Global Trends in Income Intergenerational Inequalities?

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III/LIS Comparative Economic Inequality Conference
24 February 2023

Why Income Inter-generational Inequalities

- **Inter-generational Income (IGI) inequality**: hot topic for media, policymakers
  - Surge in media coverage since 2010s
  - Official reports on IG inequalities/"fairness" (UK, EU, Australia, ...)
  - Age-targeted policies (minimum wage exemptions, benefits, help-to-buy)
- Many dimensions **under-investigated**:
  1. No objective measures that compare the magnitude across countries
  2. Unclear if different countries share same trends
  3. Conventionally, focus only labor income: what about employment, transfer, taxes?

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We propose...

...a *Global*, *Coherent*, *In-Depth* analysis:

- **Evidence on IGI inequality in the last 20 years from 27 countries**

- **What income components drive changes in IGI inequalities?**

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  Result 1: Diverging trends in rich and developing countries
  Result 2: Richer countries:Income has increased substantially for old and much less (or not all) for young . Poorer countries: large income growth for young

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  Result 1: Diverging trends in rich and developing countries
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- **What income components drive changes in IGI inequalities?**
  Result 3: Rise (rich countries) driven by employment rate divergence
  Result 4: Fall (developing countries) driven by faster young's labor income growth

Take away and Open Research Questions

Take-away:

- Rise IGI in high-income country: **structural changes at late/final stage**
- Decline IGI in low-income: **structural changes at earlier stage** and fast trasformation of the economy
- Tackling IGI **needs public policy**: future reduction in rich country unlikely

Data: Luxembourg Income Study

- Luxembourg Income Study (LIS) dataset
- Harmonised income microdata
- Sample selection:
  - Data at individual level
  - Available between 2004 and 2006, and between 2016 and 2018
  - At least 5 waves (3 years window)
  - Reports only gross figures or only net figures
- 27 countries for main analysis
- We observe:
  - Individual total income, and its sub-components (labour, pension, subsidies, taxes)
  - Employment, unemployment, inactivity status

Snapshot Data

Country	Observations	Cleaned Obs.	GRD sample	Datasets
Australia	160,263	160,050	48,358	6
Austria	167,500	167,497	20,770	15
Belgium	162,608	162,608	21,458	14
Brazil	1,466,602	1,466,602	635,366	5
Canada	802,049	802,049	131,964	15
Chile	1,091,258	1,091,258	372,213	6
Colombia	7,915,257	7,915,257	990,413	15
Czech Republic	80,831	80,831	24,914	5
Denmark	735,845	735,845	295,641	5
Finland	104,274	104,274	42,900	5
France	1,296,113	1,296,110	159,154	15
Germany	427,511	424,596	58,080	15
Ireland	148,980	148,980	20,474	15
Israel	252,068	252,068	33,437	15
Italy	84,472	84,472	32,737	5
Mexico	778,510	778,487	252,363	9
Norway	1,618,633	1,618,510	449,228	5
Paraguay	238,322	238,322	33,868	15
Peru	1,062,826	1,062,822	148,999	15
Poland	1,269,373	1,269,373	156,494	15
Serbia	50,526	50,526	27,611	4
Slovakia	123,090	123,090	25,876	9
Slovenia	47,700	47,700	18,862	5
Switzerland	189,041	189,041	20,086	13
United Kingdom	614,202	614,202	85,028	15
United States	2,187,365	2,187,365	291,371	15
Uruguay	1,455,840	1,455,840	129,096	15

Disposable income

- Ideal measure of disposable income

$$\hat{y}_q \equiv y_q^g + y_q^k + \hat{\Theta}_q^g - \hat{\tau}_q,$$

- Available measure of disposable income

$$y_q = y_q^g + \Theta_q^g - \tau_q,$$

- Not a problem: capital income [0.4%-5.2%] (median 1.0) for young; [0.5%-10%] (median 3.2) for old.

Intergenerational Income Ratio

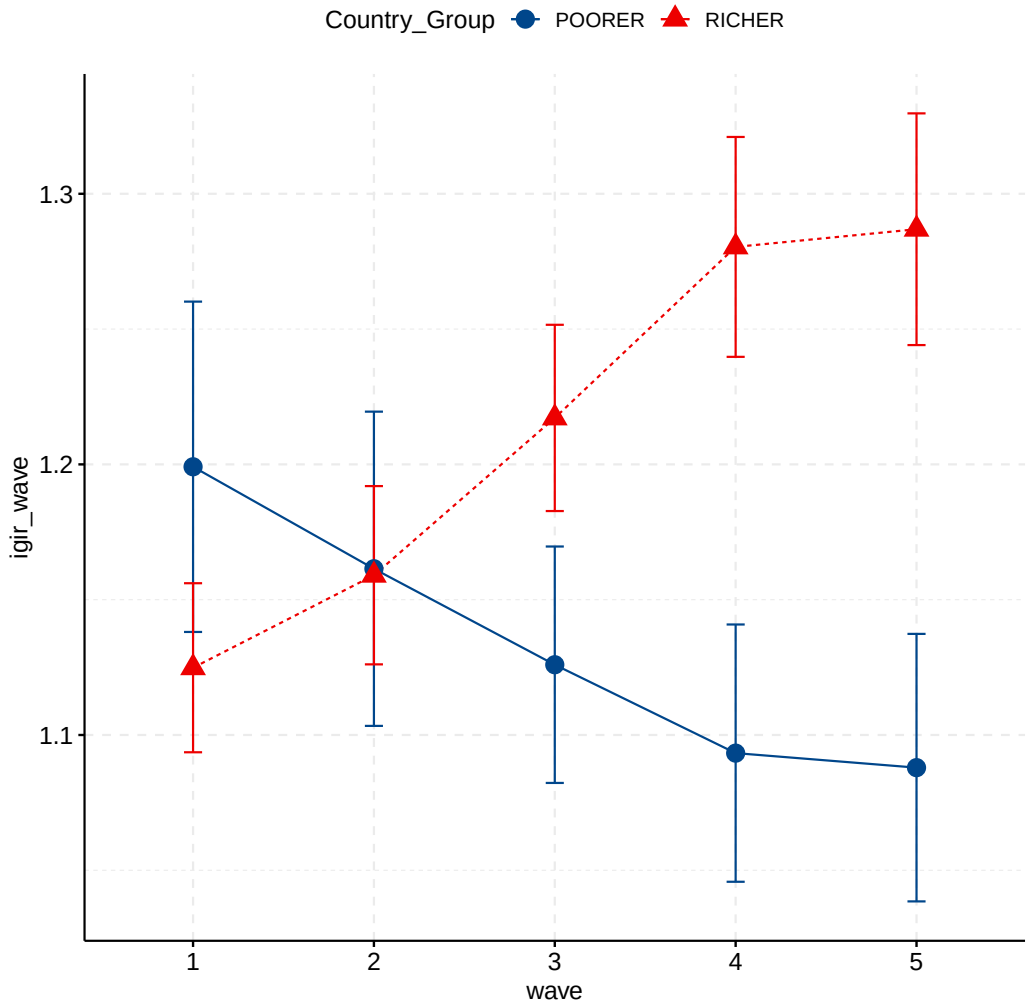
- **Inter-Generational Income Ratio** *(IGIR)*
- For two age groups j (old), j' (young), the ratio is:

$$y_{j,t} = \frac{1}{N_{j,t}} \sum_{q \in \mathcal{Q}_{j,t}} y_{q,t}$$

$$R^{j}_{j'} = \frac{y_j}{y_{j'}}$$

- Five Age-groups:
  1. 16-24, young adults
  2. 25-34, early career
  3. 35-49, mid-career
  4. 50-64, late-career
  5. 65+, old adults

