

The Evolution of Moral Belief Systems across Four Decades: Different Pathways for Universal and Culture-specific Moralities

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Research question

- Human morality is a crucial aspect of collective human behavior
 - Shared code that tells people what is right or wrong
 - Regulates group behavior otherwise driven by self-interest & self-indulgence
 - Vital for the well functioning of any culture and society
- Moral universalism vs. relativism debate

Research question

- Moral universalism
 - Justice and fairness are universal moral principles because genetic evolution has disfavored unfair behavior that takes advantage of the system of social cooperation necessary for human survival
- Relativism
 - Moral outlooks differ among individuals and cultures
 - This is because people from different cultures experience different adaptive problems to their socio-environmental niches
 - Moral codes emerge from social and cultural processes that stand only in an indirect relationship to biological evolution
- Cross-section evidence lends support to both (Haidt, Vauclair & Fischer)
- Not clear if these two facets follow the same trajectory over time

Research question

- During the decades after WWII many societies have seen changes in what people thought to be morally right.
 - E.g.: pre-marital sex, divorce, abortion, homosexuality, euthanasia
- But moral issues related to violations of the code of social cooperation stir up a unified condemnation
- There might be different moral systems at place, with different implications for social conflict
- Need for studying how these apparently different moral systems evolve in modern times and their implications

Outline of the paper

- The two facets of moral beliefs
- Moral change and socioeconomic context
- Hypotheses
- Data & methods
- Results
- Conclusions

The two facets of moral beliefs

- Dual Inheritance Theory (Boyd & Richerson 1985)
 - There are universal and relative moral codes
 - Human behavior is shaped by biological and socio-cultural inheritance

The two facets of moral beliefs

- Biological inheritance (e.g., Wilson 1993)
 - Some genetic traits enhance the probability of survival (through natural selection)
 - This can change the population's genetic makeup with respect to a trait
 - Widespread consensus about moral codes that prevent harm-doing and enhance social cooperation
 - These traits were crucial for human survival in ancestral environment
 - Cross-cultural rejection/punishment of selfishness, cheating & free-riding

The two facets of moral beliefs

- Socio-cultural inheritance (e.g., Berry, Poortinga et al 2011; Dawkins 1976)
 - Operates by developing culture-specific values, beliefs & practices adapted to solve specific socio-environmental demands
 - “Memes” can experience similar evolutionary processes as genes, contributing to cultural differences and cultural change

The two facets of moral beliefs

- Autonomy vs embeddedness cultural values
 - Individualism-collectivism (macro) or independent-interdependent self-construal (micro)
 - Cultural variation in moral concerns that focus on either individual rights or communal social duties (Shweder et al 1997; Haidt 2008)
 - Evident differences in moralized issues (abortion or gay marriage) about which people feel strongly convinced to be right
 - Research has shown that:
 - **Individualistic cultures** endorse moral codes emphasizing individual rights and autonomy
 - **Collectivist cultures** tend to more strongly moralize duty-based obligations to the community (Graham et al 2016)
 - Origins of these two cultures? Wheat vs Rice farming (Talhelm & English 2020)

The two facets of moral beliefs

- Vauclair & Fischer (2011): *The two facets of morality*
 - Multilevel analysis WVS data, 56 countries, 1981-04 (single time observation)
 - Two separate dimensions emerged from factor analysis of the MDBS:

Dishonest
-illegal
behaviors

- Attitudes towards cheating and free-riding behaviors → No systematic cross-cultural variation and no predictive power of cultural values (individualism-collectivism)
 - *Reason*: the importance of social cohesion and cooperation in the phylogenetic development of humans and social groups

Personal-
sexual
behaviors

- Attitudes towards individuals' freedom of choice about how to live their lives → Individualistic cultures would be laxer than collectivist cultures
 - *Reason*: individualistic cultures put individuals' rights and freedoms ahead of the interests of the group, contrary to collectivist cultures

- They verify across-countries that the two facets of morality operate differently
- **Limitations: no study of change over time**

The two facets of moral beliefs

- Want to overcome limitations of this research:
 - Study how the two facets of morality developed over time & across-cultures
 - Use two **different theories** to explain how & why the two facets of moral beliefs progress differently over time (a more general approach than Inglehart's)
 - Apply statistical models to study change across countries: random effects within and between models (**REWB**)
 - Take into account the **age-period-cohort** components
 - **Incorporate time-varying and time invariant contextual covariates**
 - Account for the implications of the **socioeconomic context** and **modernization** for moral beliefs (Inglehart & others)
 - Look for **heterogeneous developments** in both facets of morality

Moral change and socioeconomic context

- The level of threat to survival brought about by the socio-environmental context is a key feature of cultural adaptation
 - E.g., Pathogen stress, material insecurity, inter-group conflict
- *Cross-cultural research & evolutionary psychology*: material security as a key antecedent of how individualism and collectivism influence moral codes
 - The material security hypothesis explains why ingroup loyalty developed in the form of collectivism (Hruschka & Joseph)
- *Political science* (Inglehart): material security predicts increasing levels of moral tolerance as ingroup loyalty becomes less relevant (with increasing societal prosperity, development of welfare state, etc)
 - Our take is that this change happens at different speeds depending on the cultural background of a country: faster in individualist cultures and slower in collectivist cultures

Hypotheses

- The moral blame on **dishonest-illegal behaviors** will tend to be stationary over time due to its evolutionary nature
 - Specially so in wealthy, democratic and trusting societies that enforce law, order and anticorruption policies
 - Less developed contexts with high inequality, low trust and systemic corruption will see a relaxation of the punishment of these moral beliefs
 - In terms of age-period-cohort effects, we expect:
 - *Period effects*
 - Wealthy stable countries will follow a stationary pattern
 - Poor countries will present a trend towards relaxation
 - *Cohort effects*
 - Wealthy countries will show no cohort trend
 - Poor countries will show a trend towards relaxation

Hypotheses

- The moral blame on **personal-sexual issues** would change in parallel to socioeconomic development following modernization
 - Individualistic cultures will experience deeper changes due to their higher respect for individuals' freedom than collectivist countries (*ceteris paribus*)
 - Countries not progressing socioeconomically will see a relative moral stagnation and continue to blame these behaviors
 - In terms of age-period-cohort effects, we expect:
 - *Period effects*
 - Wealthy stable countries will deeply change
 - Poor countries with a stationary pattern
 - *Cohort effects*
 - Wealthy countries will show a cohort trend
 - Poor countries will portray no trend towards relaxation

