Gender, Wealth, and the Socio-Ecological Transition

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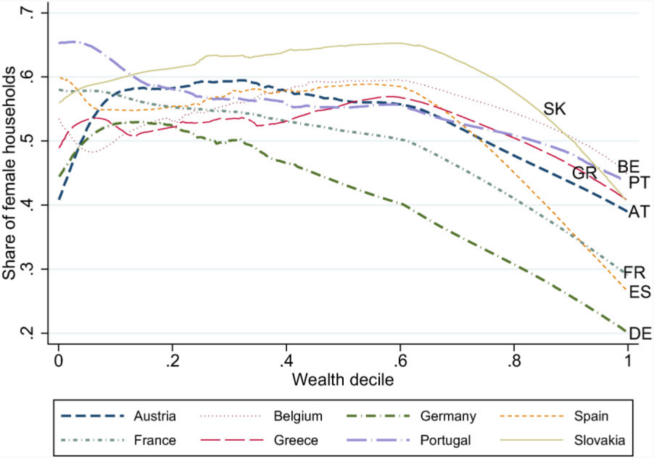
Agenda

1. Gender wealth gap
2. Wealth models
3. Socio-ecological transition

Gender wealth gap

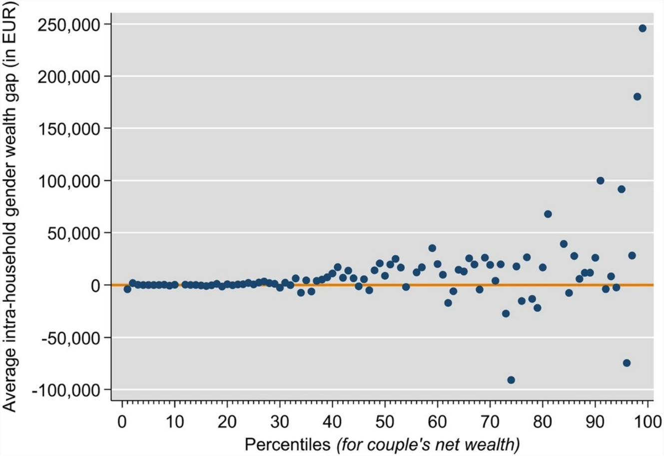
Share of single-adult female households over the net wealth distribution



Source: Schneebaum, Rehm, Mader, Hollan (2018 ROIW), data: HFCS 2010

⇒ Significant gaps in gross wealth in Austria, France, Greece, and Slovakia in a quantile regression at the top of the distribution Quantile regression

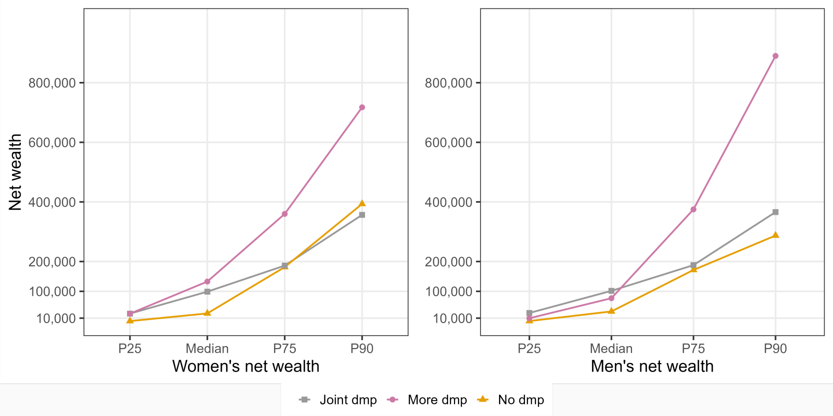
Gender wealth gap in couples (Austria)



Source: Rehm, Schneebaum, Schuster (2022 EUJP), data: HFCS 2014

⇒ The gap increases towards the top, and can be explained by variables approximating power within the couple.

Level of net wealth and decision-making power (Austria)



Source: Lechinger, Rehm, Zuazu (2025 mimeo), data: HFCS 2021

⇒ Having decision-making power is linked to higher wealth, more so for men. RIF regression and decompositions show that decision-making power can explain parts of the wealth gap, especially at the top. ▸ Gender gap RIF

Wealth and gender: What we (do not) know

- Data collection often still at the household level: household as a black box
- Men tend to have higher wealth levels
- Gender wealth gaps are larger at the top of the distribution
- Higher wealth is linked to decision-making power within the couple, especially for men at the top of the distribution
- This may point to a continued relevance of patriarchal norms.