IGIR: late-career (50-64) vs early-career (25-34)



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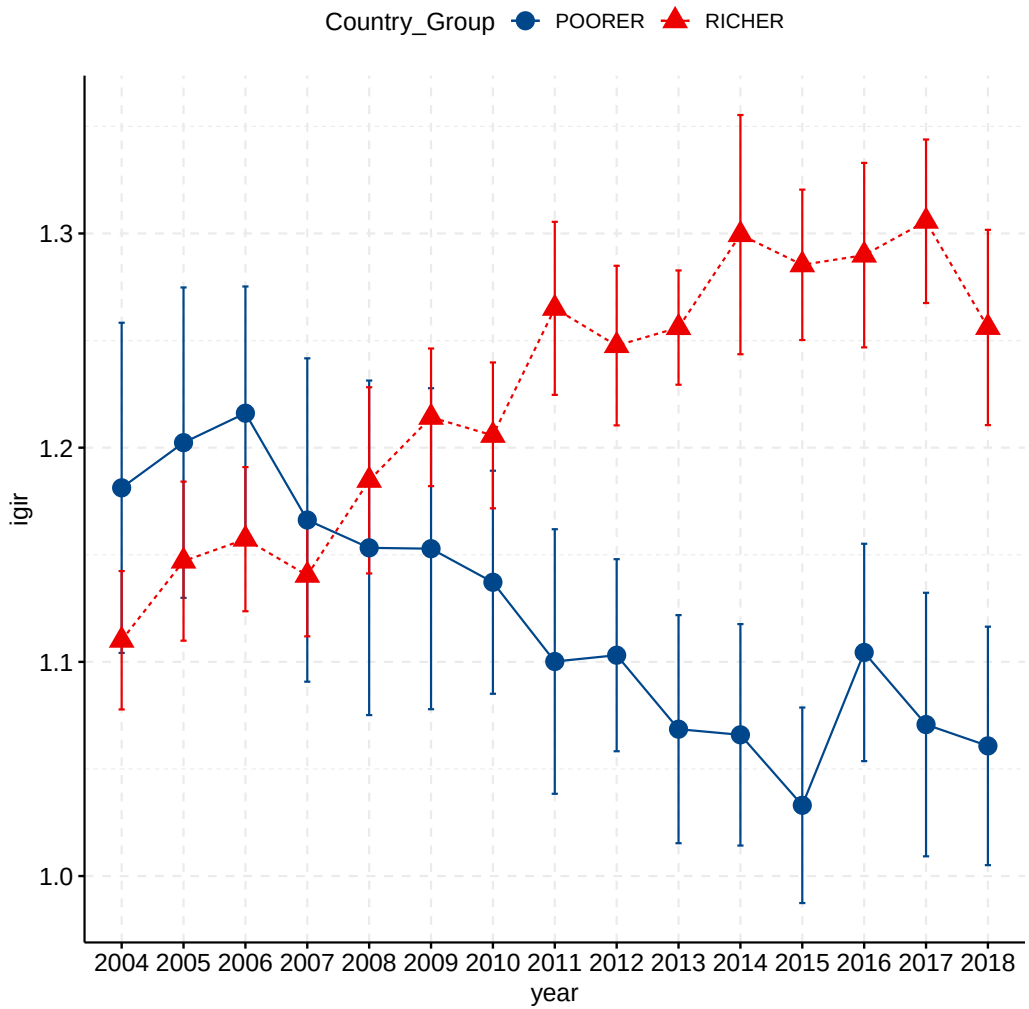

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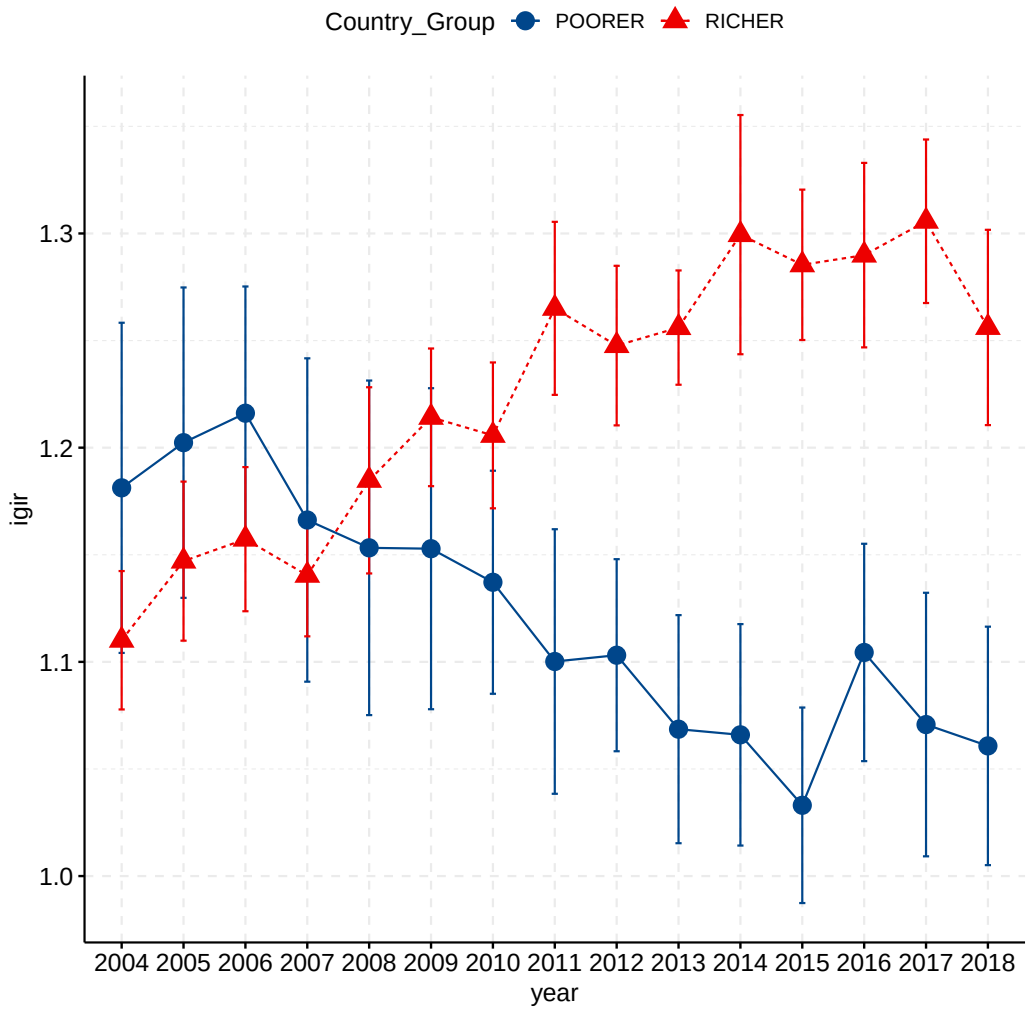