Hypotheses

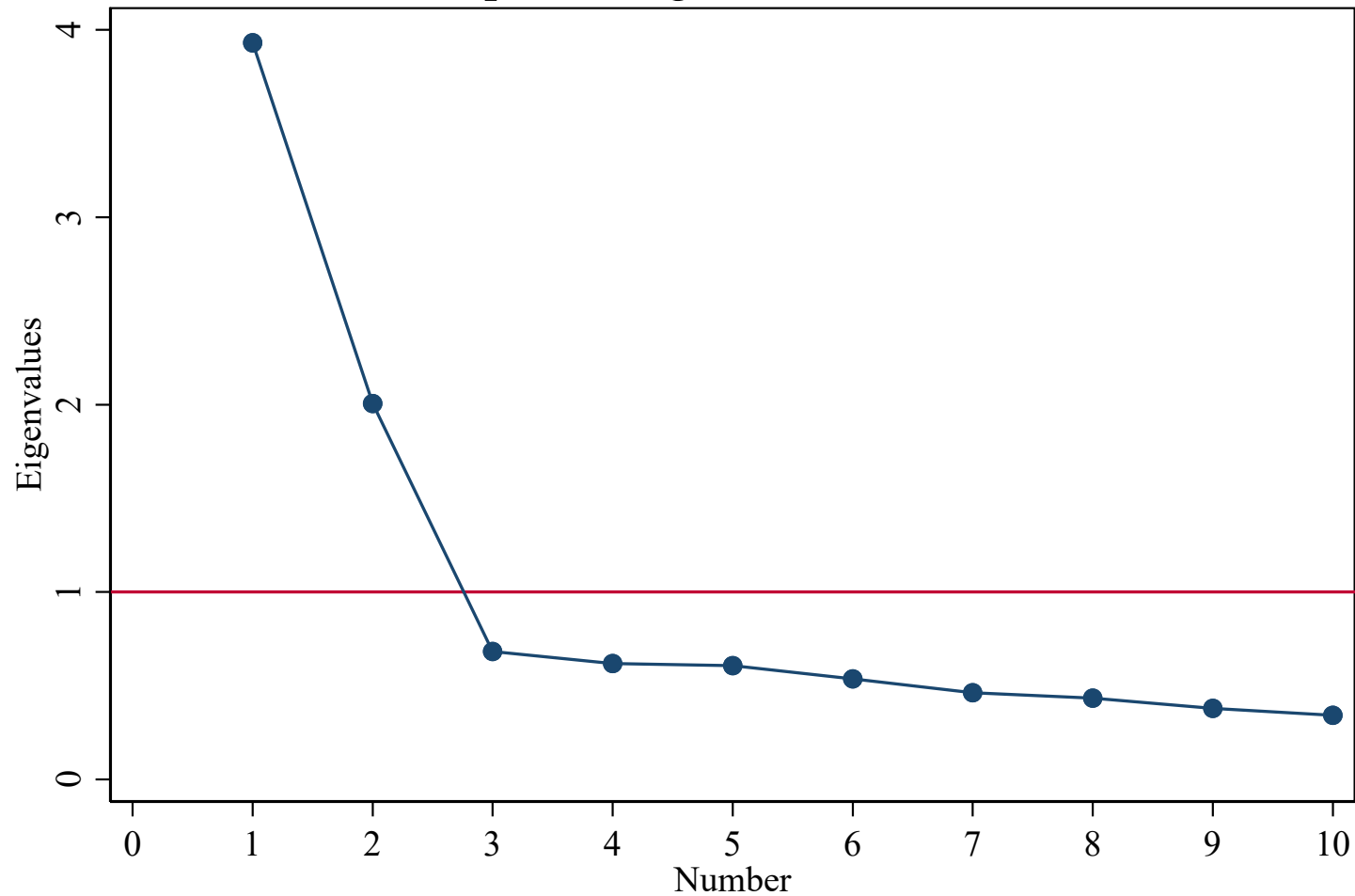
- Changes in moral beliefs will follow a **double route** (Tormos 2019).
 - *Slow route*: generational change leading to gradual change through cohort replacement
 - *Fast route*: period effects producing real-time changes in moral codes
- The dominant will be the fast route, challenging conventional theories of value/attitude change (e.g., Inglehart)

Data & methods

- Repeated cross-sections of multiple countries EVS-WVS, 1981-2021
 - 110 countries
 - 440 country-time units
 - 640,000 respondents
- Random effects within and between models (REWB)
 - Deal with **age-period-cohort effects** (+ age-centered)
 - Study the contextual **time invariant** and **time varying covariates** influencing the development of moral codes
 - **Within effects** of main contextual covariates and their interactions (!):
 - *Log GDP capita* → **personal-sexual issues** in wealthy countries (modernization)
 - *Individualism-collectivism* → **personal-sexual issues** in wealthy countries
 - *Generalized trust* → **dishonest-illegal behaviors** in poor countries
 - Use level of HDI to group countries & explore heterogenous developments

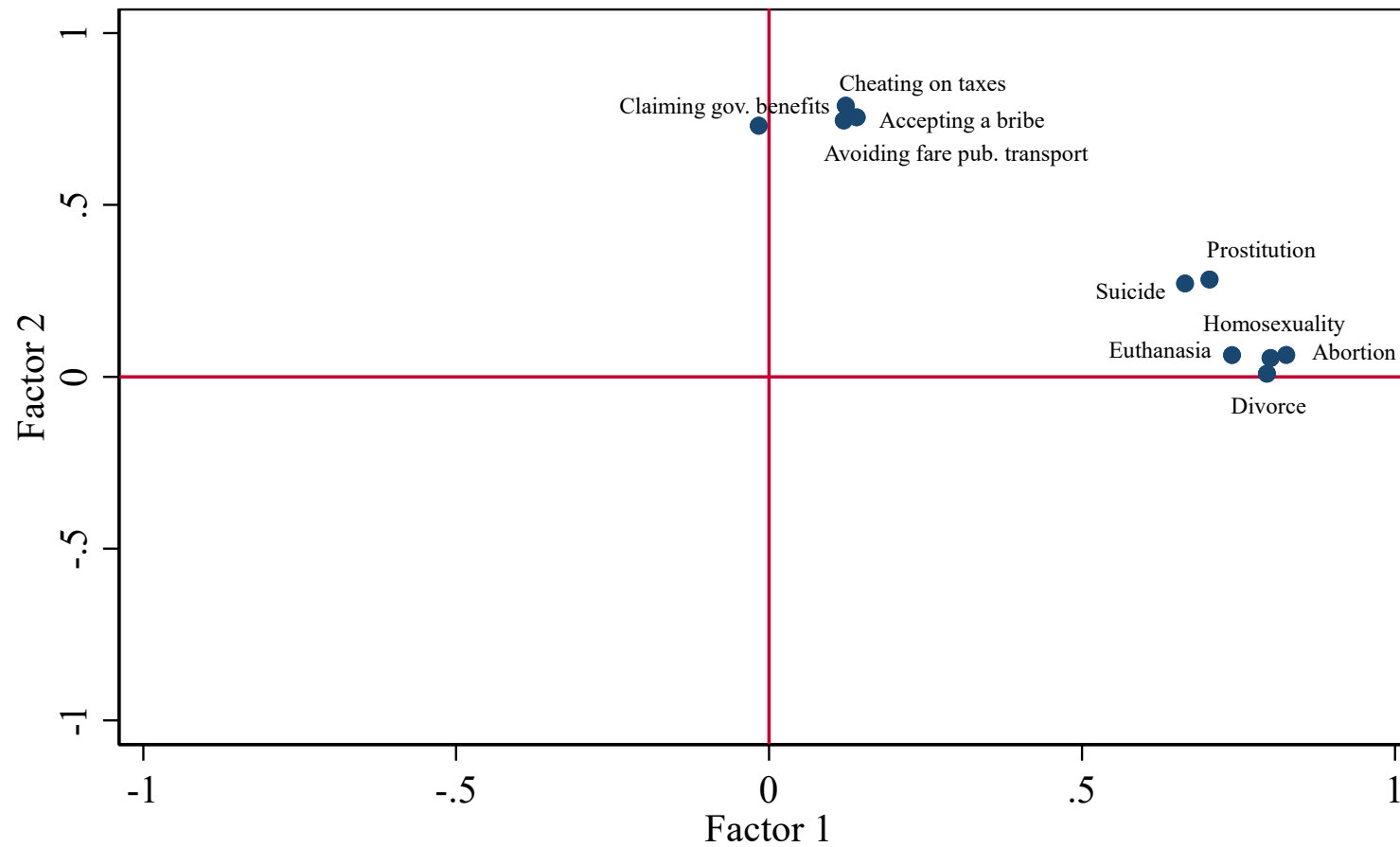
Factor analysis of moral items. Full sample