Wealth models

Long-run development of wealth inequality

- Structural macro models following Kaldor (1955), Kalecki (1971), Pasinetti (1962)
- Part of a spate of recent literature (Palley 2017), Kumar ea. (2018), Taylor ea. (2019), Petach/Tavani (2021), Onaran ea. (2023)
- Our model (Ederer/Rehm 2020a, 2020b, 2021, 2024):
  - Mixed income for both workers and capitalists
  - Wealth accumulation through saving (endogen. feedback on growth)
  - Firms invest and produce
  - Differential savings rates and differential rates of return (portfolio composition)
  - Calibrated to wealth and consumption survey data: Wealth share of capitalists z and six parameters (saving rates s_w, s_r, profit share π, share in labor income α, profit generating wealth share γ_w, γ_r)

Basic version of the model

- Income:

$$Y_r = \alpha W + \frac{\gamma_r z}{\gamma_w(1+z)+\gamma_r z} R \tag{1}$$

$$Y_w = (1-\alpha) W + \frac{\gamma_w(1-z)}{\gamma_w(1+z)+\gamma_r z} R \tag{2}$$

- Investment:

$$I = (\beta_0 + \beta_1 u + \beta_2 \pi) K \tag{3}$$

- Consumption:

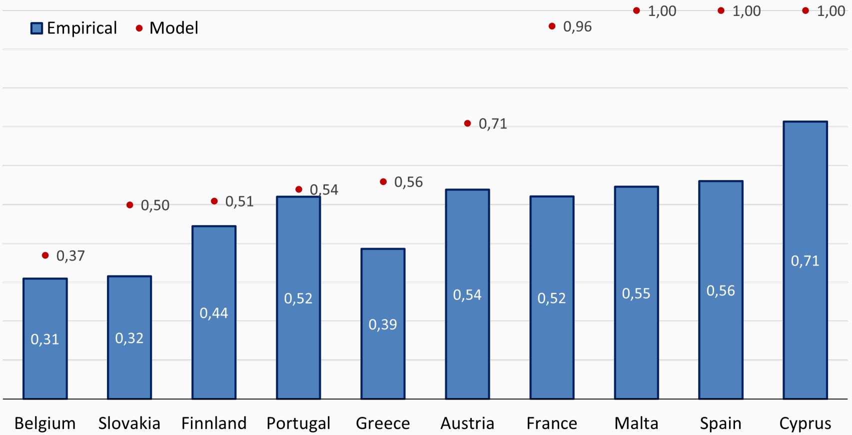
$$C = (1-s_w) Y_w + (1-s_r) Y_r \tag{4}$$

- Equlibrium:

$$z^* = \frac{s_r \pi - s_w}{(s_r - s_w)\pi} \tag{5}$$

Full model

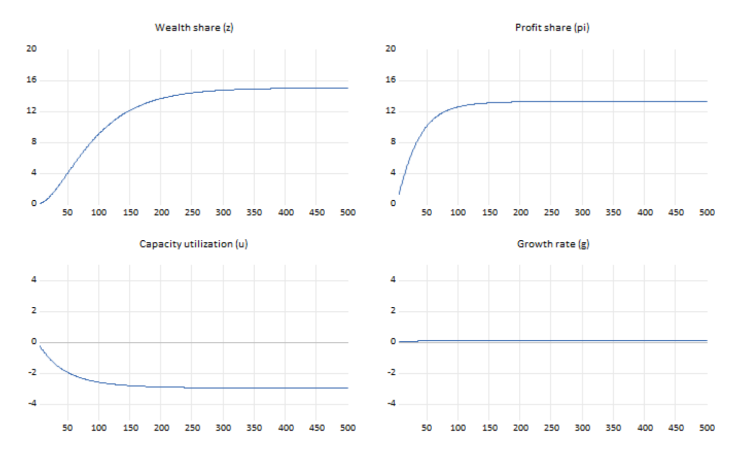
Wealth concentration: empirical and model



Source: Ederer/Rehm (2020 CJE), data: ECS 2010, HFCS 2010

⇒ The model predicts a higher long-run wealth share than that estimated from the data. Other papers: endogenizing wealth makes growth regimes more wage-led, dynamics of the adjustment path. ▸ Dynamics

Endogenizing the profit rate



Source: Ederer/Rehm (2024 mimeo)

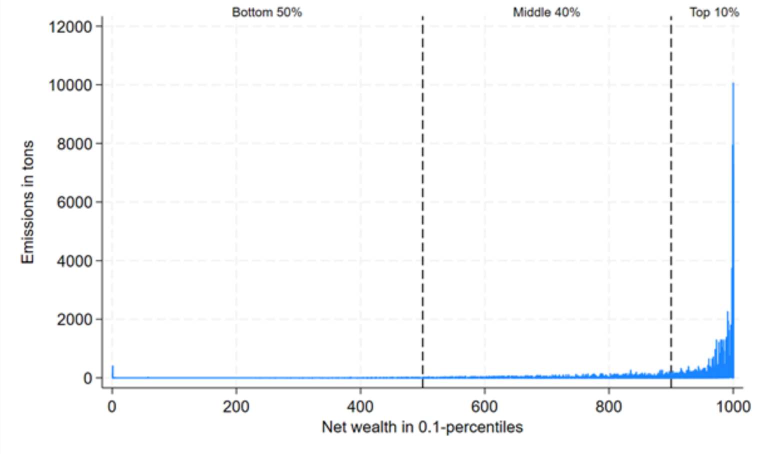
⇒ The wealth share rises (and may explode), but the growth rate is minimally affected. The model thus reproduces the small effects on growth typical for Kaldor-Steindl models.