Stylized fact 1. In richer countries, the IGIR has steadily risen in the last 20 years by around 20 percent. In poorer countires it has been declining by around 15 percent

IGIR trends

	Waves			Years		
	(1)	(2)	(3)	(4)	(5)	(6)
[1] trend	-0.024*	0.013*	0.018	-0.009***	0.003**	0.008
	(0.012)	(0.007)	(0.026)	(0.003)	(0.001)	(0.006)
[2] trend * Richer	0.061***			0.021***		
	(0.015)			(0.003)		
[3] Richer	-0.053			-0.058 **		
	(0.039)			(0.027)		
[4] trend * Initial log GDP (dev mean)		0.042***	0.042***		0.013***	0.013***
		(0.011)	(0.011)		(0.002)	(0.002)
[5] Initial log GDP (dev mean)		-0.030	-0.003		-0.035*	-0.012
		(0.029)	(0.032)		(0.023)	(0.022)
[6] Constant	0.165***	0.442	0.134	0.174***	0.499**	0.23
	(0.031)	(0.302)	(0.335)	(0.021)	(0.204)	(0.23)
Second order terms			Yes			Yes
Observations	132	132	132	299	299	299
R^2	0.17	0.17	0.19	0.21	0.19	0.21
F-Test:[1]=[2] or [1]=[4]	10.24***	4.07**		13.1***	12.3***	
Trend effect at min GDP	-0.024*	-0.044**	-0.042**	-0.009 ***	-0.015 ***	-0.015***
Trend effect at 25% GDP	-0.024*	-0.005	-0.004	-0.009 ***	-0.002	-0.002*
Trend effect at 75% GDP	0.037***	0.034***	0.035***	0.012 ***	0.010 ***	0.010***
Trend effect at max GDP	0.037***	0.046***	0.047***	0.012***	0.014 ***	0.014 ***

Growth Rate Differential

- Age-group income growth rate:

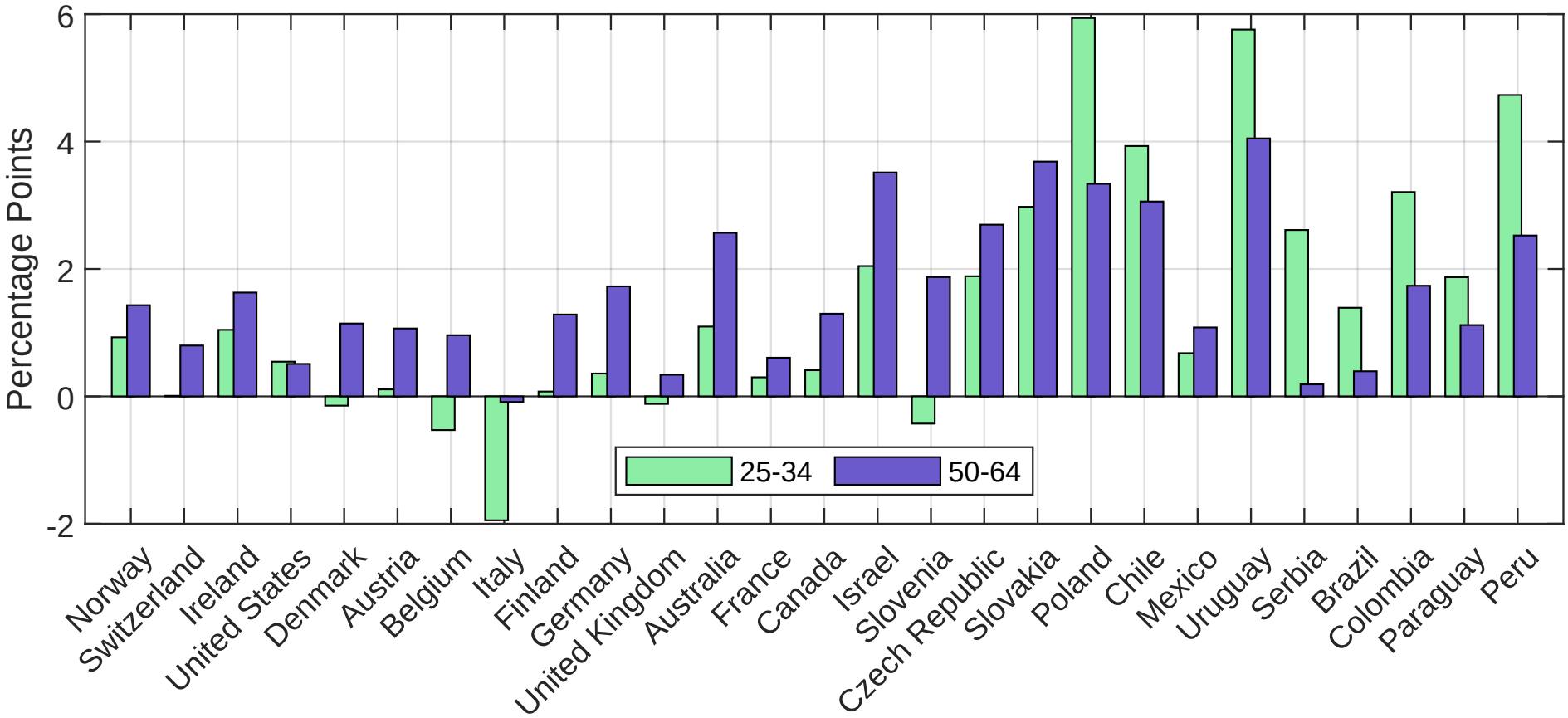
$$g_i(y_j) = \frac{1}{h_i}\left(\frac{y_{j,T_i+h_i}}{y_{j,T_i}} - 1\right)$$