Scree plot of eigenvalues after factor



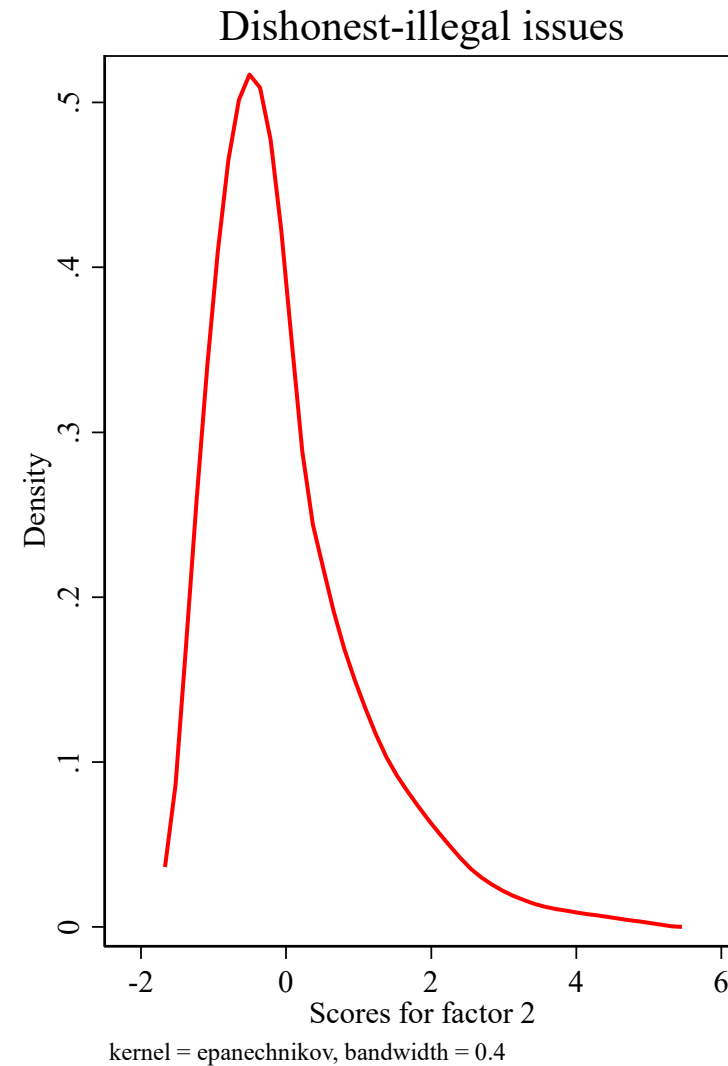
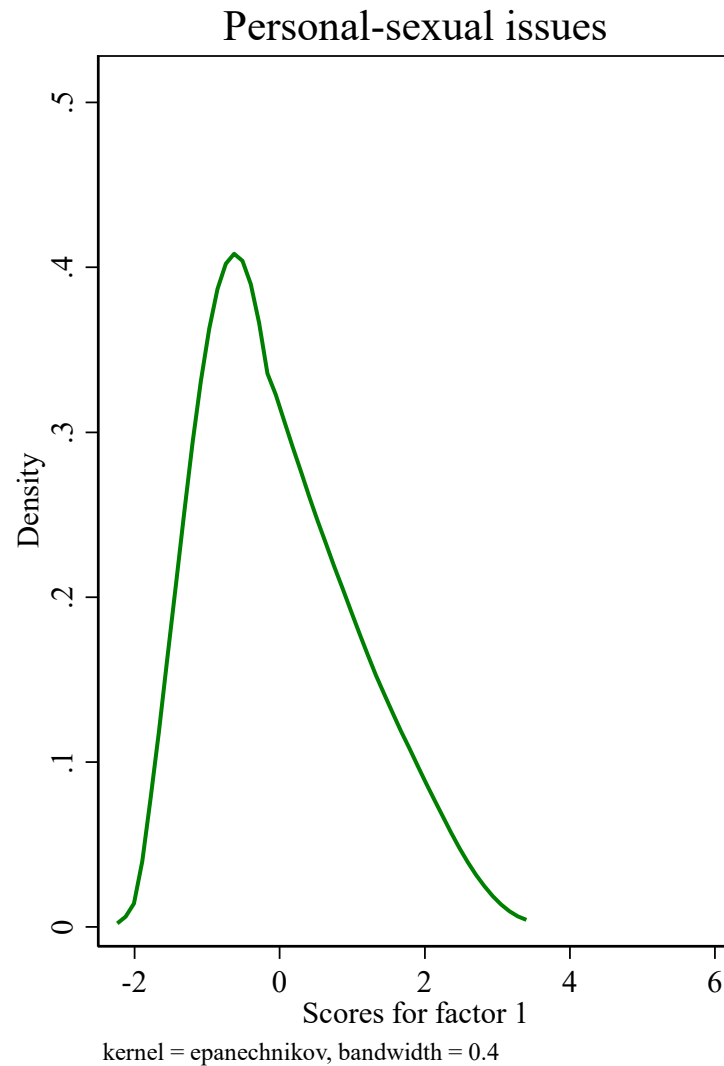
Factor analysis of moral items. Full sample