Wealth models: implications for the ecology

- Wealth inequality is likely to rise further, or at least remain very high.
- Growth regimes are likely to become more wage-led/less profit-led, if the profit rate is exogenous.
- With an endogenous profit rate, higher wealth concentration will reduce growth, but not substantially.

Socio-ecological transition

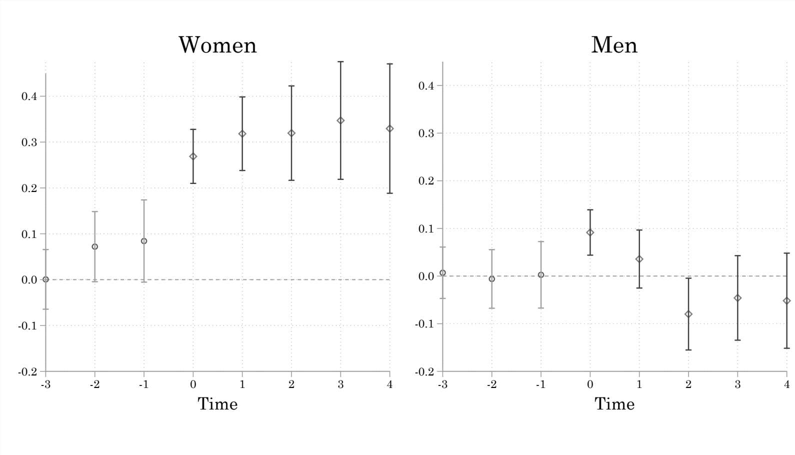
CO_2 emissions (including from investment) by net wealth (Germany)



Source: Feldwisch, Rehm, Brinkmeier (2025 mimeo)

⇒ CO_2 emissions are highly concentrated at the top of the wealth distribution. This is due to the unequal ownership of firms. ▸ Population shares

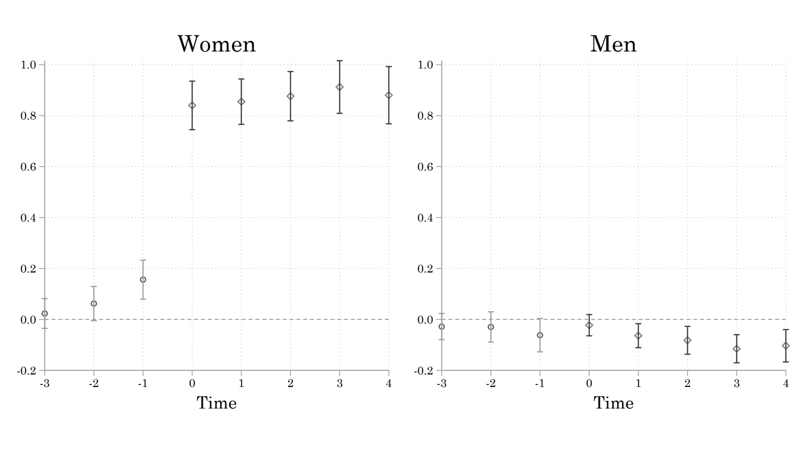
Effect of life events on unpleasant household tasks by gender in Germany: Cohabitation



Source: Molitor, Rebaudo, Rehm (2025 mimeo)

⇒ Women work more in the household after moving in with a partner, while the effect for men is short-lived.

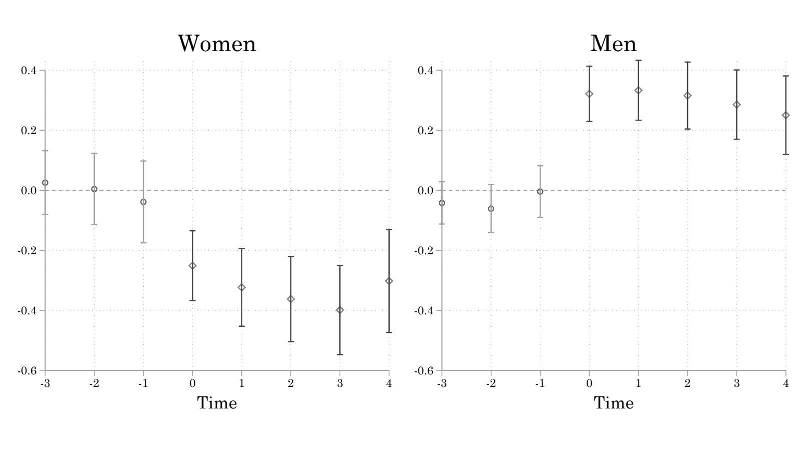
Household work after birth



Source: Molitor, Rebaudo, Rehm (2025 mimeo)

⇒ Women work a lot more in the household after the first birth of a child, while men work *less*.

Household work after divorce



Source: Molitor, Rebaudo, Rehm (2025 mimeo)

⇒ Following a divorce, the effects reverse partially: women work less, men more.