- **Growth Rate Differential**, *(GRD)*:

$$GRD \equiv g(y_j) - g(y_{j'}) \approx \frac{\Delta R^j_{j'}}{R^j_{j'}(T)}.$$

Young and Old Growth Rates

Figure: Growth Rate Differentials, 50-64 vs 24-35



Growth Rate Differential

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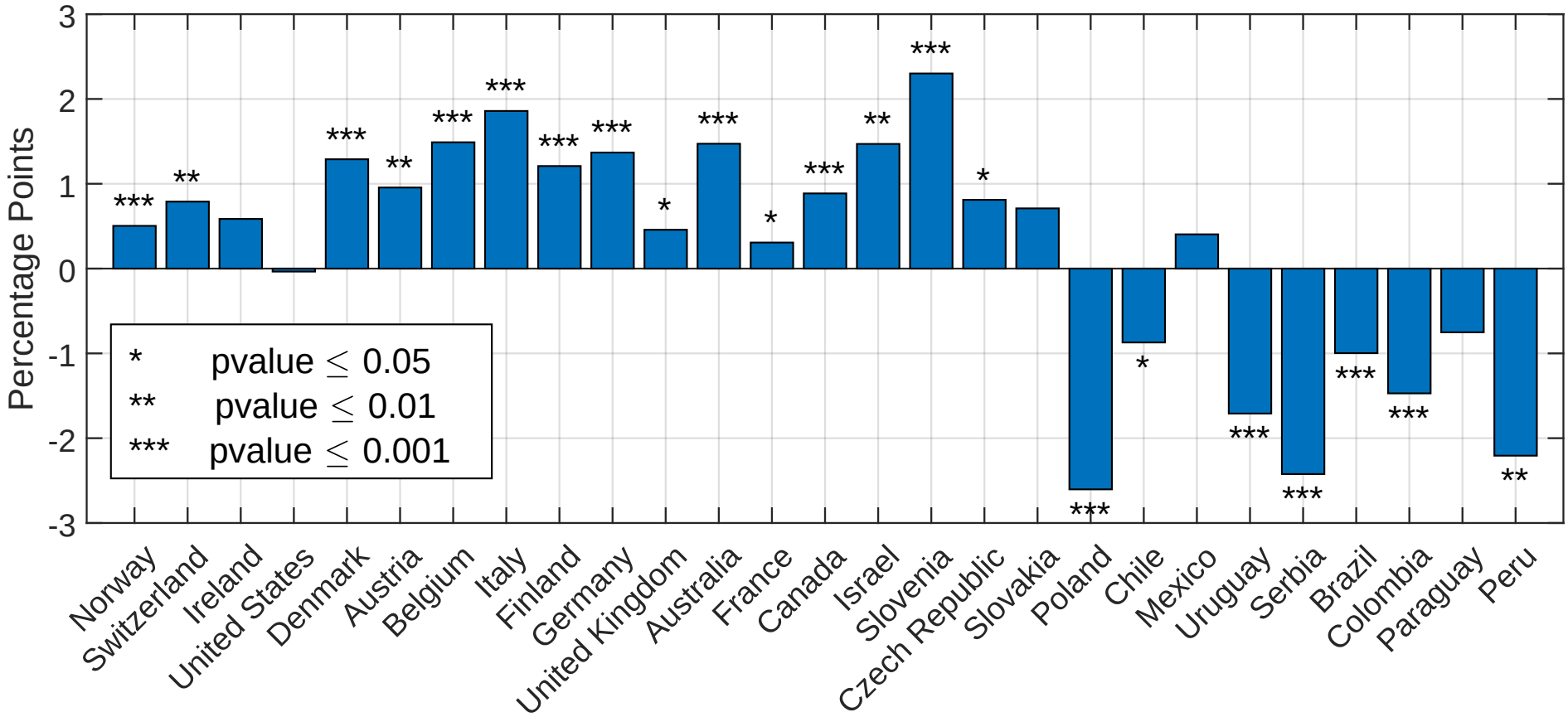
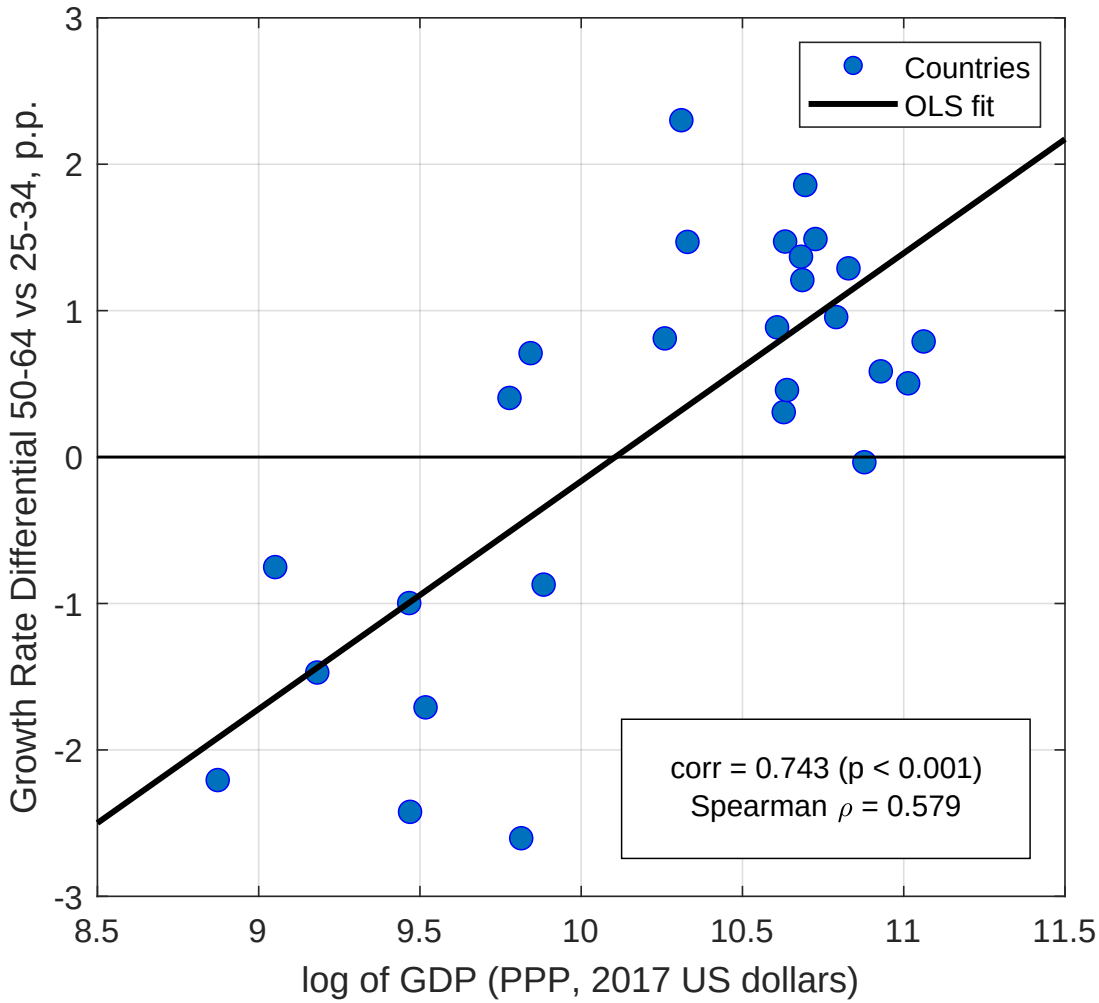