Factor loadings



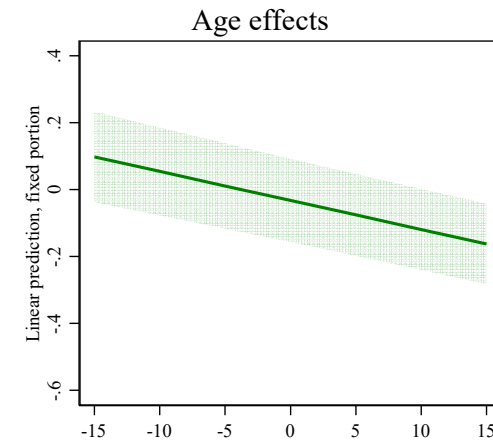
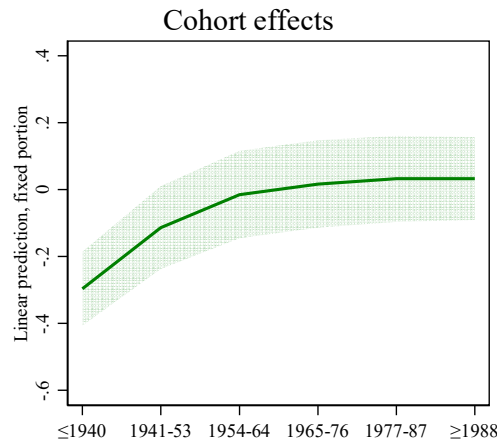
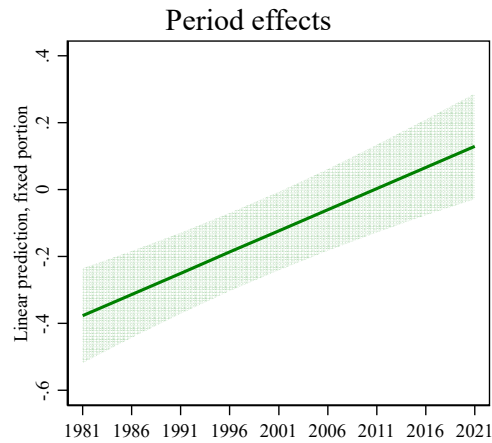
Rotation: orthogonal varimax
Method: principal-component factors

Predicted scores after factor analysis

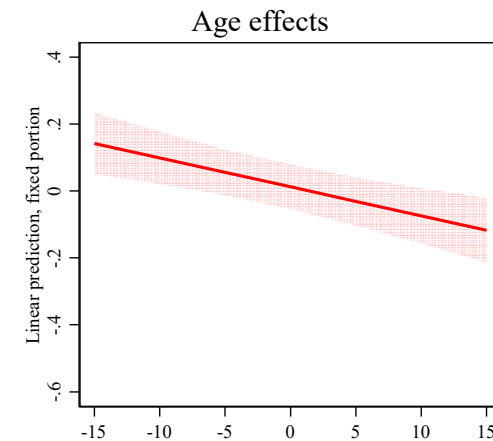
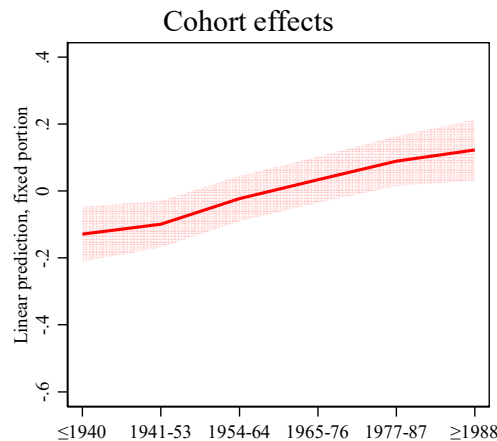
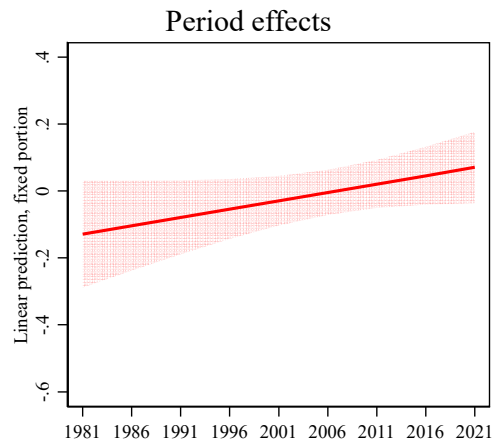