Further research

- Energy poverty has negative health effects (Buchner/Rehm 2025 Energy Econ.) ▸ Energy poverty
- Unexpected child care burdens fall mainly on women (Hanzl/Rehm 2023 Fem. Econ.) ▸ School closures
- More traditional gender attitudes are linked to lower concerns about the climate (Rehm/Weier mimeo) ▸ Climate concerns
- Export-oriented growth models have different effects by gender and race (Kohlhase/Rehm mimeo) ▸ Wage differentials

Conclusion

- Wealth inequality is gendered: the gender wealth gap is larger at the top of the distribution. Put differently, the top of the wealth distribution is more male than female.
- Wealth inequality is likely to remain high or rise further, with little to no attenuating effects on growth. At the same time, a very large share of CO_2 emissions are generated by the top of the wealth distribution. $\Rightarrow$ The direct the direct effect of wealth inequality is very large, and very likely more relevant than the indirect effect through economic growth.
- A socio-ecological transition will require a focus on green and purple jobs (Onaran ea. 2021) and a redistribution of work and care time, but traditional gender norms seem very persistent:
  - Decision-making power within couples is linked to higher wealth, especially for men at the top.
  - Unpleasant household tasks are performed more often by women in couples.

Appendix

A1: Gender gap in gross wealth across countries

		Base (1)	Age & Educ. (2)	Family (3)	Inheritances (4)	Labor & Assets (5)
Austria	Female	-0.703***	-0.449	-0.460	-0.932***	-0.641*
		(0.239)	(0.285)	(0.281)	(0.354)	(0.316)
	IMR	0.372**	0.406*	1.914**	1.673	-0.134
		(0.140)	(0.198)	(0.731)	(1.077)	(0.365)
Belgium	Female	-0.120	-0.037	-0.190	-0.239*	-0.198
		(0.288)	(0.165)	(0.149)	(0.141)	(0.188)
	IMR	0.311***	0.371***	0.345*	0.319*	-0.288*
		(0.102)	(0.071)	(0.201)	(0.166)	(0.152)
Germany	Female	-0.296	-0.209	-0.334	-0.348	-0.199
		(0.273)	(0.265)	(0.229)	(0.229)	(0.354)
	IMR	0.328***	0.286***	0.530*	0.489*	-0.426*
		(0.109)	(0.107)	(0.294)	(0.285)	(0.242)
Spain	Female	-0.546***	-0.429*	-0.364*	-0.372**	-0.243
		(0.178)	(0.207)	(0.201)	(0.176)	(0.168)
	IMR	0.049	0.039	0.046	0.065	0.062
		(0.051)	(0.066)	(0.096)	(0.089)	(0.110)
France	Female	-0.407***	-0.335***	-0.382***	-0.463***	-0.289**
		(0.136)	(0.109)	(0.105)	(0.133)	(0.115)
	IMR	0.183***	0.178***	0.351***	0.347***	-0.058
		(0.039)	(0.041)	(0.069)	(0.072)	(0.090)
Greece	Female	-0.577***	-0.599***	-0.511***	-0.558***	-0.411**
		(0.158)	(0.107)	(0.147)	(0.160)	(0.198)
	IMR	0.098*	0.010	0.271*	0.206	0.029
		(0.054)	(0.038)	(0.146)	(0.136)	(0.200)
Portugal	Female	-0.266	-0.625***	-0.609***	-0.616***	-0.020
		(0.486)	(0.187)	(0.227)	(0.225)	(0.336)
	IMR	0.109**	0.078*	0.104	0.150	-0.005
		(0.051)	(0.047)	(0.125)	(0.128)	(0.092)
Slovakia	Female	-0.677***	-0.593***	-0.637***	-0.550***	-0.324*
		(0.169)	(0.157)	(0.172)	(0.137)	(0.180)
	IMR	0.018	0.063	-0.110	-0.049	-0.130
		(0.074)	(0.086)	(0.189)	(0.206)	(0.135)

Quantile regression with Heckman selection at the 95th percentile. Controls include age, education, rel. status, children, empl. status, labor market attachment, earnings, inheritance, asset ownership

Source: Schneebaum, Rehm, Mader, Hollan (2018), data: HFCS 2010 back

A2: Effect of the variable having joint or more decision-making power on wealth

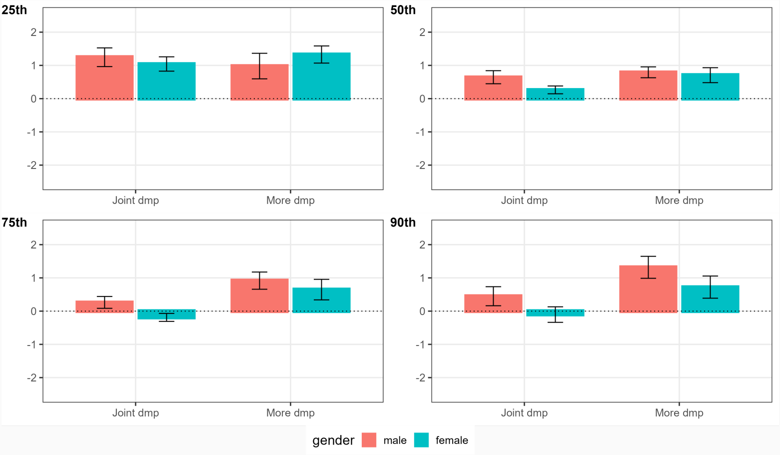


Figure 1: RIF coefficient estimates of DMP

Interpretation: Having decision-making power correlates with higher wealth levels (for men and women), it is almost always more beneficiary for men and joint decision-making power is insignificant for women with levels of wealth above the median.