GRDs and Economic Development

Figure: *GRD* and country income level and growth



Income Decomposition

- Where did these differences in GRD originate from?
- Define income as:

$$y_j \equiv e_j y_j^l + p_j \Theta_j - \tau_j \tag{1}$$

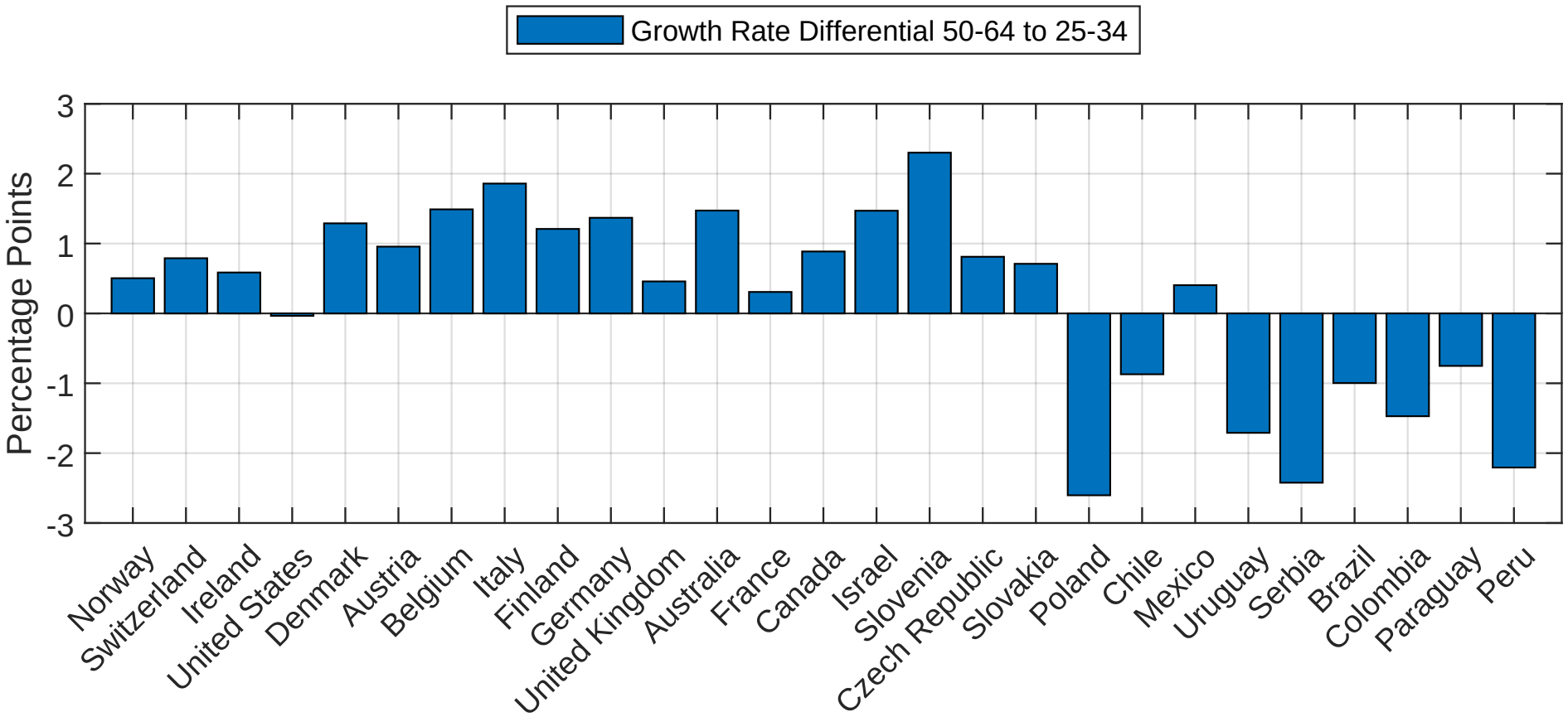
  - e_j employment share in age group j
  - y_j^l labour income conditional on being employed
  - p_j population share receiving benefits in age group j (includes pensions)
  - Θ_j amount of benefits, conditional on receiving them
  - τ_j taxes

- Decompose its variation as:

$$\Delta(y_j) = \underbrace{\frac{e_{j,T+H}\Delta y_j^l}{y_{j,T}}}_{\text{Gross Labour Income}} + \underbrace{\frac{y_{j,T}^l \Delta e_j}{y_{j,T}}}_{\text{Employment}} + \underbrace{\frac{p_{j,T+H}\Delta \Theta_j}{y_{j,T}}}_{\text{Transfer Income}} + \underbrace{\frac{\Theta_{j,T+h}\Delta p_j}{y_{j,T}}}_{\text{Transfer Share}} - \underbrace{\frac{\Delta \tau_j}{y_{j,T}}}_{\text{Taxes}}.$$