APC effects *from REWB. Full sample*

Personal-sexual behaviors

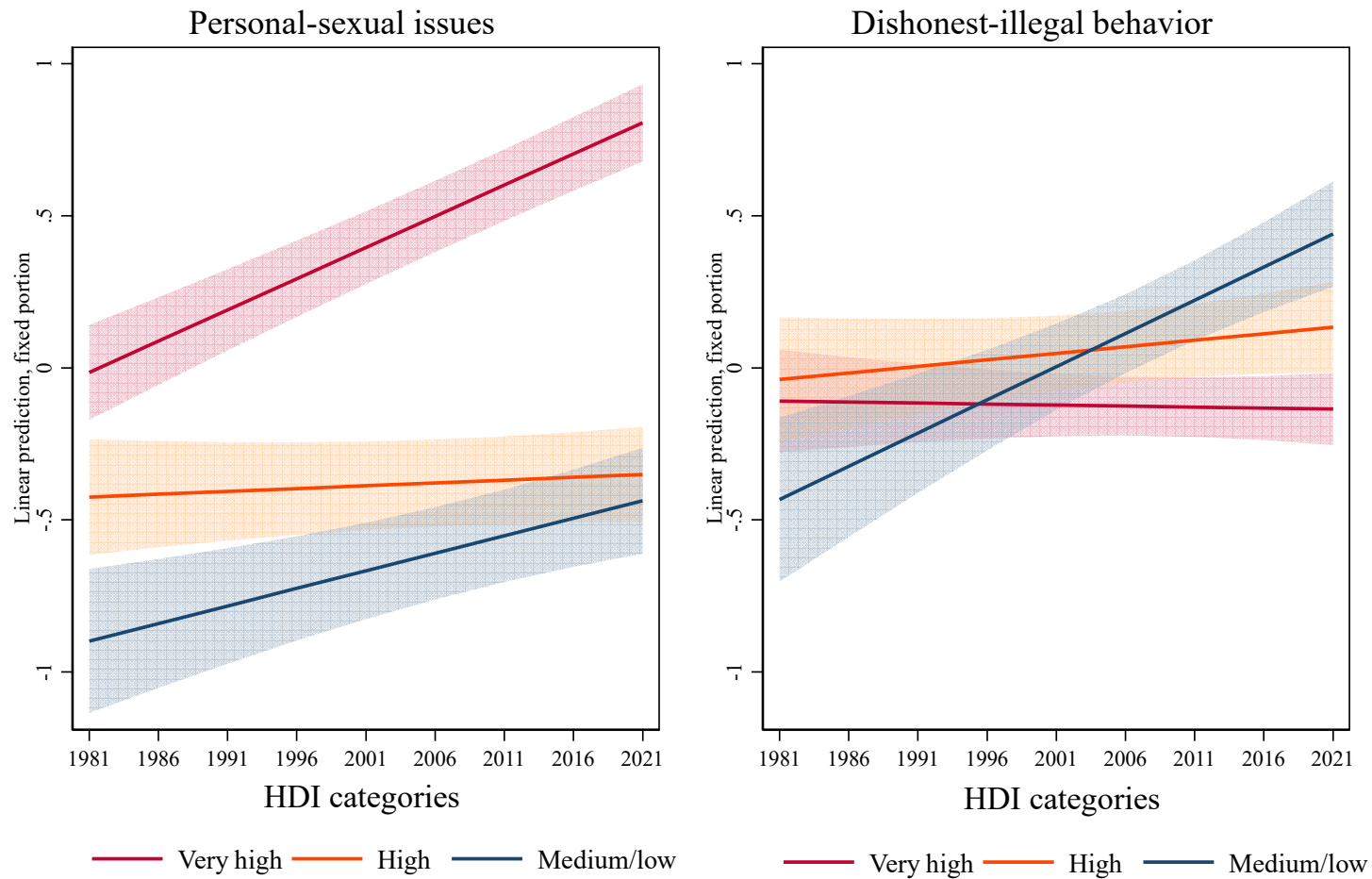


Dishonest-illegal behaviors



Period effects from REWB. Cross-level interaction with HDI

Period effects

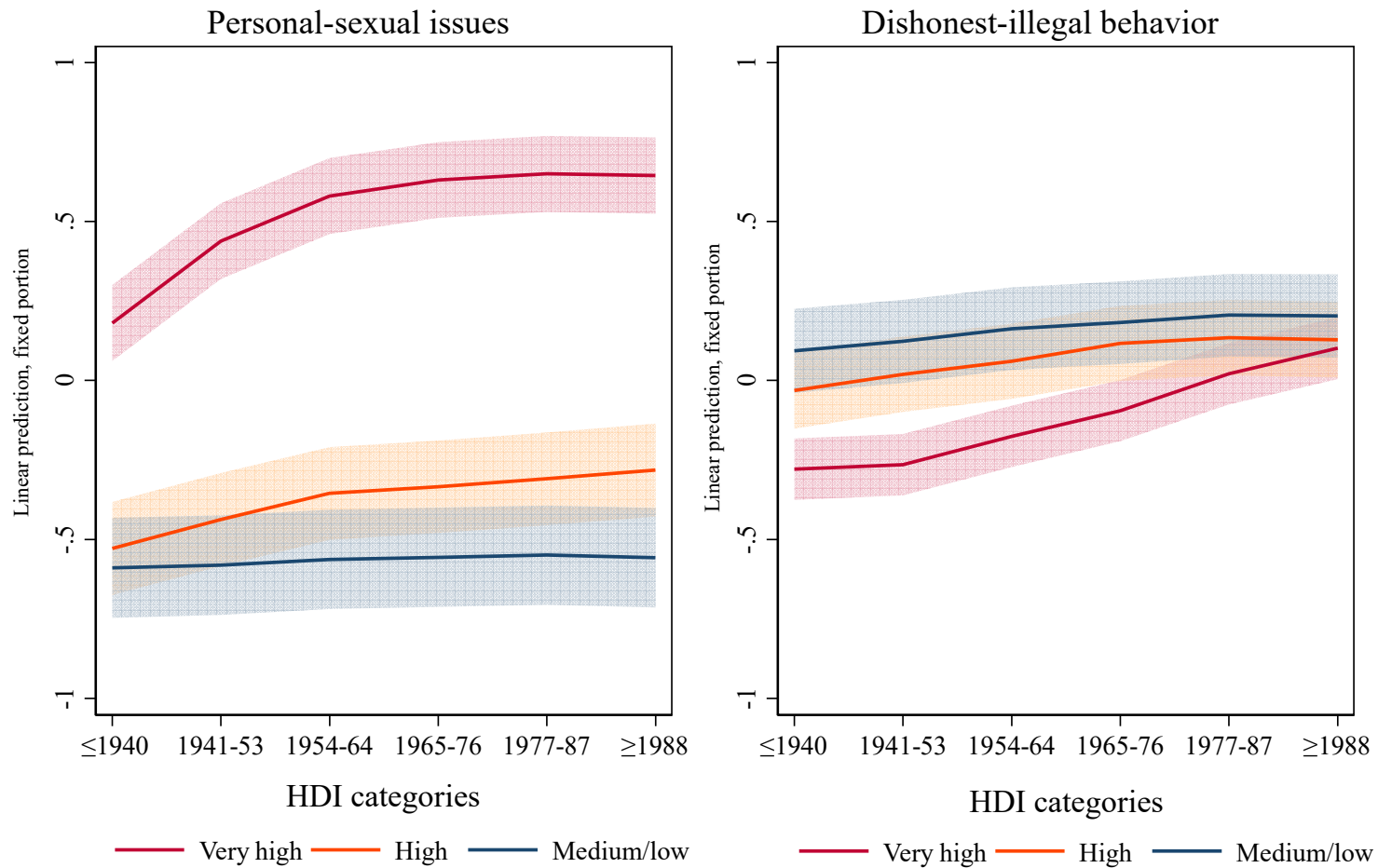


Period effects *from REWB. Cross-level interaction with HDI*

- Failing states, corrupt poor countries?
 - A context in which there in which cheating and free-riding become usual may create the conditions for this change:
 - Not proper state law enforcement, elites openly corrupt or tolerant to such behaviors (bad example)
 - Progressive societal relaxation opens the door to individuals free-riding
 - Vicious circle

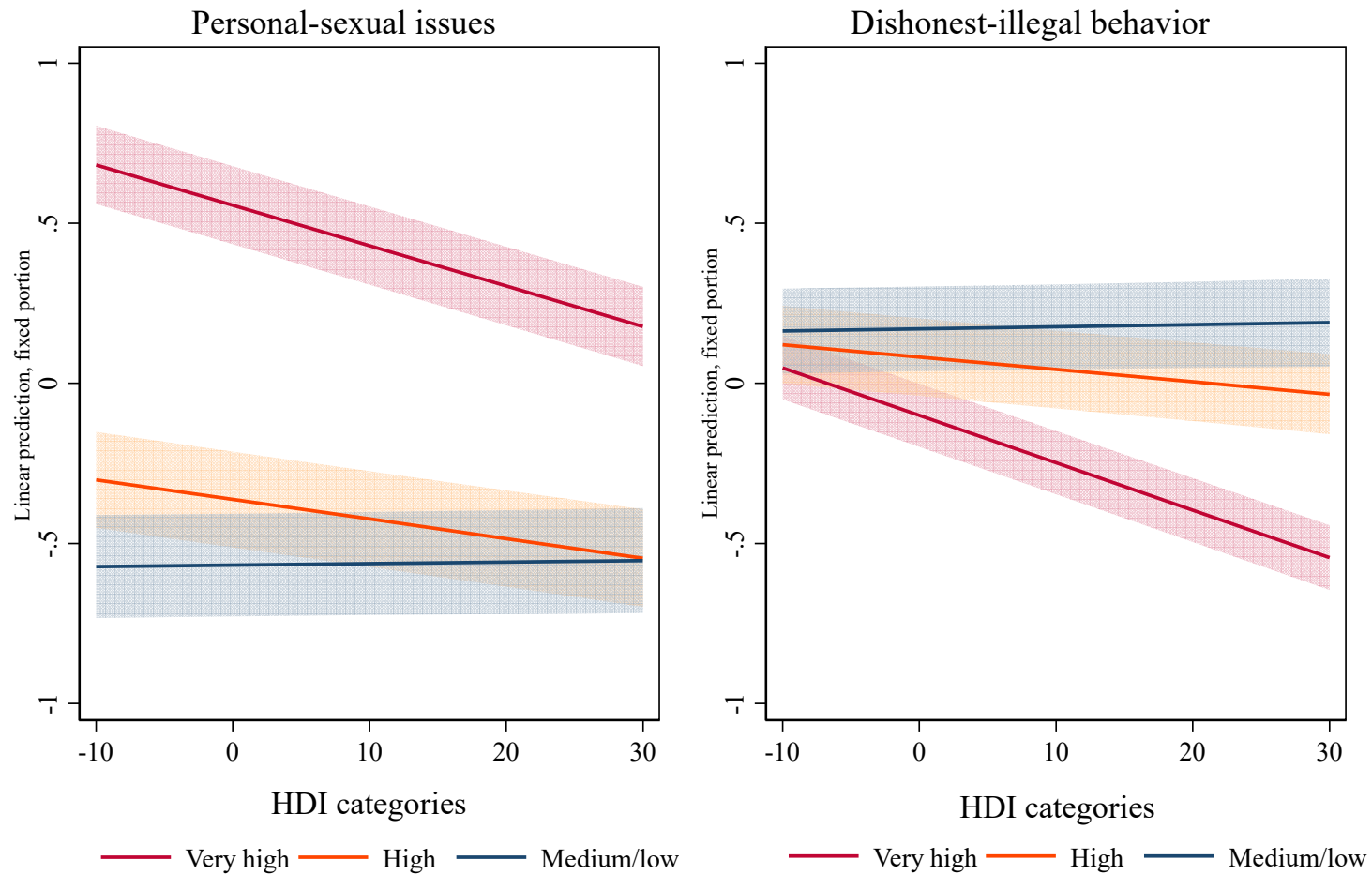
Cohort effects from REWB. Cross-level interaction with HDI

