.e, including retirees / excluding unemployed / age bounds.
- Robust to MLD and other outcome definitions (assets, disposable household income...)
- Strong overlap between ESeC and Oesch (2023) class schemes.

Limitations

- Data issues: underreporting of capital income and financial wealth.
- No account of taxes/transfers: focus on market income/wealth.
- Gini index not fully decomposable; MLD limited to positive values.
- Class scheme lacks occupational detail (supervisory, size of firm).

Future research with LISSY?

- More detailed occupational class schemes subject to data availability. Germany is an ideal candidate: big sample and *occ1_c* at ISCO-08 4 digits!

- We excluded the US due to some conceptual differences in the occupation classification. Should be further explored.

- We overlooked the role of public sector. Explore how social transfers mitigate class-based inequalities.

- Using household units and head information is a terrible assumption. Explore how our findings interact with other inequalities.

To conclude:

- **Median wealth** is clearly hierarchized by class, even more than income.
- **Relative wealth shares:** upper classes hold ∼6pp more than their population share; working-class share declines.
- **Stratification:** Between-class inequality stable for income, rising for wealth.
  - Income results consistent with prior work (Albertini et al., 2020; Zhou and Wodtke, 2019).
  - Wealth inequality less stratified than income.
  - No evidence of its "death" or "decomposition."
- **Beyond labor:** Non-labor resources crucial for understanding contemporary inequality and renewing class theory (Hällsten and Thaning, 2022).

Q & A: Thanks!!

Comments, insults, love letters, to:

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Before commenting the results, two ideas:

The first comes from Modigliani (1966):
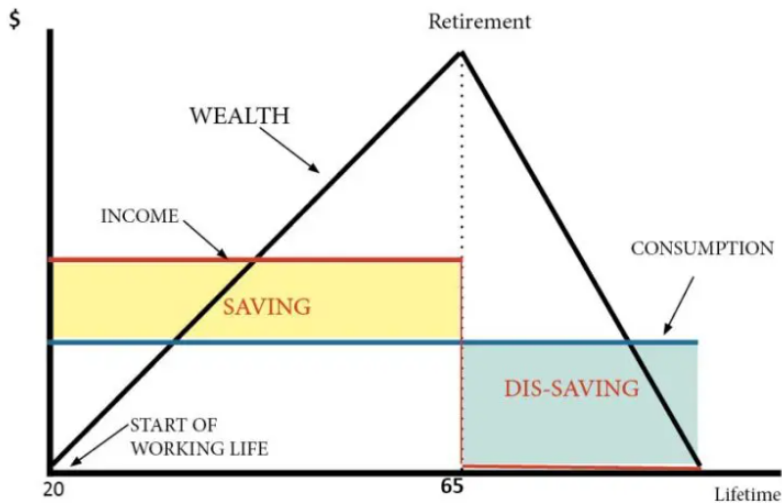
Consumption is often modeled as a concave function of income.

This means: in relative shares, the more a household earn, the less they consume, the more they save.

In other words: wealth crystallizes income inequalities through savings, financial decisions, human capital disparities, and so on.

We know that wealth is more unequal than income. Our point is: how does this interact with class?

Results: Between-Class Inequality Composition (Gini)
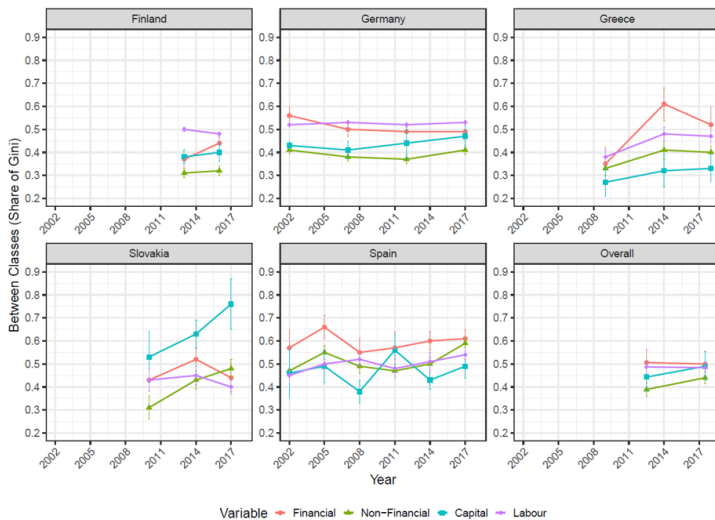
Results: Between-Class Inequality (Gini), other outcomes