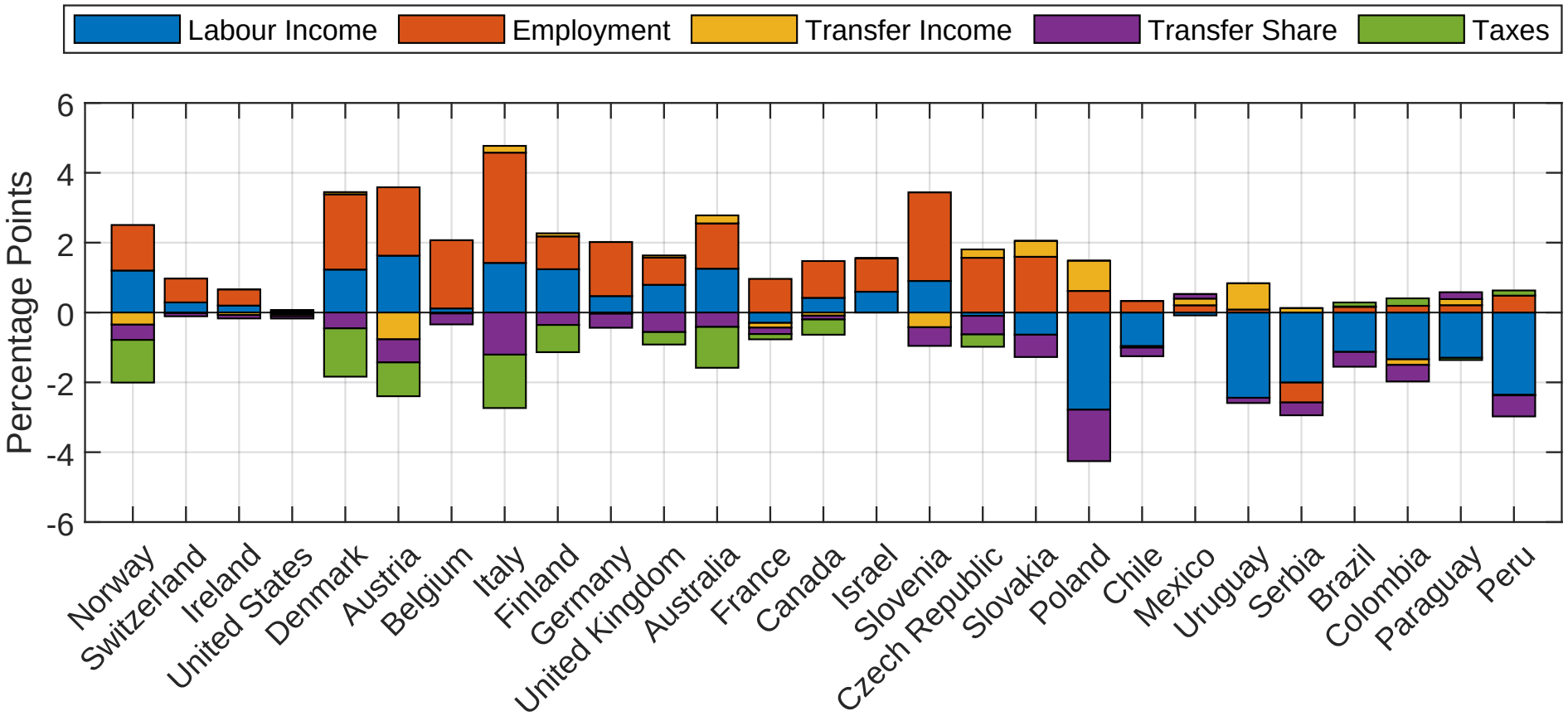
Income Decomposition

Figure: Recall the Growht Rate Differential...



Income Decomposition

Figure: Contribution to GRD of net income, by income components. 50-64 against 25-34



Income Decomposition - Employment

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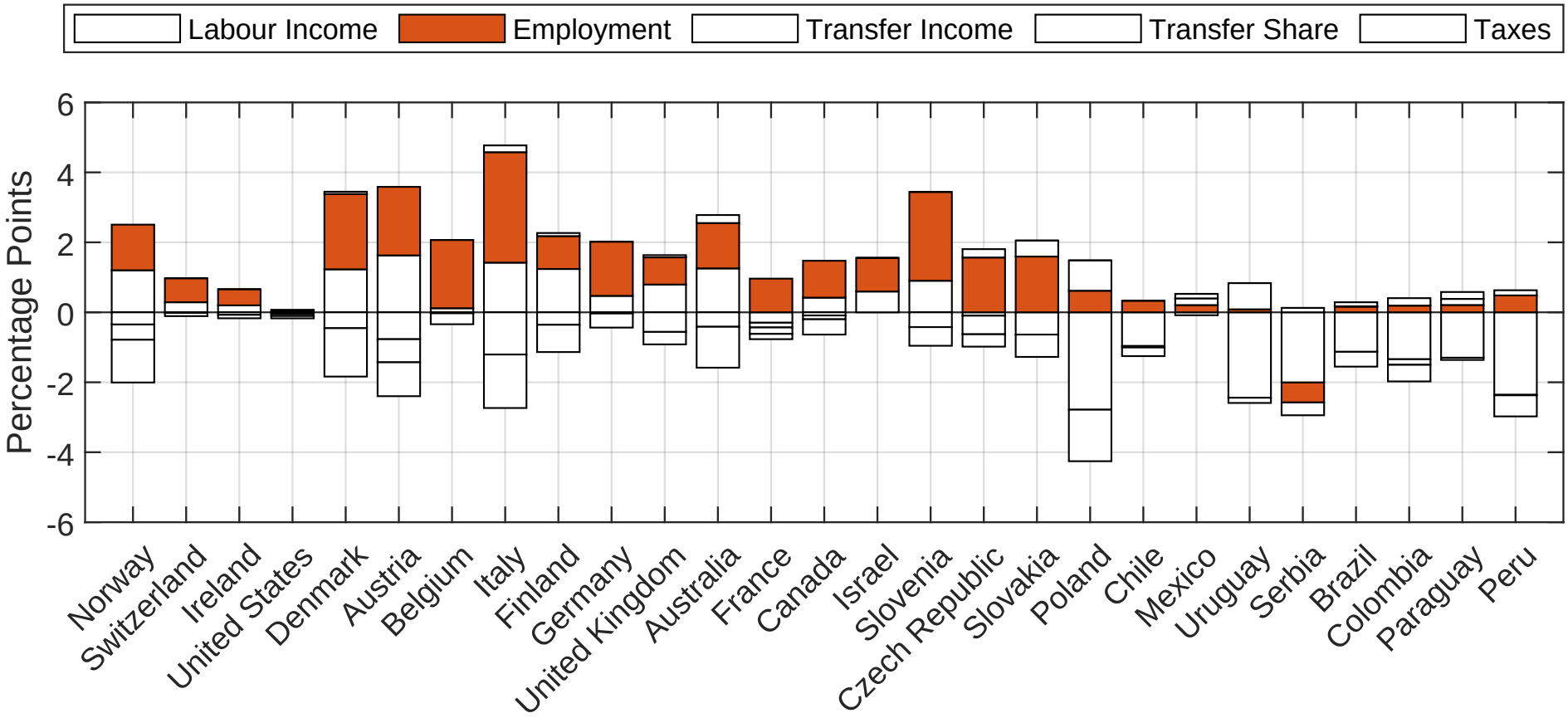