Cohort effects



Age effects from REWB. Cross-level interaction with HDI

Age effects



Personal-sexual issues. *REWB* model with contextual covariates

Mixed-effects ML regression. Personal-sexual issues

	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
Level 1						
Constant	-4.244***	.444	-9.56	.000	-5.114	-3.374
Generations						
≤1940	(ref.)					
1941-53	.179***	.006	31.03	.000	.168	.191
1954-64	.280***	.006	50.08	.000	.269	.291
1965-76	.311***	.006	54.23	.000	.300	.322
1977-87	.330***	.007	50.36	.000	.317	.343
≥1988	.342***	.008	41.53	.000	.326	.358
Age-centered	-.009***	.000	-28.60	.000	-.009	-.008
Within →	Level 2					
	GDP cap. time varying	.237***	.034	7.05	.000	.171 .303
Between →	Level 3					
	GDP cap. time invariant	.423***	.047	8.93	.000	.330 .515
Random effects parameters						
	Residual	.769	.001			
	Constant (Country)	.393	.035			
	Constant (Country-years)	.231	.014			
Mean dependent var			-0.020	SD dependent var		0.992
Number of obs.		310,444.000		Chi-square		7,994.195
Prob > chi2		0.000		Akaike crit. (AIC)		719,624.032

*** $p < .01$, ** $p < .05$, * $p < .1$

Dishonest-illegal issues. *REWB model with contextual covariates*

Mixed-effects ML regression. Dishonest-illegal issues

	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
Level 1						
Constant	.830**	.350	2.37	.018	.143	1.516
Generations						
≤1940	(ref.)					
1941-53	.028***	.007	4.120	.000	.015	.041
1954-64	.099***	.007	15.03	.000	.086	.112
1965-76	.158***	.007	23.35	.000	.145	.171
1977-87	.213***	.008	27.66	.000	.198	.229
≥1988	.243***	.010	25.01	.000	.224	.262
Age-centered	-.009***	.000	-24.24	.000	-.009	-.008
Level 2						
Within → GDP cap. time varying	.054**	.036	1.490	.137	-.017	.124
Level 3						
Between → GDP cap. time invariant	-.102***	.037	-2.72	.006	-.175	-.028
Random effects parameters						
Residual	.908	.001				
Constant (Country)	.276	.030				
Constant (Country-years)	.262	.016				
Mean dependent var		0.008	SD dependent var			1.005
Number of obs.		310,444.000	Chi-square			4,305.558
Prob > chi2		0.000	Akaike crit. (AIC)			822,155.334