Source: HFCS 2021, own calculations

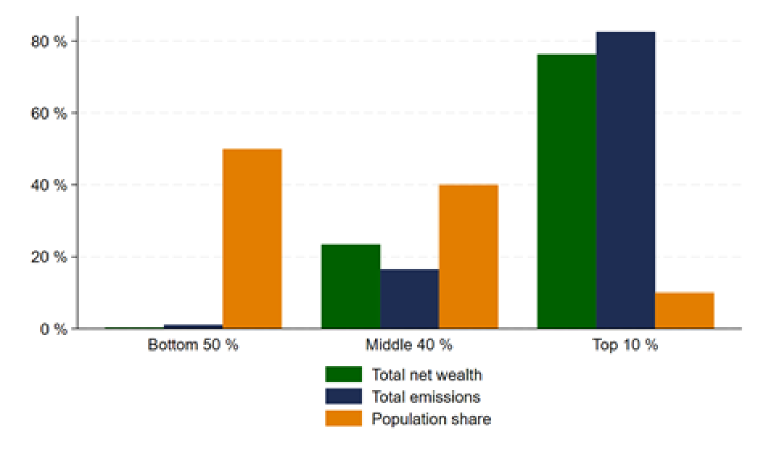
back

A3: Decomposition

	P25			P50			P75			P90		
	Coeff.(E)	Std. err.	%	Coeff.(E)	Std. err.	%	Coeff.(E)	Std. err.	%	Coeff.(E)	Std. err.	%
Men	10.781	0.0150		12.188	0.0190		12.928	0.0090		13.664	0.0390	
Women	10.618	0.0140		12.125	0.0210		12.874	0.0190		13.569	0.0540	
Difference	0.163	0.0210		0.063	0.0280		0.054	0.0210		0.096	0.0670	
No decision-making power												
Joint dmp	0.002	0.0055	1.3	0.001	0.0015	1.9	0	0.0002	0.8	0.001	0.0007	1.3
More dmp	0.094***	0.0038	57.6	0.076***	0.0025	138.1	0.087***	0.0033	171.3	0.126***	0.0066	214.3
Ref: Primary educ.												
Secondary educ.	-0.006***	0.0002	-3.8	-0.007***	0.0002	-11.9	-0.001***	0.0001	-1.5	0.007***	0.0002	10.7
Tertiary educ.	0.026***	0.0007	15.7	0.017***	0.0004	29.9	0.009***	0.0003	17.5	0.006***	0.0003	15.9
Ref: High service work												
Low service work	0.025***	0.0005	15.4	0.022***	0.0003	38	0.026***	0.0004	50.9	0.04***	0.0009	76.5
Self-employed	0.059***	0.0020	36	0.055***	0.0018	97.6	0.089***	0.0045	176.6	0.143***	0.0114	236.3

HFCS 2021. Complex survey weights, replicate weights and multiple imputations taken in to account.
***, **, * refer to significance levels at 0.1, 1, and 5 percent.

A4: CO_2 emissions, wealth, and population shares



Source: Feldwisch, Rehm, Brinkmeier (2025 mimeo)

CO_2 emissions are distributed even more unequally than wealth across the population. back

A5: Method

Part 1: RIF estimations

What associated to socio-demographic characteristics and in particular decision-making power (dmp) have at different points of the wealth distribution?

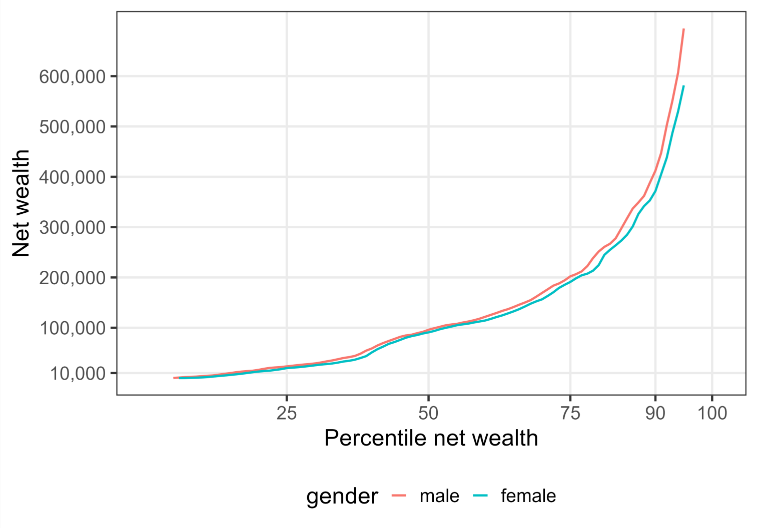
$$RIF(y_i; q_\tau; F_Y) = \alpha + \beta \mathrm{Dmp}_i + \gamma \mathrm{Educ}_i + \delta \mathrm{OccStat}_i + \theta X_i + \varepsilon_i \quad (6)$$