- Main contributor in rich countries and Eastern Europe: employment

Income Decomposition- Labor Income

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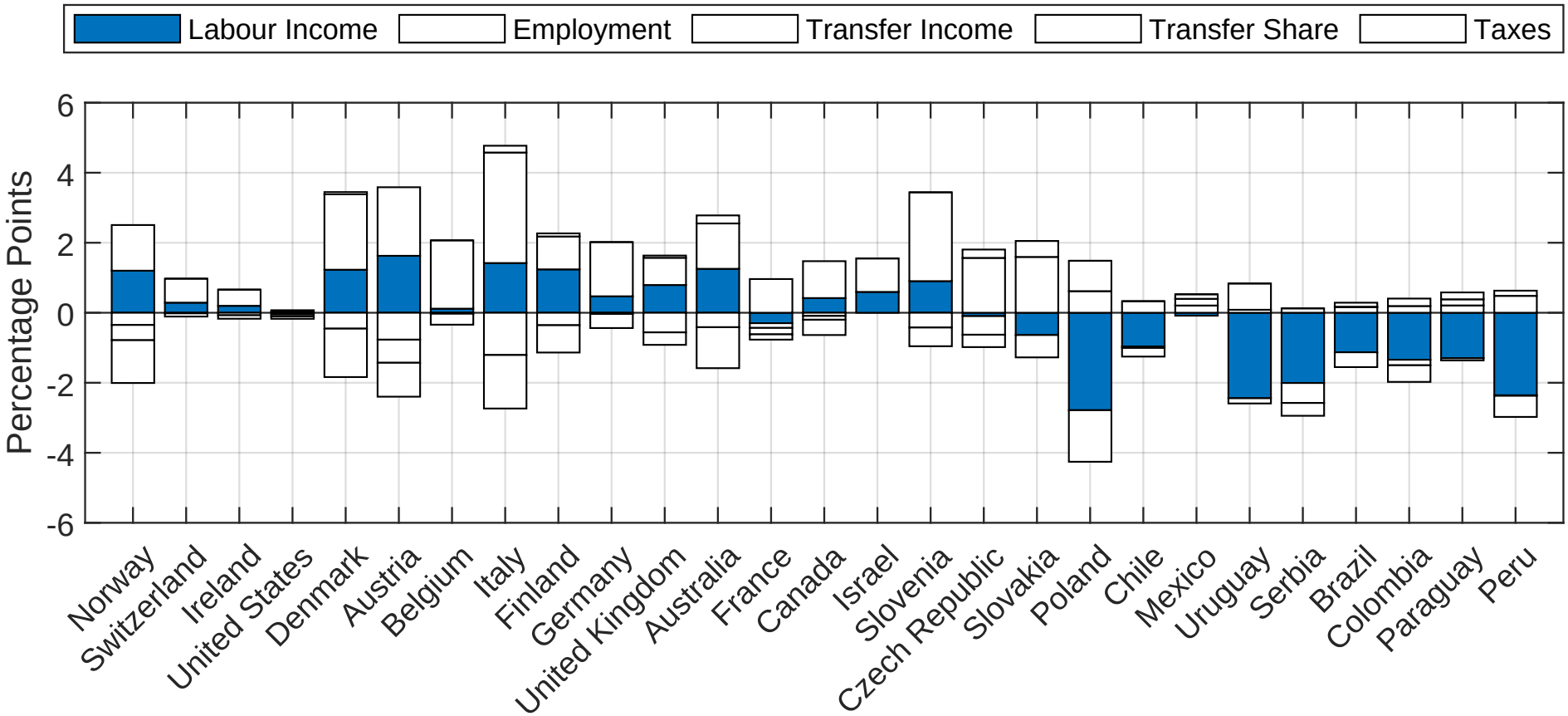

- Main contributor in lower-income countries: labour income

Income Decomposition- Transfers

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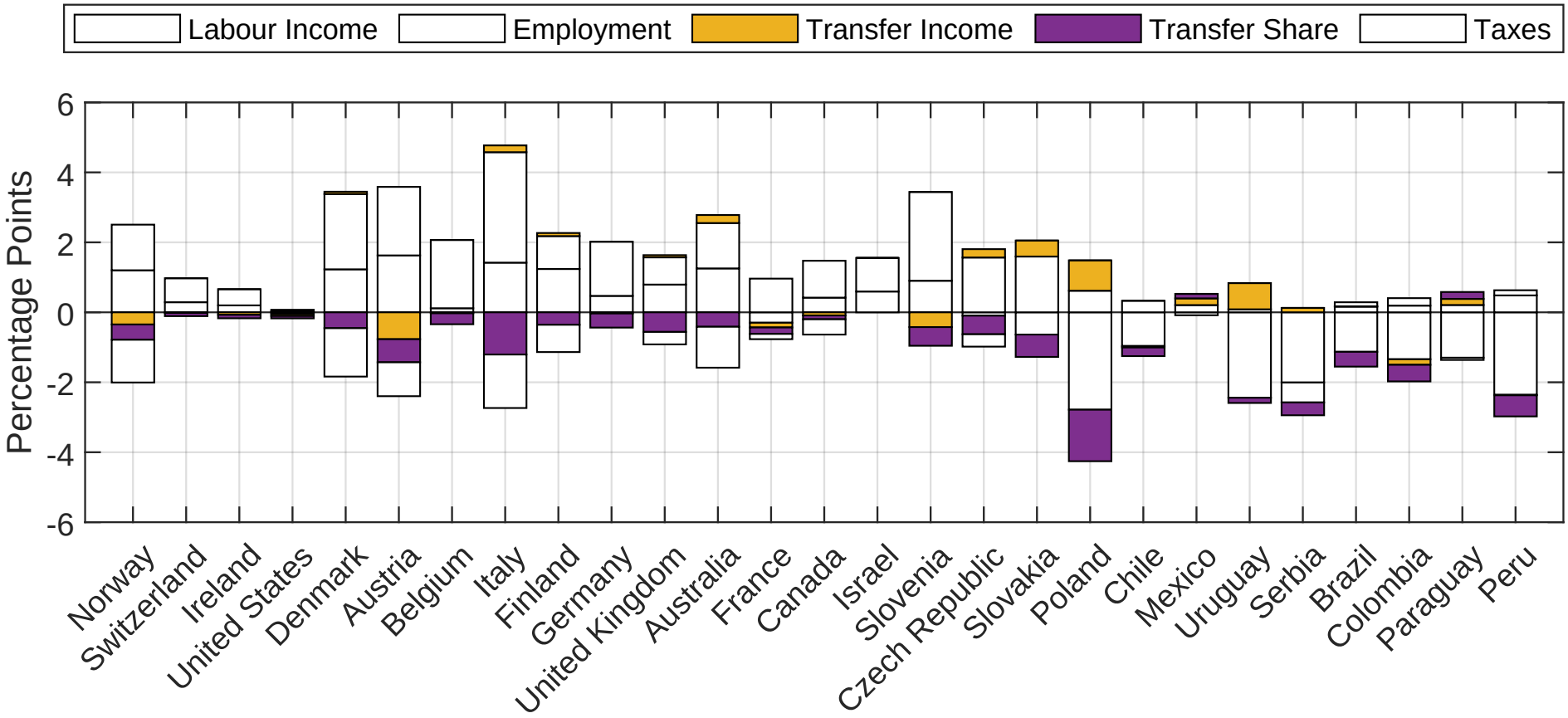
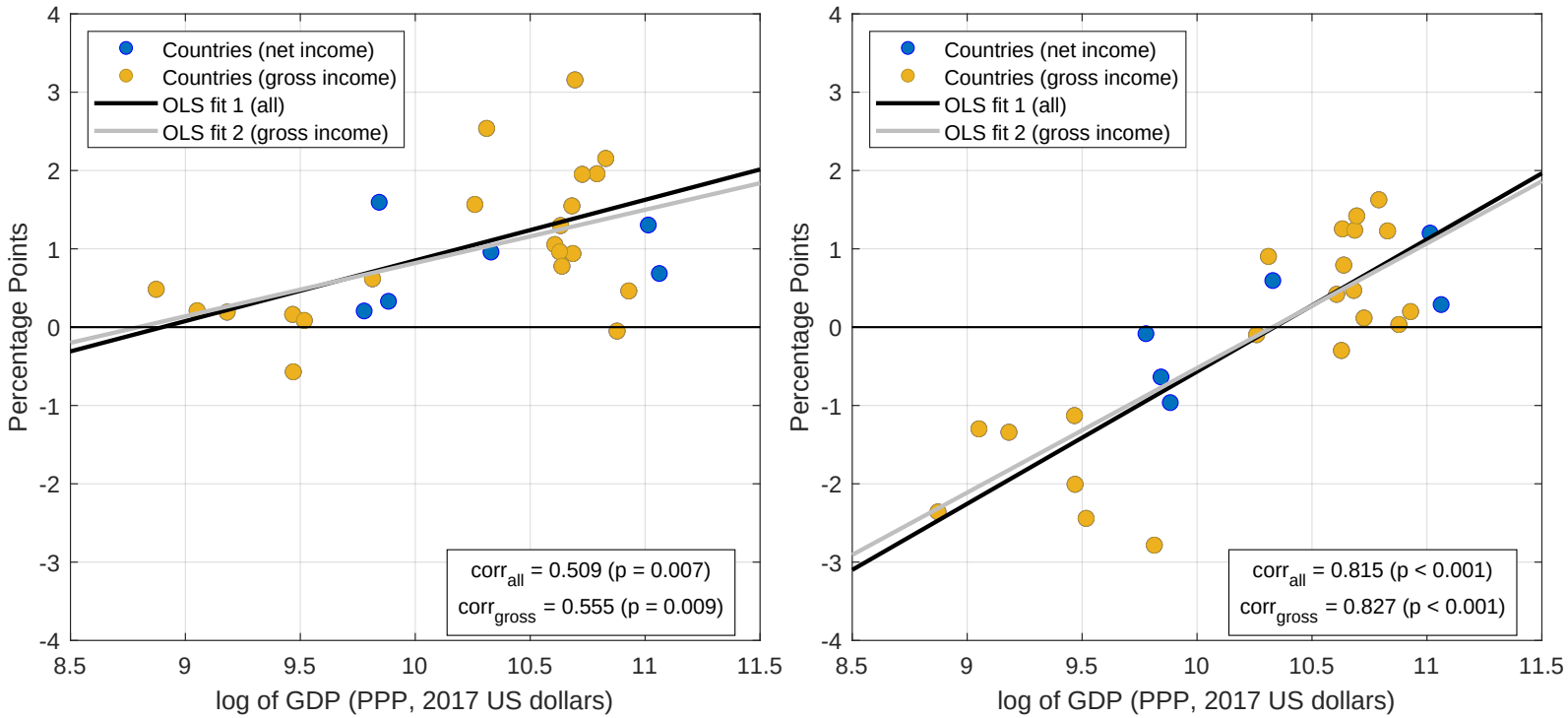