*** $p < .01$, ** $p < .05$, * $p < .1$

Dishonest-illegal issues. *REWB* model with contextual covariates

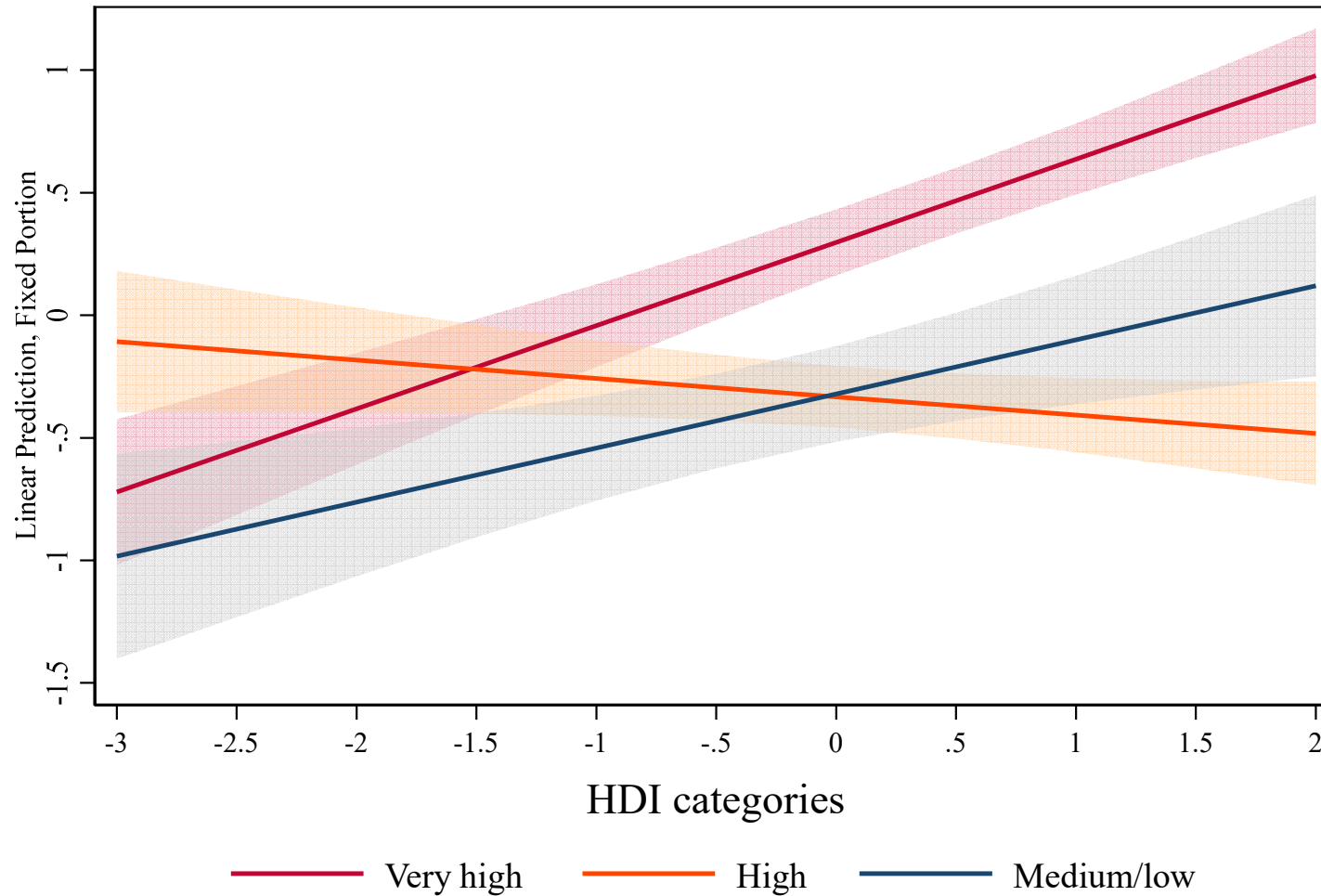
Mixed-effects ML regressions

		Personal-sexual issues			Dishonest-illegal issues		
		Countries by HDI			Countries by HDI		
		<i>Very high</i>	<i>High</i>	<i>Medium/low</i>	<i>Very high</i>	<i>High</i>	<i>Medium/low</i>
Level 2							
GDP cap. time varying	<i>Coef.</i>	0.486***	-0.045	0.379***	-0.024	0.051	0.590***
	<i>SE</i>	(0.054)	(0.038)	(0.139)	(0.024)	(0.065)	(0.121)
Level 3							
GDP cap. time invariant	<i>Coef.</i>	0.344***	0.038	0.113	-0.158**	0.227	0.209
	<i>SE</i>	(0.125)	(0.115)	(0.139)	(0.067)	(0.137)	(0.195)