Part 2: Kitigawa-Oaxaca-Blinder decomposition of GWG

How much of the GWG can be explained by observed differences?

$$RIF \underset{m-f}{\Delta} = (\bar{X}_m - \bar{X}_f)\hat{\beta}_m + \bar{X}_f(\hat{\beta}_m - \hat{\beta}_f) \quad (7)$$

A6: Decomposition of overall gap



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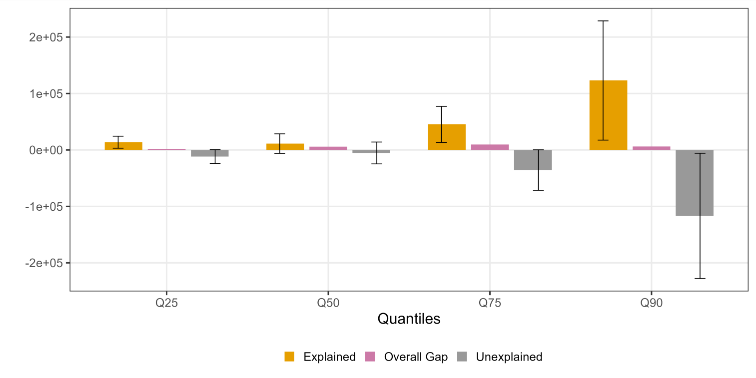
A7: Decomposition of overall gap



A8: Distribution of DMP

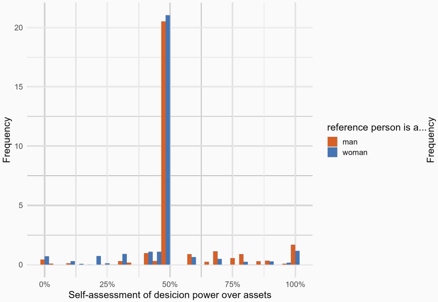


Figure 2: distribution of decision-making power

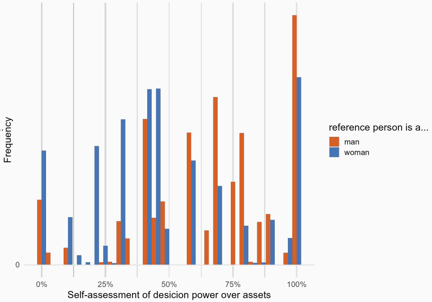


Figure 3: Excluding joint decision-making power

Source: HFCS 2021, own calculations

A9: Solution of the full model with six parameters

$$z^{**} = \frac{-D \pm \sqrt{D^2 - 4CE}}{2C} \tag{8}$$

where

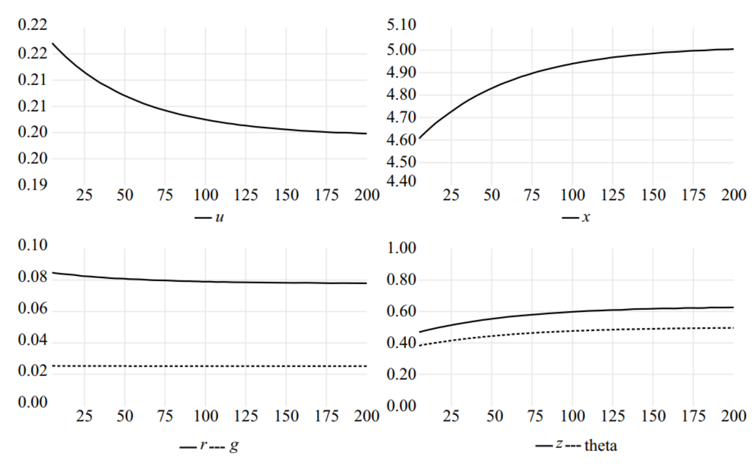
$$C = \left[s_w(1-\alpha) + s_r\alpha\right](1-\pi)(\gamma_r - \gamma_w) - (s_r\gamma_r - s_w\gamma_w)\pi \tag{9}$$

$$D = s_r\alpha(1-\pi)(\gamma_r - \gamma_w) + s_r\gamma_r\pi - \left[s_w(1-\alpha) + s_r\alpha\right](1-\pi)\gamma_w - s_w\gamma_w\pi \tag{10}$$

$$E = s_r\alpha(1-\pi)\gamma_w \tag{11}$$

◂ back

A10: Dynamics of the calibrated model



This graph shows the dynamic in capacity utilization u, the wealth-to-income ratio x, the profit rate r, the growth rate g, capitalists' wealth share z, and the ratio of capitalists' income to workers' income (personal income distribution) .