- What is the role of the pensions?

GDR components and Economic Development

Figure: Employment and Labor Income Contribution to *GRD* vs GDP level



(a) Employment Contribution

(b) Labor Income Contribution

GDR components and Economic Development

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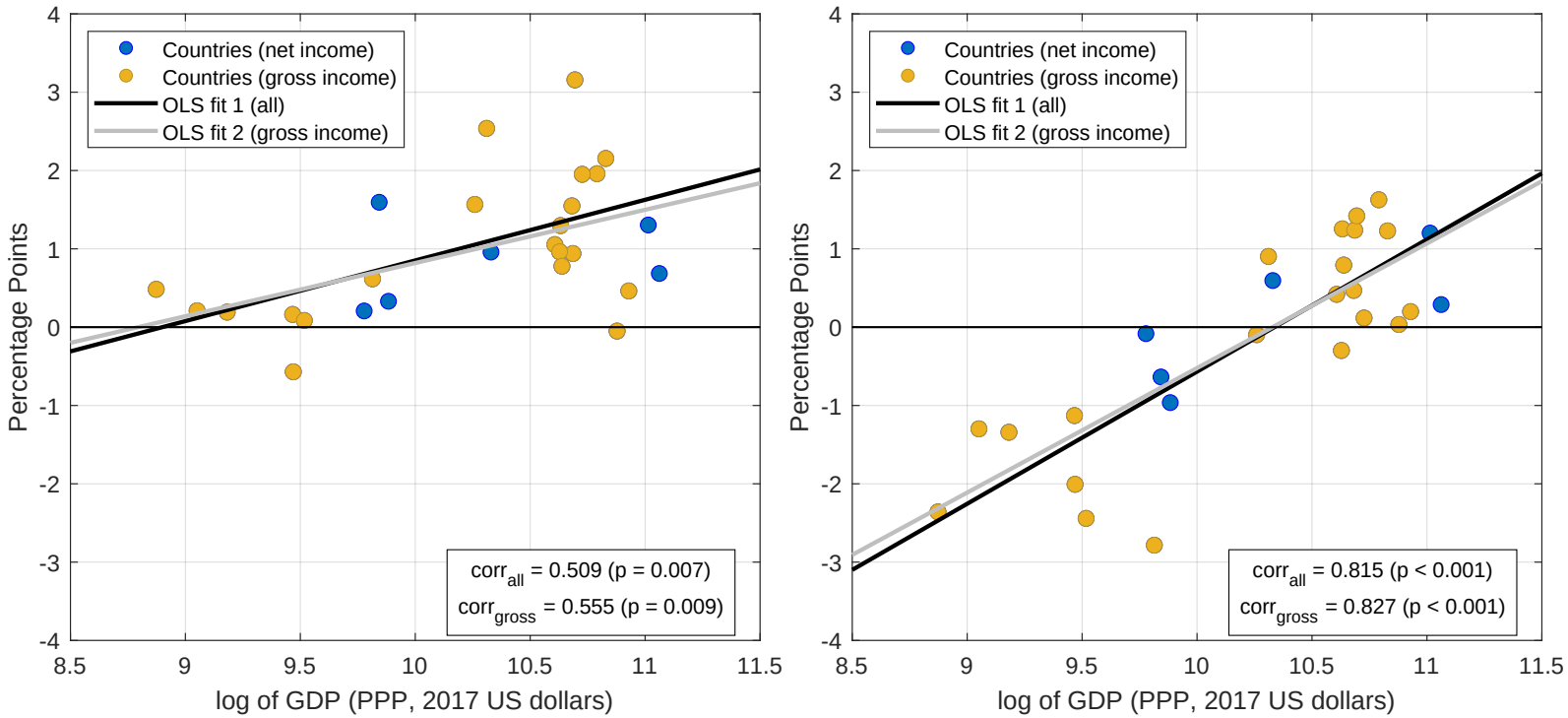

(a) Employment Contribution (b) Labor Income Contribution

Stylized fact 3. Rich countries: main contributor to positive *GRD* is O/Y divergence in employment rates. Lower-income countries: main contributor to negative *GRD* is faster increase in labor income, conditional on being employed, of the young with respect to the old.

Conclusions

- Intergenerational Income Inequality:
  - Increasing in *all* rich countries
  - However, not a global trend
- Mainly explained by:
  - Increasing employment rates among old
  - Change in relative wages of old and young workers
- Two important questions to be answered:
  - Any reason beyond equality/fairness to care about IGI inequality?
  - What future trends to expect in developing countries?
    Are governments shaping their pension schemes and borrowing accordingly?