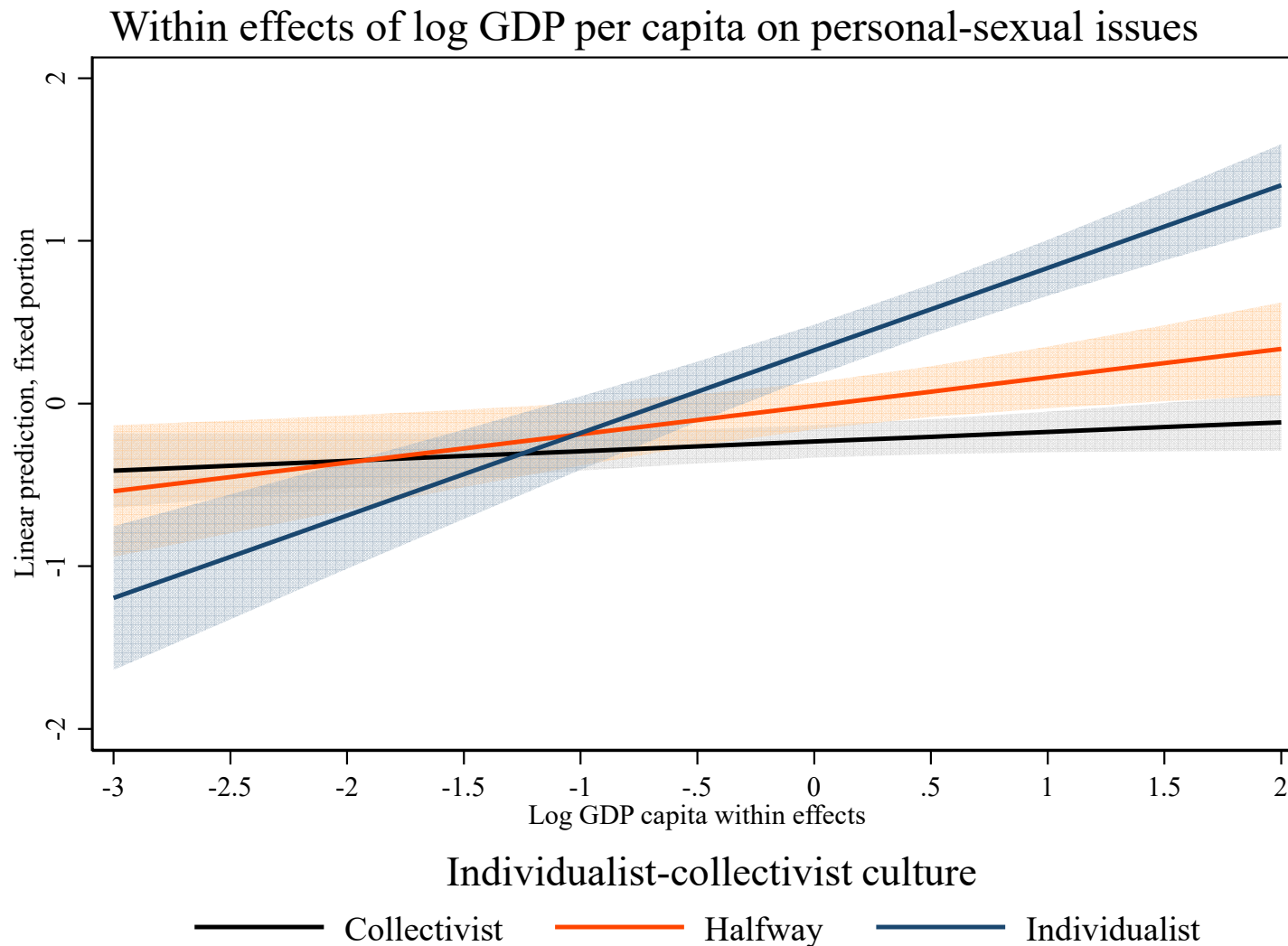
*** p<.01, ** p<.05, * p<.1

Personal-sexual issues. *Log GDP cap. (within) interacted with HDI*

Within effects of log GDP per capita on personal-sexual issues

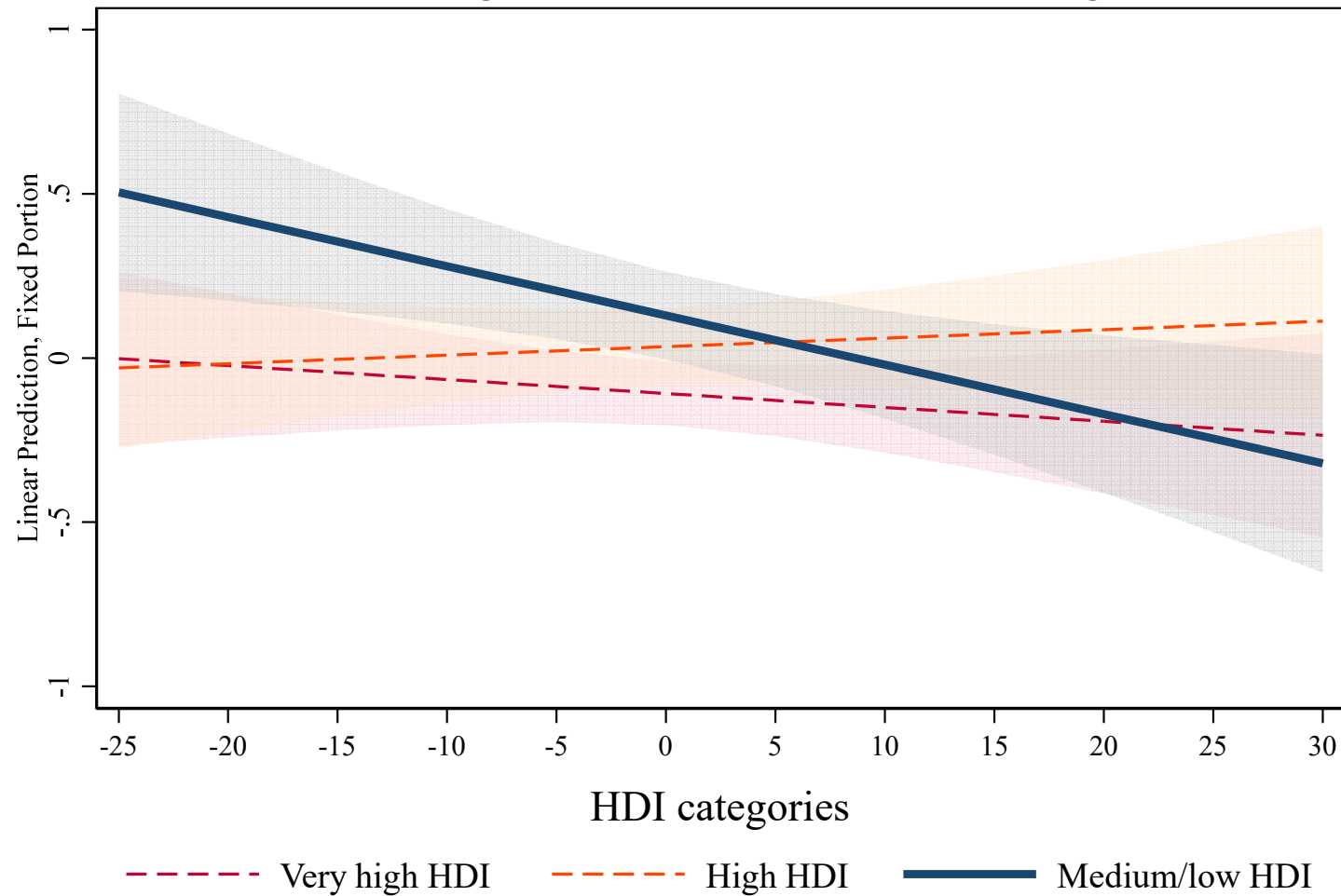


Personal-sexual issues. *Log GDP cap. (within) with Individ.-Collect.*



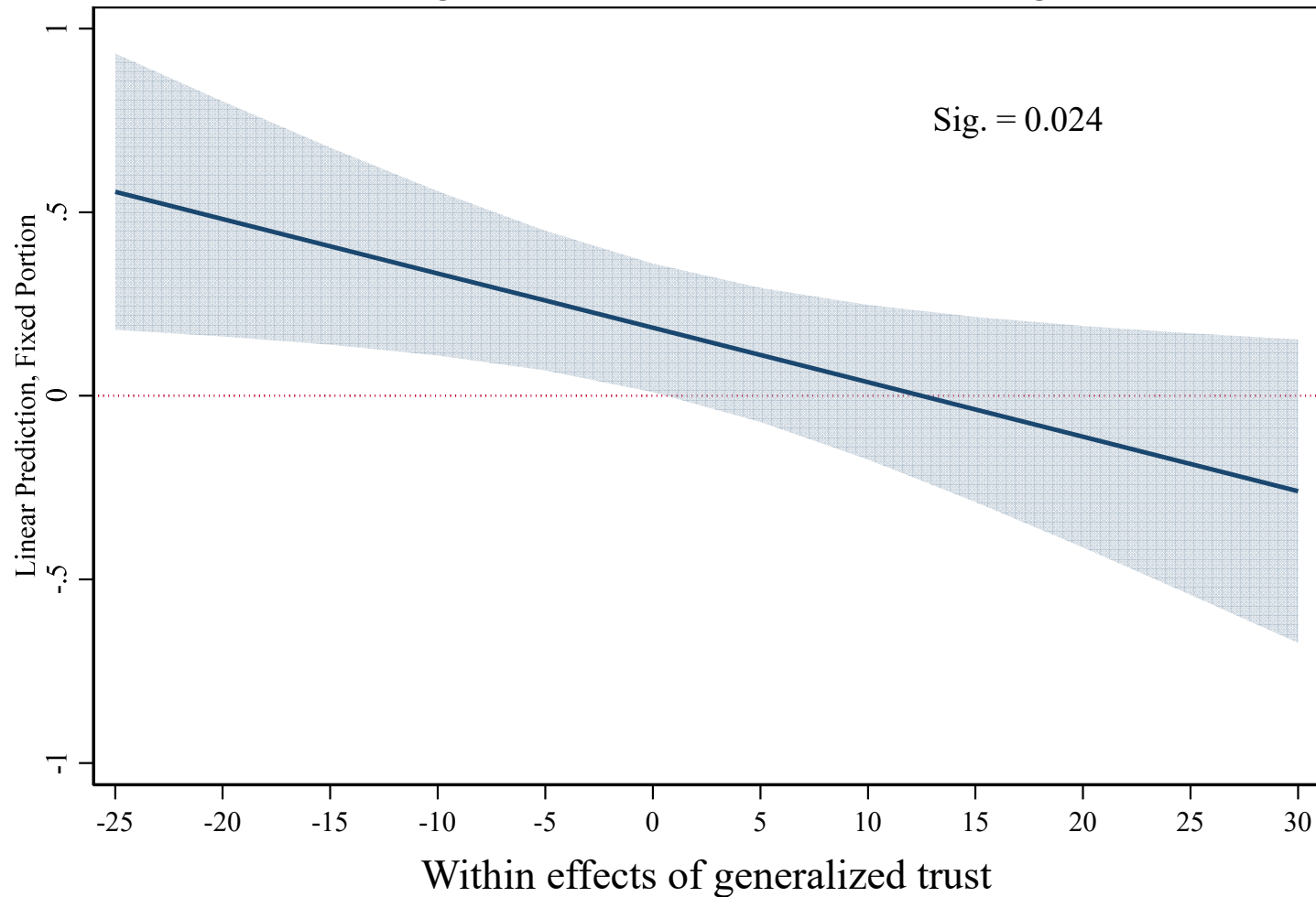
Dishonest-illegal issues. *Generalized trust. Interaction with HDI*

Within effects of generalized trust on dishonest-illegal issues



Dishonest-illegal issues. *Generalized trust. Medium/low HDI countries*

Within effects of generalized trust on dishonest-illegal issues



Conclusions

- Different developments of the two moral domains worldwide:
 - **Personal-sexual behaviors**
 - Grow in parallel to socioeconomic development
 - Heterogenous effects of socioeconomic growth: moderated by individualist-collectivist culture
 - Period effects are key, but also cohort effects
 - **Dishonest-illegal behaviors**
 - Stable blame in wealthy countries, but increasing lenience in poorer nations
 - The decreasing generalized trust in poorer countries is connected to the growing acceptance of cheating / free-rider behaviors
 - Period effects in poorer nations; and cohort effects (!) in wealthy countries

Thank you for your attention