Source: Ederer and Rehm (2020 ROKE) ◂ back

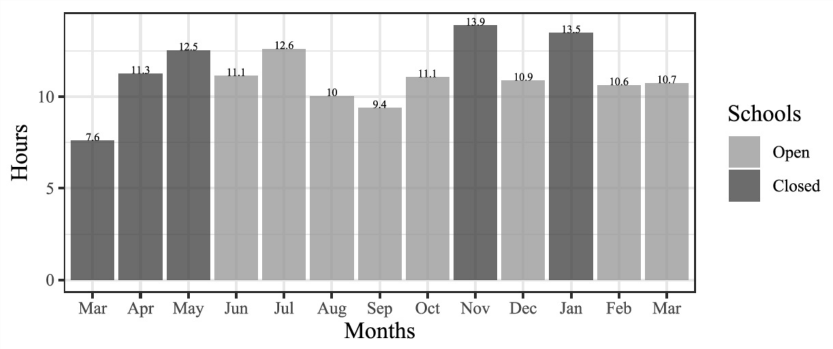
A11: Energy poverty and health

	(1) Good health	(2) Good health	(3) Good health	(4) Good health
Ten percent rule (tpr)	−0.00828***			
	[0.00268]			
Two times median share (mtwo)		−0.00879**		
		[0.00370]		
Low income high costs (lihc)			−0.00892**	
			[0.00396]	
subjective				−0.0323**
				[0.0134]
Income poverty	−0.0108***	−0.0112***	−0.0114***	−0.0119
	[0.00375]	[0.00373]	[0.00372]	[0.00723]
Log of eq. HH income	0.00270	0.00366	0.00448	0.00443
	[0.00364]	[0.00361]	[0.00357]	[0.00681]
Age	0.00215*	0.00218*	0.00213*	0.0179***
	[0.00111]	[0.00111]	[0.00111]	[0.00346]
Age squared	−0.0000812***	−0.0000810***	−0.0000808***	−0.000209***
	[0.0000107]	[0.0000107]	[0.0000107]	[0.0000335]
Registered Unemployed	−0.0551***	−0.0554***	−0.0554***	−0.0542***
	[0.00497]	[0.00497]	[0.00497]	[0.0100]
Not employed	−0.0202***	−0.0203***	−0.0202***	−0.00912
	[0.00399]	[0.00399]	[0.00399]	[0.00836]
In Education / Apprentice / Community Service	−0.00177	−0.00188	−0.00181	−0.0116
	[0.00469]	[0.00469]	[0.00469]	[0.00925]
Pensioner	0.0125**	0.0124**	0.0125**	0.0129
	[0.00569]	[0.00569]	[0.00569]	[0.0111]
High School	0.00338	0.00362	0.00364	−0.0299
	[0.00868]	[0.00867]	[0.00867]	[0.0182]
More than High School	0.00380	0.00404	0.00393	−0.0470*
	[0.0116]	[0.0116]	[0.0116]	[0.0245]
Married	0.00182	0.00180	0.00180	0.00165
	[0.00550]	[0.00550]	[0.00550]	[0.0137]
Separated or divorced	0.0118	0.0115	0.0115	0.0166
	[0.00832]	[0.00832]	[0.00832]	[0.0196]
Widowed	−0.00288	−0.00294	−0.00360	0.00641
	[0.0143]	[0.0144]	[0.0144]	[0.0342]
Number of dependants in hh	0.000885	0.000942	0.00101	−0.00453
	[0.00185]	[0.00185]	[0.00185]	[0.00441]
Individual Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
n (total)	255,684	255,684	255,684	86,211

This table shows the estimates of a linear probability model for the four energy poverty indicators on the probability of being in good health (dichotomized as 1 for very good, good or satisfactory, and 0 for poor or bad). The reference category for labour force status is (self-)employed, for education is less than high school, and for marital status is single. Cluster robust standard errors in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01.

Source: Buchner and Rehm (2025), data: SOEP (2022) back

A12: Difference in paid work hours between mothers and fathers by month and school closures due to COVID-19



Source: Hanzl/Rehm (2023 Fem. Econ.), data: ACPP 2023

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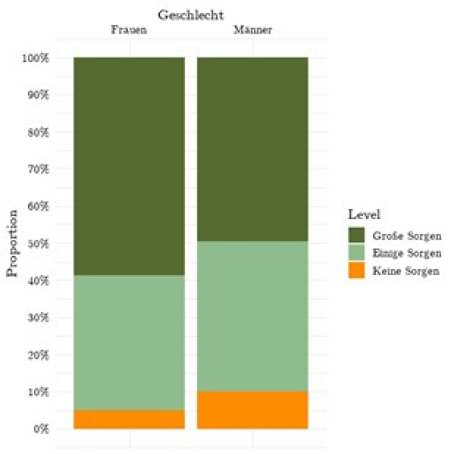
A13: School closures: OLS regression

	Dependent variable:		
	log(Paid Weekly Work Hours)		
	(1)	(2)	(3)
Schools Closed	−0.087**	−0.082**	−0.072*
	(0.040)	(0.040)	(0.040)
Female	−0.277***	−0.219***	−0.219***
	(0.014)	(0.016)	(0.016)
Mother		−0.201***	−0.163***
		(0.026)	(0.030)
Mother × Schools Closed			−0.082*
			(0.042)
Age 31-50	0.022	0.052***	0.053***
	(0.019)	(0.020)	(0.020)
Age 51-72	0.006	0.00004	0.001
	(0.020)	(0.020)	(0.020)
Edu High School	−0.001	0.012	0.012
	(0.016)	(0.016)	(0.016)
Edu University	−0.019	−0.011	−0.011
	(0.019)	(0.019)	(0.019)
High Income	0.127***	0.138***	0.138***
	(0.013)	(0.013)	(0.013)
Migration	−0.052***	−0.045***	−0.046***
	(0.016)	(0.016)	(0.016)
Work Closed Some	−0.004	0.0002	−0.0004
	(0.037)	(0.037)	(0.037)
Work Closed All	−0.228***	−0.231***	−0.231***
	(0.054)	(0.053)	(0.054)
Work from home	0.023	0.024	0.024
	(0.016)	(0.016)	(0.016)
Short-time Work	−0.475***	−0.483***	−0.483***
	(0.021)	(0.021)	(0.021)
Furlough	−0.199***	−0.192***	−0.192***
	(0.032)	(0.032)	(0.032)
Constant	3.601***	3.573***	3.569***
	(0.035)	(0.035)	(0.035)
Wave Dummy	Yes	Yes	Yes
Observations	12,392	12,392	12,392
R^2	0.175	0.182	0.182
Adjusted R^2	0.173	0.180	0.180
Residual Std. Error	0.570 (df = 12361)	0.568 (df = 12360)	0.568 (df = 12359)

This table shows the results of an OLS regression with log paid work time as dependent variable. Robust standard errors in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Base categories are schools open, male, persons without children and fathers, age 15-30, less than high school education, low income, no migration background, workplaces open, not working from home, no short time work, and not furloughed. The baseline of the wave dummy is March 2020.

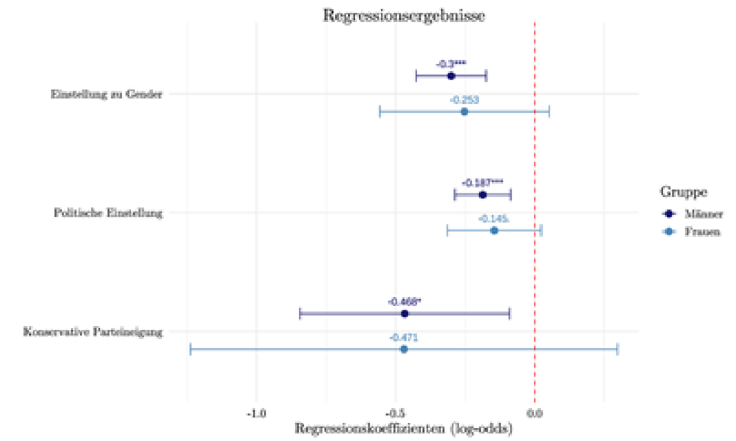
Source: Hanzl/Rehm (2023 Fem. Econ.), data: ACPP 2023 back

A14: Concerns about the climate by gender in Germany



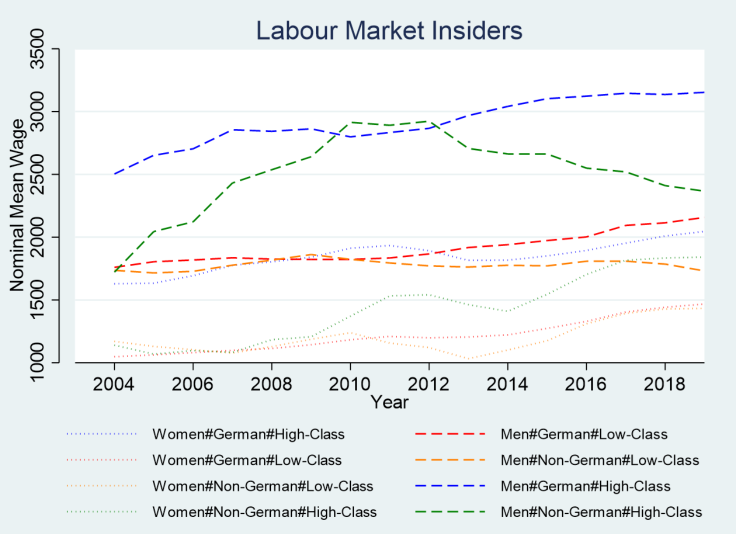
Source: Weier/Rehm (2025 mimeo), data: SOEPv38 ◂ back

A15: Gender and political attitudes and climate concerns by gender in Germany



Source: Weier/Rehm (2025 mimeo), data: SOEPv38 back

A16: Nominal wage differentials by gender, migration background, and class



Source: Kohlhase/Rehm (2025 mimeo), data: SOEPv37

back